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PHASE II
ENVIRONMENTAL SITE ASSESSMENT

40 SIR JOHN A. MACDONALD BOULEVARD
KINGSTON, ONTARIO

Prepared for:

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ES 1. EXECUTIVE SUMMARY

XCG Consulting Limited (XCG) was retained by Siderius Developments Ltd. to conduct a Phase II Environmental Site Assessment (ESA) of the property at 40 Sir John A. MacDonald Boulevard, in Kingston, Ontario (subject property or site).

The subject site consists of one irregular shaped building comprising a total footprint of approximately 1,918 square metres (20,645 square feet) located on a 3.28-hectare (8.11-acre) parcel of land on the south side of Union Street and west of Sir John A. MacDonald Boulevard in Kingston, Ontario.

The scope of this environmental investigation was based on the findings of a Phase I ESA completed by XCG. The findings of the Phase I ESA were documented in a report prepared by XCG titled "Phase I Environmental Site Assessment, Former Kingston Prison for Women, 40 Sir John A. MacDonald Boulevard, Kingston, Ontario," dated March 27, 2019.

Based on the findings of XCG's Phase I ESA, XCG proceeded with a Phase II ESA to investigate soil and groundwater quality in the areas of potential environmental concern. This report follows the general requirements set out by CSA Standard Z769-00 (R2018). The requirements of Ontario Regulation (O. Reg.) 153/04, as amended, were not strictly followed; therefore, this Phase II ESA would not be suitable for use in support of the filing of a Record of Site Condition (RSC).

The key findings of the Phase II ESA conducted at 40 Sir John A. MacDonald Boulevard, Kingston, Ontario, are summarized below:

- 12 test pits were completed on July 15 and 16, 2019. Soil samples from the test pits were submitted for analyses of the following: petroleum hydrocarbons (PHCs) (Fractions F1 to F4), metals, pH, electrical conductivity (EC), sodium adsorption ration (SAR), polycyclic aromatic hydrocarbons (PAHs), and/or volatile organic compounds (VOCs).
- Six boreholes were advanced on the subject property with monitoring wells installed in all of them between June 25 and 26, 2019. Select soil samples were submitted for analyses of one or more of the following: PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs. Monitoring wells were installed to depths ranging between 4.57 and 7.92 metres below the ground surface (bgs).
- Groundwater samples were collected from four of the newly installed monitoring wells on July 12 and 15, 2019, with supplemental sampling conducted on August 2, November 25, and December 11, 2019. The groundwater samples were submitted for analyses of one or more of the following: PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs.
- The "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act," dated April 15, 2011, by the Ministry of the

Environment (MOE, or the Ministry[1]) was consulted in the assessment of soil and groundwater quality on the subject property. Table 3 Full Depth Generic Site Conditions Standards in a Non-Potable Ground Water Condition, and Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition, for residential/parkland/institutional land use, were used to evaluate soil and groundwater quality.

- In the 2019 investigations, relatively minor exceedances in soil of the MOE Table 3 and Table 7 standards were observed in six sampling locations for one or more of the following parameters: EC and metals (barium, lead, and mercury). Historical exceedances, found in soil in investigations prior to 2019, of PHCs, PAHs, VOCs, and metals were not found during the 2019 field investigations. The barium exceedances at the Phase II ESA Property are not considered to be indicative of a zone of contamination, but rather are considered to be naturally occurring. Therefore, no remedial action to address the elevated barium concentrations is required.
- In the 2019 investigations, relatively minor exceedances in groundwater of the MOE Table 3 or Table 7 standards were observed in one monitoring well, MW19-4, for PHCs (F3); however, subsequent sampling of this monitoring well showed no exceedances during two follow-up sampling events. Therefore, the exceedance observed during initial sampling of monitoring well MW19-4 is likely due to the sediment observed within the sample water. No remedial action is required with respect to groundwater quality on the Phase II ESA Property.
- Based on the contaminants observed and the groundwater flow direction, there is no indication that contamination is migrating off the property or causing an off-property impact.

The overall conclusion of this Phase II ESA of the subject property located at 40 Sir John A. MacDonald Boulevard, Kingston, Ontario, is that the findings of XCG's investigations indicate the presence of relatively minor soil contamination in various areas investigated. Based on the analytical results and the direction of groundwater flow, there is there is no indication that contamination is migrating off the property or causing an off-property impact.

ES 1.1 Limitations

The limitations detailed in Section 5.1 of this report apply to the entirety of the report, including this executive summary. This executive summary is not intended as a stand-alone document, but instead is intended to be read in conjunction with the whole report.

[1] Previously known as the MOE, the Ministry of the Environment and Energy (MOEE), and the Ministry of the Environment and Climate Change (MOECC). Currently known as the Ministry of the Environment, Conservation and Parks (MECP).

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1. INTRODUCTION

1.1 Site Description

XCG Consulting Limited (XCG) was retained by Siderius Developments Ltd. to conduct a Phase II Environmental Site Assessment (ESA) of the property at 40 Sir John A. MacDonald Boulevard, in Kingston, Ontario (subject property or site).

The subject site consists of one irregular shaped building comprising a total footprint of approximately 1,918 square metres (20,645 square feet) located on a 3.28-hectare (8.11-acre) parcel of land on the south side of Union Street and west of Sir John A. MacDonald Boulevard in Kingston, Ontario. The subject property is zoned "Institutional Use" and is situated in an area that predominately consists of institutional as well as residential uses.

The building on the subject site is near the centre of the site, towards the east. There is a parking area near the northwest corner of the property, and a laneway that runs to the south side of the building. There is a sidewalk from Sir John A. MacDonald Boulevard to the entrance of the building. The remainder of the property is landscaped with grass and some trees along the edge of the property. The subject site was historically occupied by the Prison for Women, and is now primarily vacant. Small portions of the property have, in the last few years, been used for storage of wood beams, electrical cable, and assistive devices (wheelchairs, canes, crutches) as well as police training.

1.2 Background

Based on the results of the Phase I ESA completed by XCG (March 27, 2019), including the site visit, information provided by persons knowledgeable about the subject property, records reviewed, the historical review of the subject property, and receipt and review of the response from the Ministry of the Environment, Conservation and Parks (MECP, or the Ministry[2]) regarding the Freedom of Information (FOI) request, several potentially contaminating activities were identified on the subject property and on the adjacent properties. They are discussed in the sections below.

1.2.1 Recent Site Operations

XCG is aware that a relatively small area located in the western portion of the site has at times been used for the placement of snow removed from Queen's University sidewalks, parking lots and curbs during plowing in the winter. This has the potential to have resulted in elevated sodium and chloride concentrations in the groundwater, electrical conductivity and Sodium Absorption Ratios (SAR) levels in the soil, as well as metals and petroleum hydrocarbon (PHC) impacts in soil and groundwater.

[2] Previously also known as the Ministry of the Environment (MOE), the Ministry of the Environment and Energy (MOEE), and the Ministry of the Environment and Climate Change (MOECC).

1.2.2 Previous Investigation and Assessment Reports

As part of the Phase I ESA, XCG reviewed the following reports previously prepared for the subject site:

- Jacques Whitford, 2004, "Phase I Environmental Site Assessment Report, Kingston Prison For Women – Extra Parcel, 40 Sir John A. MacDonald, Kingston, Ontario K7M 1A1," dated March 8, 2004, prepared for Canada Lands Company CLC Limited. (Referred to in this report as "Extra Parcel Phase I ESA Report");
- Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited. (Referred to in this report as "Limited Phase II ESA Report");
- Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004. (Referred to in this report as "Supplemental Phase II ESA Report");
- Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston prison for Women," dated January 13, 2005. (Referred to in this report as "Phase III ESA Report"); and
- Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited. (Referred to in this report as the "Remediation Report").

The 2004 Phase I ESA identified releases from underground storage tanks (USTs) on an adjacent property in 1990. Based on the location of the USTs directly adjacent to the subject property, the historical operation of these USTs is considered a potential source of environmental impact to the site.

A review of the five above reports was conducted by XCG, which compared the analytical results of the Phase II investigations to the 2011 Table 3 and Table 7 Standards. The historical analysis of the total petroleum hydrocarbons (TPH) fractions of gasoline/diesel and heavy oils were compared to the PHCs (F1 to F4).

Taking into account areas that were excavated as documented in the Remediation Report, the following soil sampling locations had concentrations of certain parameters above the 2011 Table 3 and Table 7 standards:

- BH04-2 GS-1 [0 – 0.76 metres below ground surface (bgs)]: total xylenes;
- MW04-6 SS-4 (1.8-2.4 metres bgs): lead;
- TP04-3 GS-4 (2.8 metres bgs): lead; and
- TP04-22 Composite (0.04 – 1.3 metres bgs): lead and zinc.

Additional samples collected as part of the Phase III ESA confirmed that the following exceedances identified as part of the Phase II investigations could be discounted:

- BH04-10 GS-1 (0 – 0.76 metres bgs): PHCs (F1 to F4) – composite sample BH04-19 was collected within a 1 metre radius (Phase III ESA Report) –

concentrations of PHCs (F2, F3, and F4) were below detection limits and below applicable standard. PHC (F1) was not analyzed in the composite sample and, therefore, remains an outstanding concern.

- MW04-5 SS-1 (0 – 0.6 metres bgs): lead – composite sample BH04-21 was collected within 1 metre radius (Phase III ESA Report) – concentration of lead was below applicable standard.
- TP04-9 GS-1 (0.75 metres bgs): EC - composite sample BH04-20 was collected within a 1 metre radius (Phase III ESA Report) – EC was below applicable standard.

XCG compared the analytical results of the 2007/2008 confirmatory samples to the 2011 Table 3 Standards. The following final confirmatory samples had concentrations of metals that exceed the current applicable standards:

- AEC1 floor sample F1 (barium) and wall samples EW SA4 (lead), EW SA8 (lead), and WW SA2 (barium);
- AEC2 wall samples WW SA1 (lead) and NW SA2 (lead); and
- AEC3 wall samples WW SA1 (mercury), WW SA2 (mercury), and SW SA6 (mercury).

A pH value of 10.48 was identified in a soil sample in BH04-9. This area was excavated as part of the 2008 remediation (AEC1). However, confirmatory samples were not analyzed for pH.

A total of six composite soil samples were submitted for PAHs analysis. Some PAHs were detected but were below applicable standards in two samples and another sample had method detection limits (MDLs) above the 2011 Table 3 and Table 7 Standards.

Groundwater samples were collected from five on-site monitoring wells and analyzed for BTEX, PHCs, metals, and conductivity. Concentrations of all analyzed parameters were below the 2011 Table 3 and Table 7 standards, with the exception of PHC (F3) in one monitoring well (MW04-6), which exceeded the 2011 Table 3 and Table 7 standards.

1.2.3 2019 Phase I ESA – Additional Findings

The 2019 Phase I ESA investigation confirmed all of the above potential sources of environmental impacts, and also identified the following additional potential sources of environmental impacts:

Underground Storage Tanks – Current

The ERIS Environmental Database report identified records of a 4,546-litre capacity diesel fibreglass single wall UST and one 4,546-litre capacity private fuel storage tank as well as two historical 4,546-litre capacity diesel fuel fibreglass single wall USTs. The locations of the USTs are unknown. A customer service advisor with the TSSA reported to XCG that the TSSA database has one record of an active fuel-related UST. Based on additional information received since the Phase I ESA was finalized, the above-listed USTs were determined to be, or to have been, located on the federally owned property (i.e. Heating Plant/Penitentiary Museum) south of the subject

property. Therefore, these USTs are no longer considered to be a concern with respect to potential impacts on the subject property.

Fill Materials

Site personnel indicated that fill was placed to level the site following the selective demolition of the additions on the north side of the building. The remnants of the walls may have been graded on-site, with a thin layer of topsoil placed atop the fill. The source of the fill, as well as the quantity, is unknown and therefore presents a potential source of significant environmental impact.

1.3 Scope of Subsurface Investigations

The scope of the Phase II ESA work conducted by XCG on the subject property consisted of the following:

- XCG co-ordinated the mobilization and demobilization of all personnel and equipment required to complete the work. Prior to the subsurface investigations, utility locates were carried out in all of the areas where subsurface work was conducted.
- Six boreholes were advanced on the subject property at locations in the vicinity of features of concern listed above. The boreholes were drilled to at least 1.5 metres below the groundwater table. The maximum depth was 7.9 metres bgs. Within the overburden, soil samples were collected using a split spoon sampler at 0.61-metre intervals. An air rotary drill or coring tool was used within the bedrock.
- Approximately 19 test pits were completed in several of the areas of concern listed above. During test pit excavations, observations of the soil conditions were made and recorded, and representative soil samples were collected at appropriate intervals in each test pit.
- Total organic vapour (TOV) concentrations were measured with a photoionization detector (PID) in the headspaces of all soil samples collected during borehole drilling and test pit excavation on-site. Based on the results of the TOV concentrations, any evidence of staining and visual appearance, soil samples were selected for analysis. Sample collection and submission were done in accordance with standard chain-of-custody procedures.
- Monitoring wells were installed in all boreholes advanced. Each monitoring well was constructed with a 3.5- or a 5-centimetre diameter, flush threaded, Schedule 40 PVC pipe and slotted well screen. Each monitoring well screen was placed so as to intercept the water table surface. From the top of the screen to the ground surface, the annulus of each borehole was backfilled with bentonite clay. Each well was completed with a stick-up casing.
- After an appropriate period following installation and development of the monitoring wells (to allow the groundwater to equilibrate) the depth to static water level was measured in each well using a Slope Indicator water level tape. Following the water table depth measurement, each well was purged and sampled using a low flow sampling method. Groundwater samples were collected from each well and sealed in laboratory-prepared bottles. Groundwater samples were

collected from the six new monitoring wells installed and from two existing monitoring wells on the subject property. Sample collection and submission was done in accordance with standard chain-of-custody procedures.

- An elevation survey was completed to determine the top of pipe elevation at each of the six new monitoring wells and at the two historical monitoring wells. The survey information, combined with the water table depth measurements, was used to estimate groundwater flow direction.

2. FIELD INVESTIGATION METHODOLOGY

The field investigation activities for this Phase II ESA were conducted by Ms. Natalia Baranova, Ms. Kamin Paul, and Mr. Garnet Peters of XCG as follows:

- Borehole drilling and monitoring well installation – June 25 and 26, 2019;
- Monitoring well development – June 28, July 2 and 9 2019;
- Groundwater sampling – July 12 and 15, and August 2, 2019;
- Test pit investigation – July 15 and 16, 2019;
- Elevation survey – August 26, 2019;
- Groundwater resampling – November 25, 2019.

The Phase II ESA work was conducted under the supervision of Ms. Natalia Baranova and Mr. Kevin Shipley. The qualifications of the XCG personnel who worked on this project are described in Appendix A.

All field activities were conducted using XCG's standard field protocols. This section outlines the methodology used for the environmental investigation. It includes a summary of the sampling and analytical program and an outline of the quality assurance and quality control (QA/QC) program.

2.1 Summary of Sampling and Analytical Program

The specific locations investigated, rationale, and analyses performed on soil and groundwater samples collected during the environmental investigation activities are summarized in Table 1 below. Test pit and monitoring well locations are illustrated on Figure 1 at the end of text.

Table 1 - Sampling Program - Phase II ESA

Sample ID	Location	Rationale	Analytical
Existing Investigation Locations (Note: MW04-1, MW04-2 MW04-3, and MW04-4 assumed to be destroyed)			
MW04-5	West Yard	To confirm groundwater quality at the subject site. No historical exceedances of BTEX, PHCs, or metals were identified at this well.	- VOCs, EC, and chloride
MW04-6	Along the west property boundary.	To confirm groundwater quality at the subject site. No historical exceedances of BTEX or metals were identified at this well; however, a historical exceedance of PHC (F3) was identified in 2004.	- PHCs and metals
New Investigation Locations			

Sample ID	Location	Rationale	Analytical
MW19-1	In the northwest corner of the property, west of the asphalt pad.	Required to investigate potential impacts to soil and groundwater from snow storage.	**Soil:** - PHCs, metals, chloride, EC, and SAR **Groundwater:** - PHCs, metals, chloride, EC, and VOCs
MW19-2	Along the west property boundary in the location of the historical well MW04-6.	MW19-2 is a replacement monitoring well for MW04-6. It is required to investigate historical exceedances if lead in soil (1.8-2.4 mbgs) and exceedances of lead and PHC (F3) in groundwater.	**Soil:** - PHCs, metals, and VOCs **Groundwater:** - Monitoring well dry, not sampled
MW19-3	North of the building in the location of the historical borehole BH04-2.	Required to investigate soil and groundwater quality in the location of the historical borehole BH04-2 where exceedances of xylenes were identified in soil (0-0.76 mbgs).	**Soil:** - PHCs, metals, EC, chloride, SAR, pH, PAHs, and VOCs **Groundwater:** - PHCs, metals, chloride, and VOCs
MW19-4	In the southwest corner on the Extra Parcel, in the location of the historical borehole BH04-10, north of MW04-5	Required to investigate soil and groundwater quality in the location of the historical borehole BH04-10 where exceedances of PHC (F1) were identified in soil (0-0.76 mbgs).	**Soil:** - PHCs, metals, EC, chloride, SAR, pH, PAHs, and VOCs **Groundwater:** - PHCs, metals, chloride, and VOCs
MW19-5	In the western portion of the site, south of MW19-1 and northeast of MW19-2	Required to investigate potential impacts to soil and groundwater from snow storage.	**Soil:** - PHCs, metals, chloride, EC, and SAR **Groundwater:** - Monitoring well dry, not sampled
MW19-6	South of the building, east of MW19-5.	Required to investigate potential impacts to soil and groundwater from snow storage.	**Soil:** - PHCs, metals, chloride, EC, and SAR **Groundwater:** - PHCs, metals, chloride, and EC
Test Pits			
TP19-1	In the northwest corner of the property, in the area of historical TP04-3.	Required to investigate soil quality in the area of TP04-3 where historical exceedances of lead were identified in soil (2.8 mbgs). Additionally, required to investigate soil quality near the snow storage area.	**Soil:** - Metals, pH, EC, SAR, and/or PAHs
TP19-2	North of the building, adjacent to MW19-3.	Required to delineate potential historical xylene impacts in soil.	**Soil:** - PHCs and VOCs

Sample ID	Location	Rationale	Analytical
TP19-3 to TP19-5	North of the building, adjacent to MW19-3.	These sampling locations were removed from the work plan as no exceedances were identified in MW19-3 and TP19-2 soil samples.	**Soil:** - Test pits not completed, no samples collected
TP19-6 & TP19-7	West of the building along the south and southwest walls of the historical AEC3 excavation.	Required to investigate soil quality and delineate impacts where historical exceedances of mercury were identified in the wall samples of the AEC 3 excavation (excavation advanced to 0.5-2.5 mbgs).	**Soil:** - Metals, EC, SAR, pH, and/or PAHs
TP19-8	In the western portion of the property along the northwest corner of the historical AEC2 excavation.	Required to investigate soil quality and delineate impacts where historical exceedances of lead were identified in the wall samples of the AEC 2 excavation (excavation advanced to 1.4 mbgs).	**Soil:** - Metals, EC, SAR, pH, and/or PAHs
TP19-9	In the western portion of the property in the historical location TP04-22.	Required to investigate soil quality and delineate impacts where historical exceedances of lead and zinc were identified in TP04-22 (0.04-1.3 mbgs).	**Soil:** - Metals, EC, SAR, pH, and/or PAHs
TP19-10 to TP19-12	South of the building in the location of the historical AEC1 excavation -TP19-10: along the east wall -TP19-11: floor in the southern portion of AEC1 excavation -TP19-12: along the west wall	Required to investigate soil quality and delineate impacts where historical exceedances of in the wall and floor samples of the AEC 1 excavation (barium along the east wall and floor, lead along the west wall). Excavation was advanced to 0.91-1.07 mbgs.	**Soil:** - Metals, EC, SAR, pH, and/or PAHs
TP19-13 to TP19-16	In the southwest portion of the site, on the Extra Parcel; surrounding MW19-4 at ~8-10 m distance to the north, east, west, and south.	These sampling locations were removed from the work plan as no exceedances were identified in MW19-4.	**Soil:** - Test pits not completed, no samples collected
TP19-17 to TP19-19	Along the western property boundary; surrounding MW19-2 at 10 m distance to the north, east, and south.	Required to delineate historical lead soil impacts identified in MW04-6 (1.8-2.4 mbgs).	**Soil:** - Metals

Notes:

VOCs	Volatile organic compounds
PHCs F1 - F4	Petroleum hydrocarbon fractions F1 to F4
PAHs	Polycyclic aromatic hydrocarbons
EC	Electrical Conductivity
SAR	Sodium Absorption Ratio

2.2 Test Pit Investigation

The test pit investigation was completed on July 15 and 16, 2019, by a private excavation company, using a mini excavator, and the work was supervised by Mr. Peters of XCG. A total of 12 test pits were completed in order to investigate various areas of concern that had been identified in the Phase I ESA completed by XCG. The test pit locations are shown on Figure 1 at the end of text.

The test pits were excavated to a maximum depth of 2.90 metres bgs. Details of the soil conditions encountered, including visual and olfactory observations, were recorded during the test pit excavation and are summarized on the test pit and borehole logs included in Appendix B.

Soil samples were collected by XCG from each test pit. Select samples were submitted to Caduceon Laboratories Ltd. (Caduceon) in Kingston, Ontario, for analyses of PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs.

2.3 Monitoring Well Installation

The borehole drilling and monitoring well installation was completed between June 25 and 26, 2019, under XCG's direction, by G.E.T. Drilling Ltd of Napanee, Ontario. The boreholes were drilled using a CME 55 Solid stem auger. During drilling, soil samples were collected using a split spoon sampler. Select soil samples were submitted for analyses of one or more of the following: PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs. The borehole/monitoring well locations are shown on Figure 1 at the end of text.

A total of six boreholes were advanced to depths ranging between 4.57 and 7.92 metres bgs with monitoring wells installed in all of them. Groundwater was encountered at depths ranging from 4.12 to 8.58 metres below top of pipe (m btop). The top of bedrock was encountered at depths ranging between 1.12 to 3.58 metres bgs.

Monitoring well MW19-2 was installed in poor quality bedrock that was suspected to be non-water bearing; therefore, a groundwater sample could not be collected from this location. Historical well MW04-6 was used as a replacement for the groundwater sample parameters due to its proximity to monitoring well MW19-2. Additionally, monitoring well MW19-5 appeared to be water bearing during drilling; however, it was found to be dry during subsequent sampling events. All other monitoring wells were installed such that the screened interval straddles the observed water table. Monitoring well MW19-2 was equipped with a 5.08 cm (2-inch) diameter screen and riser. All other monitoring wells were equipped with a 3.8 cm (1.5-inch) diameter screen and riser. The well installation details are included on the borehole logs in Appendix B.

2.4 Monitoring Well Development

The monitoring wells were developed by removing ten well volumes or by purging the well dry and allowing it to fully recover a minimum of three times. The wells were developed using Waterra inertial pumps (with foot valves). With the exception of monitoring wells MW19-1 and MW19-3, the monitoring wells exhibited a slow recovery time. No sheen or odour were detected during well development or sampling.

2.5 Groundwater Sampling

Groundwater sampling was conducted on July 12, August 2, and November 25, 2019. The depth to static water level (SWL) was measured using an oil/water interface meter prior to and during monitoring well sampling. The oil/water interface meter was also used to check for the presence of a separate phase free product layer (if any) in all of the monitoring wells. The groundwater samples were collected using the low-flow sampling method. The samples were collected using dedicated tubing, and collecting samples directly into laboratory prepared bottles. The samples were submitted to Caduceon for analyses of one or more of the following: PHCs (F1-F4), metals, EC, chloride, and VOCs.

2.6 Quality Assurance and Quality Control

As part of XCG's field program, standard sample handling protocols were followed, including the use of dedicated sampling equipment, gloves, sample preservation, and proper laboratory submission procedures.

All samples were submitted for analysis to Caduceon, which follows strict QA/QC measures. Caduceon's in-house QA/QC measures include ongoing instrument calibration to recognised standards, replicate analysis, method spikes, method blanks, sample duplicates, and standard reference materials. All samples met the minimum requirements for QA/QC at Caduceon.

3. FIELD OBSERVATIONS

3.1 Soil Quality

Observations of the soil quality made during the test pit and borehole advancement are summarized in the test pit and borehole logs included in Appendix B.

Based on the soil quality observations made during the test pit and borehole advancement, the overburden at the subject site consists of topsoil, underlain by dark brown silt and clay, which is underlain by silty clay to bedrock. Bedrock was encountered at depths ranging from 1.1 to 3.6 metres bgs. Some brick and coal debris was encountered in all monitoring wells in the fill material. No odour or staining was observed in the overburden material.

3.2 Groundwater Quality

During the monitoring well purging prior to sampling, the groundwater in most of the wells was observed to initially have high sediment content, with the exception of monitoring wells MW19-4 and MW19-6. The turbidity was cleared through the purging.

During the development of the wells prior to sampling, the groundwater was not observed to be high in sediment. Sampling of monitoring well MW19-4 for PHCs resulted in some sediment content in the water; this is suspected to have been a result of stirred up water and sediment from the bottom of the well. This well was resampled on August 2, 2019, and again on November 25, 2019, to obtain more accurate results.

3.3 Groundwater Elevations and Flow Direction

An elevation survey of all newly installed monitoring wells, and one historical monitoring well on the subject site was completed on August 26, 2019. Monitoring well MW04-6 could not be found during the survey because it was buried during the test pitting activities.

Based on the elevation survey and water levels measured on July 12, 2019, the groundwater flows generally towards the southwest across the site. Figure 2 shows water table elevation contours and groundwater flow directions.

4. ANALYTICAL RESULTS

4.1 Discussion of Applicable Guidelines

The "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act," dated April 15, 2011, by the MOE was consulted in the assessment of soil and groundwater quality on the subject property. Table 3 Full Depth Generic Site Conditions Standards in a Non-Potable Ground Water Condition, and Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition, for residential/parkland/institutional land use, were used to evaluate soil and groundwater quality.

The site is disconnected from all utility services, aside from power being drawn from across the street to power the fire alarms and exterior security lighting. The nearest body of water, the Cataraqui River, is less than 1 kilometre from the site.

Some areas of the site have an overburden depth of less than 2 metres, while others have an overburden thickness greater than 2 metres. Both the Table 3 and Table 7 standards were applied to account for the possibility of different standards being applied to different parts of the site.

The analytical results were compared to the Table 3 and 7 standards for coarse textured soil, based on observations of the presence of sandy based soils (i.e. with debris and sand).

4.2 Analytical Results for Soil

The analytical results for PHC (F1-F4) (Table 4), metals and inorganics (Table 5), PAHs (Table 6), and VOCs (Table 7) in soil are presented at the end of text. Laboratory Certificates of analyses are included in Appendix C. Figures 3, 3A, 3B, and 3C summarize the soil exceedances observed at the sampling locations for this investigation.

4.3 Analytical Results for Groundwater

The analytical results for PHC (F1-F4) (Table 8), metals and inorganics (Table 9), and VOCs (Table 10) in groundwater are presented at the end of text. Laboratory Certificates of analyses are included in Appendix C. Figure 4 summarizes the groundwater exceedances observed at the sampling locations for this investigation.

4.4 Discussion of Analytical Results

As previously mentioned in Section 4.1, the soil and groundwater results were compared to the MOE Table 3 and Table 7 standards. Several historical reports have been submitted by Jacques Whitford in 2004, 2005, and 2008. A full summary of these reports can be found in the document titled "Peer Review of Environmental Reports for the Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," prepared by XCG and dated March 2, 2018. Historical sampling locations can be found in Figure 1 at the end of text.

Below is a summary of all the analytical results for soil sampling conducted in 2004 and 2019, with comparison of the results against the most recent MOE Table 3 and Table 7 standards. An overview of the analytical results in soil is depicted in Figures 3, 3A, 3B, and 3C, and analytical results in groundwater are depicted in Figure 4.

PHCs

Soil exceedances for PHCs (F1 – F4) were identified at BH04-10 in 2004. In 2004, several additional samples surrounding BH04-10 were also sampled for PHCs and were below the applicable MOE Table 3 and 7 standards. In 2019, the nearest sampling location to this former sampling location was monitoring well MW19-4, and the soil sample was below the applicable MOE Table 3 or Table 7 standards. No other soil exceedances for PHCs were observed during sampling conducted in 2004 and 2019.

Groundwater exceedances for PHCs (F1-F4) were observed in monitoring well MW04-6 during the 2004 sampling round. Subsequent sampling of this well in 2019 on two separate occasions showed no PHC exceedances.

As previously mentioned in section 3.2, the groundwater observed during well development of monitoring well MW19-4 was clear. The initial sample collected from monitoring well MW19-4 (after development) was brown and murky. This sample exceeded the MOE Table 3 and 7 guidelines for PHC (F3) (C34-50). Another sample was collected from monitoring well MW19-4 and submitted on August 2, 2019. This sample was clear and free from obvious sediment. The second sample met MOE Table 3 and 7 Standards. An additional sample was collected from monitoring well MW19-4 on November 25, 2019, and the analytical results were below the applicable MOE Table 3 and 7 standards. The exceedance observed during initial sampling of monitoring well MW19-4 is likely due to the sediment observed within the sample water. No remedial action is required with respect to groundwater quality on the Phase II ESA Property.

Metals and Inorganics

Soil exceedances of metals were identified at BH04-3, MW04-4, MW04-5, MW04-6, TP04-3, TP04-9, TP04-22, AEC1 F1, AEC1 EW SA4, AEC1 EW SA8, AEC2 WW SA1, AEC2 NW SA2, AEC3 WW SA1, AEC3 WW SA2, and AEC3 SW SA6 for one or more of the following: conductivity, barium, cobalt, lead, mercury, and zinc. The 2019 sampling results revealed that metals and inorganics contamination in soil is still present for one or more of conductivity, barium, lead, and mercury at sampling locations MW19-1, MW19-2, MW19-6, TP19-1 (North), TP19-11 (North/East), and TP19-18. A zinc exceedance was observed in TP04-22 during the 2004 sampling round. The nearest sampling location to TP04-22 is TP19-9, which showed no exceedances for zinc in 2019.

Based on XCG's experience with soil quality investigations at other sites in the Kingston area, it is common to find elevated barium concentrations associated with clay and clay-containing soils in this geographic region. As shown on the TP19-11 test pit log, the soil in the depth interval where the barium exceedance was identified was described as "silty sand." For the following reasons, it is the Qualified Person's (QP's) opinion that elevated barium concentrations are naturally-occurring at the Phase II

ESA Property, and that the barium exceedance found arises from these naturally-occurring conditions:

- The MOE Table 1 full depth background standard for barium, for residential / parkland / institutional / industrial / commercial / community property use, is 220 µg/g. According to MOE Rationale Document (April 15, 2011), Table 8.2 (page 385), the distribution of background barium concentrations measured in old urban parks across Ontario led to the derivation of an OTR_{98} (98^{th} percentile of the data distribution) for barium of 180 µg/g, with the lower confidence limit of the OTR_{98} being 150 µg/g and the upper confidence limit being 300 µg/g. This means that it is very unlikely, in most geographic regions in Ontario, for naturally-occurring barium concentrations to exceed 300 µg/g. However, on the Phase II ESA Property, numerous barium concentrations were measured across the site and several exceeded 300 µg/g. These elevated barium concentrations were located along the northwestern property line and south east of the main building and were all in soil described as containing primarily silty sand. There was no isolated area on the site that had unusually high concentrations of barium. Therefore, the evidence indicates that the elevated barium is associated with the silty sand, and not with any activity that took place on a particular area of the Phase II ESA Property.
- The Phase I ESA did not identify any potential anthropogenic source of barium. The activities that led to the determination of the areas of concern on the site are detailed in Section 1.2.3 above. None of the activities listed would be expected to have given rise to the release of barium across the site, to the extent that barium concentrations above 300 µg/g would be present over a wide area as described above.
- According to Guillet (1963) many occurrences of barite, a barium-rich mineral, have been reported in southeastern Ontario, principally in the Counties of Frontenac and Lanark. Many of these sources were described as vein deposits. Vein deposits are normally enclosed in solid rock; however, upon weathering they can form bodies of residual, or soil, deposits (I.L. Komov, 1994). Naturally barium-rich soils can be found in various places in North America. Brobst (1955) provides a list of residual barite deposits across the United States. Based on these references, the widespread presence of barite in the County of Frontenac, where Kingston is located, has led to the occurrence of barium-rich clays throughout this region.
- Appendix D contains recent email correspondence from Frank Crossley, a senior hydrogeologist with the MECP Kingston office, confirming that barium in soils is naturally elevated in the Kingston area. Mr. Crossley states in his email that barium concentrations in the Kingston area typically range naturally up to 550 µg/g, which is slightly less than the highest concentration found on the Phase II ESA Property.

In light of the above, the barium exceedances at the Phase II ESA Property are not considered to be indicative of a zone of contamination, but rather are considered to be

naturally occurring. Therefore, no remedial action to address the elevated barium concentrations is required.

No exceedances of metals in groundwater were observed in the 2004 or 2019 sampling rounds.

PAHs

The 2004 sampling round had some elevated MDLs in a composite sample of BH04-13 and BH04-14. None of the other samples collected in the 2004 and the 2019 sampling rounds exceeded MOE Table 3 or 7 standards.

PAH analysis in groundwater was not conducted in the 2004 or 2019 sampling rounds.

VOCs

No exceedances of VOCs were identified in soil or groundwater in the 2004 or 2019 sampling rounds.

The samples were submitted for analysis to Caduceon which follows strict QA/QC measures. All samples met the minimum requirements for QA/QC at Caduceon as supported by a Quality Assurance report included in Appendix C.

Based on comparison of the field duplicate results, the analytical results reported are considered representative of the conditions of the subject site and no data qualifications were made that would affect decision making. The overall objectives of the Phase II ESA were met.

5. LIMITATIONS AND CONCLUSIONS

5.1 Limitations

This Phase II ESA focussed on identifying actual contamination on the subject property located at 40 Sir John A. MacDonald Boulevard in Kingston, Ontario. It was not intended to be a detailed audit of all past or current operations. This is not a compliance audit.

Based upon findings of the Phase I ESA completed by XCG, sampling locations were selected to perform the Phase II ESA subsurface investigations. Conditions between and beyond the selected sampling locations may differ from those observed in the samples collected during this Phase II ESA. XCG cannot be held responsible for environmental conditions at the site that were not apparent from the available information.

This Phase II ESA does not meet the requirements for a Phase Two ESA as specified in Ontario Regulation (O. Reg.) 153/04, as amended. Therefore, this Phase II ESA would not be suitable for use in support of the filing of a RSC for the subject property.

The scope of this report is limited to the matters expressly covered. This report was prepared for the sole benefit of Siderius Developments Ltd. and may not be relied upon by any other person or entity. Any use or reuse of this document (or the findings, conclusions, or recommendations represented herein) by parties other than Siderius Developments Ltd. is at the sole risk of those parties.

5.2 Conclusions

The key findings of the Phase II ESA conducted at 40 Sir John A. MacDonald Boulevard in Kingston, Ontario, are summarized below:

- 12 test pits were completed on July 15 and 16, 2019. Soil samples from the test pits were submitted for analyses of the following: PHCs (F1 to F4), metals, pH, EC, SAR, PAHs, and/or VOCs.
- Six boreholes were advanced on the subject property with monitoring wells installed in all of them between June 25 and 26, 2019. Select soil samples were submitted for analyses of one or more of the following: PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs. Monitoring wells were installed to depths ranging between 4.57 and 7.92 metres bgs.
- Groundwater samples were collected from four of the newly installed monitoring wells on July 12 and 15, 2019, with supplemental sampling conducted on August 2, November 25, and December 11, 2019. The groundwater samples were submitted for analyses of one or more of the following: PHCs, metals, pH, EC, SAR, PAHs, and/or VOCs.
- The "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act," dated April 15, 2011, by the MOE was consulted in the assessment of soil and groundwater quality on the subject property. Table 3 Full Depth Generic Site Conditions Standards in a Non-Potable Ground Water

Condition, and Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition, for residential/parkland/institutional land use, were used to evaluate soil and groundwater quality.

- In the 2019 investigations, relatively minor exceedances in soil of the MOE Table 3 and Table 7 standards were observed in six sampling locations for one or more of the following parameters: EC and metals (barium, lead, and mercury). Historical exceedances, found in soil in investigations prior to 2019, of PHCs, PAHs, VOCs, and metals were not found in during the 2019 field investigations. The barium exceedances at the Phase II ESA Property are not considered to be indicative of a zone of contamination, but rather are considered to be naturally occurring. Therefore, no remedial action to address the elevated barium concentration is required.
- In the 2019 investigations, relatively minor exceedances in groundwater of the MOE Table 3 or Table 7 standards were observed in one monitoring well, MW19-4, for PHCs (F3); however, subsequent sampling of this monitoring well showed no exceedances during two follow-up sampling events. Therefore, the exceedance observed during initial sampling of monitoring well MW19-4 is likely due to the sediment observed within the sample water. No remedial action is required with respect to groundwater quality on the Phase II ESA Property.
- Based on the contaminants observed and the groundwater flow direction, there is no indication that contamination is migrating off the property or causing an off-property impact.

The overall conclusion of this Phase II ESA of the subject property located at 40 Sir John A. MacDonald Boulevard, Kingston, Ontario, is that the findings of XCG's investigations indicate the presence of relatively minor soil contamination in various areas investigated. Based on the analytical results and the direction of groundwater flow, there is there is no indication that contamination is migrating off the property or causing an off-property impact.

6. REFERENCES

1. Ministry of Environment, "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act," April 15, 2011;
2. Ontario Ministry of the Environment, "Guide for Completing Phase Two ESAs under O. Reg. 153/04," dated June 2011;
3. Ontario Ministry of the Environment, "Protocol for Analysis Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act," dated March 2004 (amended as of July 1, 2011);
4. XCG Consulting Limited, "Phase I Environmental Site Assessment, 40 Sir John A. MacDonald Boulevard, Kingston, Ontario," January 22, 2018 (draft report);
5. Jacques Whitford, 2004, "Phase I Environmental Site Assessment Report, Kingston Prison For Women – Extra Parcel, 40 Sir John A. MacDonald, Kingston, Ontario K7M 1A1," dated March 8, 2004, prepared for Canada Lands Company CLC Limited. (Referred to in this letter as "Extra Parcel Phase I ESA Report");
6. Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited. (Referred to in this letter as "Limited Phase II ESA Report");
7. Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004. (Referred to in this letter as "Supplemental Phase II ESA Report");
8. Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston prison for Women," dated January 13, 2005. (Referred to in this letter as "Phase III ESA Report"); and
9. Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited. (Referred to in this letter as the "Remediation Report").

TABLES

Table 2 Summary of Monitoring Well Construction Details

Monitoring Well ID	Installation Date	Depth to Bedrock (mbgs)	Depth to Bottom of Well (mbgs)	Depth to Water (mbtop) July 12, 2019	Sand Pack Interval (mbgs)	Screen Interval (mbgs)	Bentonite Interval (mbgs)	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)
XCG Well Installation 2019									
MW19-1	25-Jun-2019	-	7.47	6.88	3.96 - 7.47	4.42 - 7.47	0 - 3.96	98.54	99.45
MW19-2	25-Jun-2019	3.05	7.82	-	4.42 - 7.82	4.78 - 7.82	0 - 4.42	98.45	99.41
MW19-3	25-Jun-2019	-	4.57	4.12	2.29 - 4.57	2.44 - 4.57	0 - 2.29	99.26	100.19
MW19-4	25-Jun-2019	1.12	7.92	8.58	4.57 - 7.92	4.88 - 7.92	0 - 4.57	100.22	101.18
MW19-5	25-Jun-2019	2.87	6.32	6.94	3.20 - 6.32	3.28 - 6.32	0 - 3.20	98.6	99.51
MW19-6	26-Jun-2019	3.58	5.18	5.99	1.83 - 5.18	2.13 - 5.18	0 - 1.83	99.02	99.87
Jacques Whitford Well installation 2004									
MW04-1	9-Aug-2004	2.30	4.22	-	0.3 - 2.00, 2.50 - 4.22	2.80 - 4.22	0 - 0.3, 2.00 - 2.50	99.96	99.86
MW04-2	No record found								
MW04-3	9-Aug-2004	2.90	4.93	-	0.3 - 2.60 - 3.20 - 4.93	3.50 - 4.93	0 - 0.3, 2.60 - 3.20	99.86	99.76
MW04-4	9-Aug-2004	1.80	5.18	-	0.3 - 1.5, 2.00 - 5.18	2.20 - 5.18	0.1 - 0.3, 1.50 - 2.00	101.82	101.74
MW04-5	9-Aug-2004	0.70	7.84	7.46	0.3 - 1.00, 1.60 - 7.84	1.90 - 7.84	0.2 - 0.3, 1.00 - 1.60	99.63	99.53
MW04-6	9-Aug-2004	3.10	6.35	6.06	0.3 - 2.60, 3.30 - 6.35	3.50 - 6.35	0.2 - 0.3, 2.60 - 3.30	98.47	98.38

Table 3 Summary of Groundwater Elevations

Monitoring Well ID	Ground Surface Elevation (masd)	Top of Pipe Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)	Groundwater Depth (mbtop)	Groundwater Elevation (masd)
			19-Jun-19		28-Jun-19		9-Jul-19		12-Jul-19		2-Aug-19		25-Nov-19	
MW19-1	98.54	99.45	-	-	6.71	92.74	6.82	92.63	6.88	92.570	5.16	94.290	-	-
MW19-2	98.45	99.41	-	-	Dry	Dry	Dry	Dry	-	-	-	-	Dry	Dry
MW19-3	99.26	100.19	-	-	3.295	96.895	4.03	96.16	4.12	96.070	-	-	-	-
MW19-4	100.22	101.18	-	-	8.11	93.07	8.13	93.05	8.58	92.600	8.66	92.520	6.37	94.810
MW19-5	98.6	99.51	-	-	Dry	Dry	Dry	Dry	Dry	Dry	-	-	Dry	Dry
MW19-6	99.02	99.87	-	-	5.335	94.535	5.9	93.97	5.99	93.880	-	-	-	-
MW04-1	Not Found													
MW04-2	Not Found													
MW04-3	Not Found													
MW04-4	Not Found													
MW04-5	99.63	99.53	5.24	94.29	5.24	94.29	6.75	92.78	7.46	92.070	Dry	Dry	-	-
MW04-6	98.47	98.38	5.815	92.565	5.815	92.565	5.84	92.54	6.06	92.320	-	-	5.78	92.600

Note:
All elevations are relative to an on-site assumed datum.
mbtop Metres below top of pipe
masd Metres above site datum

Table 4 Summary of Analytical Results for BTEX and PHCs in Soil

Sample ID		O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	BH04-1 SS-3	BH04-2		RPD	BH04-3 SS-3	BH04-4 SS-2	BH04-5 GS-1	BH04-8 GS-1	BH04-10 GS-1	MW04-1 SS-4	MW04-3 SS-5	MW04-4 SS-3	MW04-5 SS-1	MW04-6 SS-4	TP04-1 GS-3
Location					BH04-1 SS-3	BH04-2 GS-1	DUP #1 (BH04-2)		BH04-3 SS-3	BH04-4 SS-2	BH04-5 GS-1	BH04-8 GS-1	BH04-10 GS-1	MW04-1 SS-4	MW04-3 SS-5	MW04-4 SS-3	MW04-5 SS-1	MW04-6 SS-4	TP04-1 GS-3
Laboratory					Paracel	Paracel	Paracel		Paracel	Paracel	Paracel	Paracel	Paracel	PSC	PSC	PSC	PSC	PSC	PSC
Laboratory ID					-	-	-		-	-	-	-	-	-	-	-	-	-	-
Depth of Sample (m bgs)					1.52 - 2.13	0 - 0.76	0 - 0.76		1.52 - 2.13	0.76 - 1.37	0 - 0.76	0 - 0.76	0 - 0.76	1.8 - 2.2	2.6 - 2.9	1.4 - 1.8	0 - 0.6	1.8 - 2.4	3.0
Sample Date					5-Feb-04	5-Feb-04	5-Feb-04		5-Feb-04	5-Feb-04	5-Feb-04	5-Feb-04	5-Feb-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04
Date of F1 Analysis					-	-	-		-	-	-	-	-	-	-	-	-	-	-
Date of BTEX Analysis		(µg/g)	(µg/g)	(µg/g)	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Date of F2/F3/F4 Analysis					-	-	-		-	-	-	-	-	-	-	-	-	-	-
Date of F4G Analysis					-	-	-		-	-	-	-	-	-	-	-	-	-	-
Analytical Report Reference					-	-	-		-	-	-	-	-	G244792	G244792	G244793	G244794	G244795	G244796
Benzene		0.21	0.21	0.02	< 0.002	< 0.05	< 0.002	NC	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	< 0.002
Toluene		2.3	2.3	0.2	< 0.002	< 0.1	0.002	NC	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	<0.002	0.002	<0.002	<0.002	< 0.002
Ethylbenzene		2	2	0.05	< 0.002	0.45	0.006	195%	< 0.002	< 0.002	0.004	< 0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes, total		3.1	3.1	0.03	< 0.002	**10.6**	0.008	200%	< 0.002	< 0.002	0.022	< 0.002	< 0.002	<0.004	<0.004	<0.004	<0.004	<0.004	< 0.002
TPH - gasoline/diesel (C5-C24)	F1 PHCs (C6-C10)	55	55	10	20	40	20	NC	20	20	30	<10	**80**	<10	<10	<10	<10	<10	<10
	F2 PHCs (C10-C16)	98	98	5										<10.0	21.6	16.8	15.8	<10.0	<10.0
	F3 PHCs (C16-C34)	300	300	10										<10.0	42.5	132	83.9	24.9	<10.0
TPH - heavy oils (C24-C50)	F4 PHCs (C34-C50)	2800	2800	10	50	<50	50	NC	50	150	150	<50	**1700**	<10.0	11.0	481	53.4	16.2	<10.0
	F4 PHC Gravimetric				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 4 Summary of Analytical Results for BTEX and PHCs in Soil

Sample ID		O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP04-2 GS-3	TP04-3 GS-4	TP04-4 GS-3	TP04-5 GS-3	TP04-6 GS-1	TP04-9 GS-1	TP04-10 GS-1	Fill Composite #1 (BH04-13 & BH04-14)	Fill Composite #2 (BH04-15 & BH04-16)	Fill Composite #3 (BH04-17 & BH04-18)	TP04-15 Composite	TP04-16 Composite	TP04-17 Composite
Location					TP04-2 GS-3	TP04-3 GS-4	TP04-4 GS-3	TP04-5 GS-3	TP04-6 GS-1	TP04-9 GS-1	TP04-10 GS-1	BH04-13 & BH04-14	BH04-15 & BH04-16	BH04-17 & BH04-18	TP04-15 Composite	TP04-16 Composite	TP04-17 Composite
Laboratory					PSC	PSC	PSC	PSC	PSC	PSC	PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC
Laboratory ID					-	-	-	-	-	-	-	-	-	-	-	-	-
Depth of Sample (m bgs)					3.4	2.8	2.2	2.4	1.0	0.75	1.0	-	-	-	0.04 - 1	0.04 - 1	0.04 - 1
Sample Date					9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	5-Nov-04	5-Nov-04	5-Nov-04	26-Nov-04	26-Nov-04	26-Nov-04
Date of F1 Analysis					-	-	-	-	-	-	-	-	-	-	-	-	-
Date of BTEX Analysis		(µg/g)	(µg/g)	(µg/g)	-	-	-	-	-	-	-	-	-	-	-	-	-
Date of F2/F3/F4 Analysis					-	-	-	-	-	-	-	-	-	-	-	-	-
Date of F4G Analysis					-	-	-	-	-	-	-	-	-	-	-	-	-
Analytical Report Reference					G244797	G244798	G244799	G244800	G244801	G244803	G244804	-	-	-	-	-	-
Benzene		0.21	0.21	0.02	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	-	-	-	-	-	-
Toluene		2.3	2.3	0.2	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	-	-	-	-	-	-
Ethylbenzene		2	2	0.05	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	< 0.002	< 0.002	-	-	-	-	-	-
Xylenes, total		3.1	3.1	0.03	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	-	-	-	-	-	-
TPH - gasoline/diesel (C5-C24)	F1 PHCs (C6-C10)	55	55	10	<10	<10	<10	<10	<10	<10	<10	-	-	-	-	-	-
	F2 PHCs (C10-C16)	98	98	5	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	< 10	< 10	< 10	< 10	< 10	< 10
TPH - heavy oils (C24-C50)	F3 PHCs (C16-C34)	300	300	10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	232	< 10	< 10	< 10	< 10	< 10
	F4 PHCs (C34-C50)	2800	2800	10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	726	< 10	< 10	< 10	< 10	< 10
	F4 PHC Gravimetric				-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
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<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
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MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 4 Summary of Analytical Results for BTEX and PHCs in Soil

Sample ID		O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP04-18 Composite	BH04-19 Composite "D"	MW19-1	MW19-2		MW19-3			MW19-4
Location					TP04-18 Composite	BH04-19 Composite	MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-2 7'3"-10'	MW19-3 9"-3'4"	MW19-3 6'6"-8'	MW19-3 20'-21'	MW19-4 2'-3'8"
Laboratory					Paracel & PSC	Paracel & PSC	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID					-	-	B19-18946-1	B19-18946-2	B19-20317-2	B19-18946-3	B19-20317-3	B19-18946-4	B19-18946-5
Depth of Sample (m bgs)					0.04 - 1	0.04 - 0.76	0.46 - 0.61	1.22 - 2.06	2.21 - 3.05	0.23 - 1.02	1.98 - 2.44	6.1 - 6.40	0.61 - 1.12
Sample Date					26-Nov-04	13-Dec-04	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Date of F1 Analysis					-	-	27-Jun-19	27-Jun-19	10-Jul-19	27-Jun-19	-	27-Jun-19	27-Jun-19
Date of BTEX Analysis		(µg/g)	(µg/g)	(µg/g)	-	-	27-Jun-19	27-Jun-19	-	27-Jun-19	10-Jul-19	-	27-Jun-19
Date of F2/F3/F4 Analysis					-	-	27-Jun-19	27-Jun-19	11-Jul-19	27-Jun-19	-	27-Jun-19	27-Jun-19
Date of F4G Analysis					-	-	27-Jun-19	27-Jun-19	11-Jul-19	27-Jun-19	-	27-Jun-19	27-Jun-19
Analytical Report Reference					-	-	B19-18946	B19-18946	B19-20317	B19-18946	B19-20317	B19-18946	B19-18946
Benzene		0.21	0.21	0.02	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Toluene		2.3	2.3	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Ethylbenzene		2	2	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05
Xylenes, total		3.1	3.1	0.03	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
TPH - gasoline/diesel (C5-C24)	F1 PHCs (C6-C10)	55	55	10	-	-	< 10	< 10	< 10	< 10	-	< 10	< 10
	F2 PHCs (C10-C16)	98	98	5	< 10	< 10	< 6	< 5	< 6	< 5	-	< 5	< 5
TPH - heavy oils (C24-C50)	F3 PHCs (C16-C34)	300	300	10	< 10	< 10	< 10	14	11	< 10	-	< 10	< 10
	F4 PHCs (C34-C50)	2800	2800	10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 10	< 10
	F4 PHC Gravimetric				-	-	-	-	-	-	-	-	-

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 4 Summary of Analytical Results for BTEX and PHCs in Soil

Sample ID		O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	MW19-5	MW19-6	TP19-2	
Location					MW19-5 9"-3'4"	MW19-6 0'-1'6"	TP19-2 (0.8)	Soil Duplicate
Laboratory					Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID					B19-19072-1	B19-19072-2	B19-21395-4	B19-21395-4
Depth of Sample (m bgs)					0.229 - 1.02	0 - 0.457	0.8	0.8
Sample Date					26-Jun-19	26-Jun-19	15-Jul-19	15-Jul-19
Date of F1 Analysis					28-Jun-19	28-Jun-19	17-Jul-19	17-Jul-19
Date of BTEX Analysis		(µg/g)	(µg/g)	(µg/g)	-	-	17-Jul-19	17-Jul-19
Date of F2/F3/F4 Analysis					27-Jun-19	27-Jun-19	18-Jul-19	18-Jul-19
Date of F4G Analysis					02-Jul-19	02-Jul-19	-	-
Analytical Report Reference					B19-19072	B19-19072	B19-21395	B19-21395
Benzene		0.21	0.21	0.02	-	-	< 0.02	< 0.02
Toluene		2.3	2.3	0.2	-	-	< 0.2	< 0.2
Ethylbenzene		2	2	0.05	-	-	< 0.05	< 0.05
Xylenes, total		3.1	3.1	0.03	-	-	< 0.03	< 0.03
TPH - gasoline/diesel (C5-C24)	F1 PHCs (C6-C10)	55	55	10	< 10	< 10	< 10	< 10
	F2 PHCs (C10-C16)	98	98	5	< 5	< 5	< 5	< 5
	F3 PHCs (C16-C34)	300	300	10	< 10	29	< 10	< 10
TPH - heavy oils (C24-C50)	F4 PHCs (C34-C50)	2800	2800	10	< 10	34	< 10	< 10
	F4 PHC Gravimetric				-	580	-	-

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location				BH04-1 GS-1	BH04-2 GS-1			BH04-3 GS-1	BH04-4 SS-2	BH04-5 GS-1	BH04-8 GS-1	BH04-10 GS-1	MW04-1 SS-4	MW04-1 COMP	MW04-3 SS-5	MW04-3 COMP	MW04-4 SS-3	MW04-4 COMP	MW04-5 SS-1	MW04-6 SS-4	TP04-1 GS-3	TP04-2 GS-3	TP04-3 GS-4	TP04-4 GS-3	TP04-5 GS-3	TP04-6 GS-1	TP04-9 GS-1	TP04-10 GS-1	Fill Composite #1 (BH04-13 & BH04-14)	Fill Composite #2 (BH04-15 & BH04-16)
Sample ID	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	BH04-1 GS-1	BH04-2 GS-1	DUP #1	RPD	BH04-3 GS-1	BH04-4 SS-2	BH04-5 GS-1	BH04-8 GS-1	BH04-10 GS-1	MW04-1 SS-4	MW04-1 COMP	MW04-3 SS-5	MW04-3 COMP	MW04-4 SS-3	MW04-4 COMP	MW04-5 SS-1	MW04-6 SS-4	TP04-1 GS-3	TP04-2 GS-3	TP04-3 GS-4	TP04-4 GS-3	TP04-5 GS-3	TP04-6 GS-1	TP04-9 GS-1	TP04-10 GS-1	Fill Composite #1 (BH04-13 & BH04-14)	Fill Composite #2 (BH04-15 & BH04-16)
Original Report				Ltd PhII	Ltd PhII	Ltd PhII		Ltd PhII	Ltd PhII	Ltd PhII	Ltd PhII	Ltd PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Supp PhII	Ph III	Ph III
Laboratory				Paracel	Paracel	Paracel		Paracel	Paracel	Paracel	Paracel	Paracel	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC	Paracel & PSC	Paracel & PSC
Laboratory ID				-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depth of Sample (m bgs)	(µg/g)	(µg/g)	(µg/g)	0 - 0.76	0 - 0.76	0 - 0.76		0 - 0.76	0.76 - 1.37	0 - 0.76	0 - 0.76	0 - 0.76	1.8 - 2.2	0 - 1.2	2.6 - 2.9	0 - 1.2	1.4 - 1.8	0 - 1.2	0 - 0.6	1.8 - 2.4	3.0	3.4	2.8	2.2	2.4	1.0	0.75	1.0	-	-
Sample Date				5-Feb-04	5-Feb-04	5-Feb-04		5-Feb-04	5-Feb-04	5-Feb-04	5-Feb-04	5-Feb-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	9-Aug-04	5-Nov-04	5-Nov-04
Date of Metals Analysis				-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Analytical Report Reference No.				-	-	-		-	-	-	-	-	G244792	G244793	G244794	G244795	G244796	G244797	G244798	G244799	G244800	G244801	G244802	G244803	G244804	G244805	G244807	G244808	-	-
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	8.22	8.27	8.31	0.5%	7.78	8.26	8.34	8.60	8.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity (mS/cm)	0.7	0.7	0.001	0.2	0.2	0.22	10%	0.18	0.44	0.39	0.2	0.64	-	0.28	-	0.24	-	0.56	-	-	-	-	-	-	-	-	**0.811**	0.135	-	-
SAR (unitless)	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	7.5	7.5	0.5	< 1	< 1	< 1	NC	< 1	<1	<1	<1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.2	< 0.2
Arsenic	18	18	0.5	2	2	2	0%	2	3	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	2.2
Barium	390	390	1	110	240	140	53%	150	140	130	60	100	202	350	63	200	124	80	162	187	266	225	169	125	204	191	108	202	119	214
Beryllium	4	4	0.2	< 0.5	< 0.5	< 0.5	NC	0.5	< 0.5	< 0.5	< 0.5	<0.5	0.8	<0.5	0.3	<0.5	0.3	<0.5	0.6	0.7	0.9	0.6	0.6	0.6	0.9	1.1	0.5	0.8	0.6	1.0
Boron (Hot Water Soluble)	1.5	1.5	0.02	< 1	< 1	< 1	NC	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron (total)	120	120	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (VI)	8	8	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1.2	1.2	0.5	< 1	< 1	< 1	NC	< 1	< 1	< 1	< 1	< 1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	< 1	< 1
Calcium	-	-	-	53,000	180,000	160,000	12%	23,000	86,000	130,000	240,000	220,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	10	10	15	40%	10	110	35	10	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, total	160	160	1	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	36	40	17	25	17	10	24	40	42	29	25	21	34	40	22	31	23	38
Cobalt	22	22	1	10	5	10	67%	**30**	10	10	< 5	< 5	12	15	6	10	5	<5	8	11	13	11	9	9	11	10	8	11	8	11
Copper	140	140	1	20	15	20	29%	10	40	45	10	10	18	30	8	35	16	10	28	27	28	19	24	16	22	21	18	21	18	27
Cyanide, free	0.051	0.051	-	< 0.03	< 0.03	< 0.03	NC	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	13,000	9,600	13,000	30%	17,000	13,000	14,000	5,800	7,400	28,900	31,000	13,800	23,000	12,900	7,200	22,000	28,000	33,400	26,300	22,700	21,900	31300	30,900	20,900	28,600	20,300	30,500
Lead	120	120	5	35	20	30	40%	25	60	100	15	75	8	33	<5	72	**152**	79	**132**	**121**	7	21	**194**	<5	50	45	32	54	56	29
Magnesium	-	-	-	11,000	9,800	10,000	2%	7,600	11,000	13,000	9,000	17,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	1,020	NA	339	NA	276	NA	688	587	468	539	488	463	745	545	516	772	369	470
Mercury	0.27	0.27	0.005	< 0.1	< 0.1	< 0.1	NC	< 0.1	< 0.1	0.1	< 0.1	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	6.9	6.9	1	< 1	< 1	< 1	NC	< 1	1	< 1	< 1	< 1	0.4	<1	<0.3	<1	0.7	<1	0.5	0.6	<0.3	<0.3	0.4	<0.3	0.4	<0.3	0.3	0.4	< 3	< 3
Nickel	100	100	1	15	20	25	22%	20	20	25	20	20	28	30	10	20	10	15	16	19	29	21	18	16	25	29	14	23	15	24
Nitrate (N)	-	-	-	< 1	< 1	< 1	NC	< 1	3	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	< 1	< 1	< 1	NC	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	-	-	-	-	-	-	-	-	-	914	NA	541	NA	822	NA	1,540	1,590	733	757	735	829	842	643	939	1,020	557	818
Selenium	2.4	2.4	0.5	< 1	<1	<1	NC	<1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	20	20	0.2	< 0.3	< 0.3	< 0.3	NC	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	<0.1	0.6	<0.1	<0.3	<0.1	<0.3	<0.1	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 1	< 1
Sodium	-	-	-	200	< 200	< 200	NC	200	600	800	< 200	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	< 1	< 1	< 1	NC	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 1
Tin	-	-	-	< 5	< 5	< 5	NC	< 5	< 5	< 5	< 5	< 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	778	NA	332	NA	351	NA	494	695	1,070	1,030	801	707	850	519	407	615	927	1,430
Uranium	23	23	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	86	86	1	30	20	30	40%	40	30	30	< 10	20	41	50	22	40	17	10	32	38	49	39	35	33	44	34	30	39	43	51
Zinc	340	340	3	40	40	40	0%	60	40	60	< 20	20	62	120	14	80	79	40	119	83	66	53	67	32	54	80	47	68	63	126

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP04-19 Composite	TP04-20 Composite	TP04-21 Composite	TP04-22 Composite	TP04-11 Composite	TP04-12 Composite	TP04-13 Composite	TP04-14 Composite	BH04-19 Composite "D"	BH04-20 Composite "F"	BH04-21 Composite "E"	AEC1 F1	AEC1 F2	AEC1 F3	AEC1 F5	AEC1 NW SA5	AEC1 EW SA4	AEC1 NW SA6	AEC1 WW-SA7	AEC1 SW SA1	AEC1 EW SA8	AEC1 WW-SA9	AEC2 F1	AEC2 F2
Sample ID				TP04-19 Composite	TP04-20 Composite	TP04-21 Composite	TP04-22 Composite	TP04-11 Composite	TP04-12 Composite	TP04-13 Composite	TP04-14 Composite	BH04-19 Composite "D"	BH04-20 Composite "F"	BH04-21 Composite "E"	AEC1 F1	AEC1 F2	AEC1 F3	AEC1 F5	AEC1 NW SA5	AEC1 EW SA4	AEC1 NW SA6	AEC1 WW-SA7	AEC1 SW SA1	AEC1 EW SA8	AEC1 WW-SA9	AEC2 F1	AEC2 F2
Original Report				Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Ph III	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation
Laboratory				Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel & PSC	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel
Laboratory ID				-	-	-	-	-	-	-	-	-	-	-	7520009-03	7520009-04	7520009-05	0803025-03	7520009-01	7520009-02	7520009-07	7520009-08	7520009-11	0803025-01	0803025-02	7490037-01	7490037-02
Depth of Sample (m bgs)				0.04 - 1.36	0.04 - 1.5	0.04 - 1	0.04 - 1.3	0.04 - 0.80	0.04 - 0.45	0.04 - 1	0.04 - 0.85	0.04 - 0.7	0.04 - 1.0	0.04 - 0.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Date				26-Nov-04	26-Nov-04	26-Nov-04	26-Nov-04	30-Nov-04	30-Nov-04	30-Nov-04	30-Nov-04	30-Nov-04	30-Nov-04	30-Nov-04	21-Dec-07	21-Dec-07	21-Dec-07	14-Jan-08	21-Dec-07	21-Dec-07	21-Dec-07	21-Dec-07	21-Dec-07	14-Jan-08	14-Jan-08	30-Nov-07	30-Nov-07
Date of Metals Analysis				-	-	-	-	-	-	-	-	-	-	-	27-Dec-07	27-Dec-07	27-Dec-07	17-Jan-08	27-Dec-07	27-Dec-07	27-Dec-07	27-Dec-07	27-Dec-07	17-Jan-08	17-Jan-08	5-Dec-07	5-Dec-07
Analytical Report Reference No.				-	-	-	-	-	-	-	-	-	-	-	7520009	7520009	7520009	803025	7520009	7520009	7520009	7520009	7520009	803025	803025	7490037	7490037
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.32	-	-	-	-	-	-	-	-
Conductivity (mS/cm)	0.7	0.7	0.001	-	-	-	-	0.172	0.191	0.163	0.181	0.192	0.219	0.248	-	-	-	-	-	-	-	-	-	-	-	-	-
SAR (unitless)	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	7.5	7.5	0.5	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	<1	<1	<1	-	-	<1	<1
Arsenic	18	18	0.5	-	-	-	-	-	-	-	-	-	-	-	2	<1	2	-	4	5	2	3	1	-	-	2	1
Barium	390	390	1	152	144	248	178	-	-	-	-	-	-	-	**566**	361	180	-	145	197	124	212	48	-	-	163	138
Beryllium	4	4	0.2	0.8	0.6	1.0	0.7	-	-	-	-	-	-	-	1.2	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	0.7	<0.5	-	<0.5	<0.5	<0.5
Boron (Hot Water Soluble)	1.5	1.5	0.02	-	-	-	-	-	-	-	-	-	-	-	0.6	<0.5	<0.5	-	0.6	0.6	<0.5	<0.5	<0.5	-	-	<0.5	<0.5
Boron (total)	120	120	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (VI)	8	8	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1.2	1.2	0.5	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	0.7	0.7	<0.5	-	<0.5	0.7	<0.5	<0.5	<0.5	-	-	<0.5	<0.5
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, total	160	160	1	28	27	37	27	-	-	-	-	-	-	-	56	50	28	-	25	32	20	32	9	-	-	33	32
Cobalt	22	22	1	9	9	12	9	-	-	-	-	-	-	-	14	13	10	-	9	12	7	11	6	-	-	10	10
Copper	140	140	1	28	23	26	34	-	-	-	-	-	-	-	37	33	21	-	26	27	19	22	10	-	-	18	13
Cyanide, free	0.051	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	30,600	23,600	32,300	25,500	-	-	-	-	-	-	-	38200	35500	22200	-	19900	24500	16300	23500	9840	-	-	27300	24100
Lead	120	120	5	90	66	46	**131**	-	-	-	-	-	97.3	78	14	15	29	-	74	**177**	50	74	15	**135**	-	11	9
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	544	464	539	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.27	0.27	0.005	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	-	<0.1	0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1
Molybdenum	6.9	6.9	1	< 3	< 3	< 3	< 3	-	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	<1	<1	<1	-	-	<1	<1
Nickel	100	100	1	19	17	26	19	-	-	-	-	-	-	-	39	34	21	-	19	21	15	21	12	-	-	21	18
Nitrate (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	729	944	859	962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	2.4	2.4	0.5	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	<1	<1	<1	-	-	<1	<1
Silver	20	20	0.2	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	0.4	0.4	0.3	-	0.3	0.4	<0.3	<0.3	0.3	-	-	<0.3	<0.3
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	<1	<1	<1	-	-	<1	<1
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	696	930	1,480	1,060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	23	23	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	86	86	1	35	37	50	40	-	-	-	-	-	-	-	64	66	43	-	37	49	31	46	18	-	-	47	50
Zinc	340	340	3	N/A	70	84	**389**	-	-	-	-	-	-	-	94	91	58	-	84	129	62	74	<20	-	-	48	54

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location				AEC2 WW SA1	AEC2 NW SA2	AEC2 EW SA3	AEC2 SW SA4	AEC3-F1	AEC3-F2	AEC3-F3	AEC3-F4	AEC3 WW SA1	AEC3 WW SA2	AEC3 NW SA3	AEC3 NW SA4	AEC3 EW SA5	AEC3 SW SA6	MW19-1		MW19-2		MW19-3		MW19-4	MW19-5	MW19-6
Sample ID	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	AEC2 WW SA1	AEC2 NW SA2	AEC2 EW SA3	AEC2 SW SA4	AEC3-F1	AEC3-F2	AEC3-F3	AEC3-F4	AEC3 WW SA1	AEC3 WW SA2	AEC3 NW SA3	AEC3 NW SA4	AEC3 EW SA5	AEC3 SW SA6	MW19-1 6"-2'	MW19-1 13'3"-16'6"	MW19-2 4'-6'9"	MW19-2 7'3"-10'	MW19-3 9"-3'4"	MW19-3 20'-21'	MW19-4 2'-3'8"	MW19-5 9"-3'4"	MW19-6 0'-1'6"
Original Report				Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	Remedial Excavation	-	-	-	-	-	-	-	-	-
Laboratory				Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				7490037-03	7490037-04	7490037-05	7490037-06	7480135-03	7490037-07	7490037-08	7490037-09	7480135-01	7480135-02	7490037-10	7490037-11	7490037-12	7490037-13	B19-18946-1	B19-20317-1	B19-18946-2	B19-20317-2	B19-18946-3	B19-18946-4	B19-18946-5	B19-19072-1	B19-19072-2
Depth of Sample (m bgs)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46 - 0.61	4.04 - 5.03	1.22 - 2.06	2.21 - 3.05	0.23 - 1.02	6.1 - 6.40	0.61 - 1.12	0.229 - 1.02	0 - 0.457
Sample Date				30-Nov-07	30-Nov-07	30-Nov-07	30-Nov-07	29-Nov-07	30-Nov-07	30-Nov-07	30-Nov-07	29-Nov-07	29-Nov-07	30-Nov-07	30-Nov-07	30-Nov-07	30-Nov-07	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19	26-Jun-19	26-Jun-19
Date of Metals Analysis				5-Dec-07	5-Dec-07	5-Dec-07	5-Dec-07	3-Dec-07	5-Dec-07	5-Dec-07	5-Dec-07	3-Dec-07	3-Dec-07	5-Dec-07	5-Dec-07	5-Dec-07	5-Dec-07	28-Jun-19	12-Jul-19	28-Jun-19	12-Jul-19	28-Jun-19	28-Jun-19	28-Jun-19	28-Jun-19	28-Jun-19
Analytical Report Reference No.				7490037	7490037	7490037	7490037	7480135	7490037	7490037	7490037	7480135	7480135	7490037	7490037	7490037	7490037	B19-18946	B19-20317	B19-18946	B19-20317	B19-18946	B19-18946	B19-18946	B19-19072	B19-19072
	(µg/g)	(µg/g)	(µg/g)																							
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	-	-	-	-	-	-	-	7.73	-	-	-	-	-	-	7.77	-	-	-	7.89	7.67	7.36	7.59	7.92
Conductivity (mS/cm)	0.7	0.7	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.42	-	-	-	0.15	0.153	0.23	0.218	**0.96**
SAR (unitless)	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.82	-	-	-	0.212	0.38	0.146	0.284	0.627
Antimony	7.5	7.5	0.5	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	0.8	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	18	18	0.5	5	6	3	4	1	3	2	2	4	3	10	2	3	3	4.9	2.9	4.7	3	4.5	4.6	3.7	3.6	2.1
Barium	390	390	1	240	164	274	236	124	216	176	142	165	127	153	190	79	123	278	322	275	157	154	132	207	251	190
Beryllium	4	4	0.2	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1.2	0.7	0.8	0.5	0.5	1	0.9	0.2
Boron (Hot Water Soluble)	1.5	1.5	0.02	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.25	-	0.28	-	0.23	0.23	0.27	0.21	0.28
Boron (total)	120	120	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.8	5.5	14.4	7.5	16.6	16.9	15.6	12.5	15.4
Chromium (VI)	8	8	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cadmium	1.2	1.2	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	27	26	27	5	8
Chromium, total	160	160	1	32	23	37	32	22	32	26	22	22	43	24	26	16	17	44	50	91	31	19	18	36	39	9
Cobalt	22	22	1	12	9	12	11	8	12	10	8	8	5	9	9	6	7	19	21	12	13	9	9	15	17	5
Copper	140	140	1	26	35	26	24	15	21	22	19	28	39	18	21	43	27	39	29	77	15	25	27	23	32	18
Cyanide, free	0.051	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	25900	22300	29800	26600	15800	26400	21700	19500	16800	16700	21000	22600	13200	15000	-	-	-	-	-	-	-	-	-
Lead	120	120	5	**134**	**135**	63	62	6	42	41	60	71	68	36	71	74	55	**191**	12	84	18	83	63	47	76	66
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.27	0.27	0.005	0.2	0.1	0.1	0.1	0.2	0.1	<0.1	<0.1	**0.6**	**0.7**	<0.1	<0.1	<0.1	**0.3**	0.077	0.02	**0.501**	0.074	0.05	0.057	0.104	0.061	0.032
Molybdenum	6.9	6.9	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Nickel	100	100	1	23	19	26	23	18	20	20	18	20	13	20	19	17	18	33	37	23	21	18	18	29	29	11
Nitrate (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	2.4	2.4	0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8	0.7	0.8	0.7	0.6	0.6	0.8	< 0.5	< 0.5
Silver	20	20	0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	2.5	<0.3	<0.3	<0.3	<0.3	< 0.2	< 0.2	4.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	23	23	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	0.5	0.6	0.5	0.4	0.4	0.5	0.4	0.3
Vanadium	86	86	1	44	33	51	43	31	46	38	34	28	23	34	38	22	24	56	69	40	42	23	21	42	53	13
Zinc	340	340	3	85	83	78	70	24	79	78	72	41	52	40	72	40	47	144	94	139	53	65	57	72	102	28

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
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Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location				TP19-1							TP19-6							TP19-7				
Sample ID	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP19-1 (0-1m)	Duplicate-3	RPD	TP19-1 (2.8 Centre)	TP19-1 (East)	TP19-1 (North)	TP19-1 (West)	TP19-6 (2m)	TP19-6 (2m North)	TP19-6 (2m South)	Duplicate-2	RPD	TP19-6 (2m East)	TP19-6 (2m West)	TP19-7 (2m)	TP19-7 (2m North)	TP19-7 (2m South)	TP19-7 (2m East)	TP19-7 (2m West)
Original Report				-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Laboratory				Caduceon	Caduceon		Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				B19-21395-14	B19-21395-19		B19-21395-15	B19-21395-16	B19-21395-17	B19-21395-18	B19-21395-2	B19-21395-6	B19-21395-7	B19-21395-5		B19-21395-8	B19-21395-9	B19-21395-3	B19-21395-10	B19-21395-11	B19-21395-12	B19-21395-13
Depth of Sample (m bgs)				1	1		2.8	2.7-2.9	2.7-2.9	2.7-2.9	2	2	2	0 - 2		2	2	2	2	2	2	2
Sample Date				15-Jul-19	15-Jul-19		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jun-19		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Date of Metals Analysis				24-Jul-19	24-Jul-19		24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19		24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19
Analytical Report Reference No.				B19-21395(i)	B19-21395(i)		B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)		B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)	B19-21395(i)
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	7.37	7.37	0.00%	-	-	-	-	7.27	-	-	-	-	-	-	7.05	-	-	-	-
Conductivity (mS/cm)	0.7	0.7	0.001	0.38	0.37	2.65%	-	-	-	-	0.16	-	-	-	-	-	-	0.27	-	-	-	-
SAR (unitless)	5	5	-	1.84	1.92	4.26%	-	-	-	-	0.794	-	-	-	-	-	-	1.46	-	-	-	-
Antimony	7.5	7.5	0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	18	18	0.5	3	3.2	6.45%	4.4	5.2	5.8	3.6	3.1	3.8	3	2.9	3.39%	3.1	2.9	3.8	2.6	3.3	< 0.5	2.9
Barium	390	390	1	178	174	2.27%	212	190	158	184	140	135	139	133	4.41%	159	201	179	140	188	1	156
Beryllium	4	4	0.2	0.6	0.6	0.00%	0.8	0.9	0.5	0.7	0.6	0.6	0.7	0.7	0.00%	0.8	0.9	0.8	0.6	0.6	< 0.2	0.4
Boron (Hot Water Soluble)	1.5	1.5	0.02	0.56	0.5	11.32%	0.56	0.69	0.45	0.55	0.43	0.44	0.41	0.44	7.06%	0.41	0.51	0.43	0.47	0.43	0.43	0.48
Boron (total)	120	120	0.5	10.6	13.8	26.23%	21.2	15.2	16	14.6	9.8	11.5	11.8	9.9	17.51%	11.8	12.8	10.7	13.2	11.5	7.7	14.1
Chromium (VI)	8	8	0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cadmium	1.2	1.2	0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, total	160	160	1	30	30	0.00%	32	35	19	28	26	29	29	28	3.51%	32	< 0.2	32	26	24	1	22
Cobalt	22	22	1	11	10	9.52%	13	13	7	11	11	12	13	12	8.00%	13	16	12	10	10	< 1	7
Copper	140	140	1	22	59	91.36%	25	23	17	27	20	16	18	17	5.71%	20	17	23	18	22	< 1	23
Cyanide, free	0.051	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	120	120	5	45	44	2.25%	66	53	**135**	88	52	56	18	17	5.71%	9	14	34	21	117	< 5	51
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.27	0.27	0.005	0.079	0.085	7.32%	0.066	0.084	0.058	0.079	0.123	0.087	0.053	0.063	17.24%	0.043	0.048	0.096	0.05	0.065	0.067	0.131
Molybdenum	6.9	6.9	1	< 1	< 1	<3 x MDL	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<3 x MDL	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Nickel	100	100	1	19	19	0.00%	24	24	14	22	19	20	21	20	4.88%	25	26	24	20	19	< 1	13
Nitrate (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	2.4	2.4	0.5	0.6	< 0.5	<3 x MDL	0.6	0.8	0.5	0.6	0.6	0.6	0.6	0.6	0.00%	0.8	0.6	0.8	0.5	0.5	< 0.5	< 0.5
Silver	20	20	0.2	0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	0.2	0.2	0.00%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.00%	0.2	0.2	0.2	0.2	0.2	< 0.1	0.2
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	23	23	0.1	0.5	0.5	0.00%	0.5	0.8	0.4	0.5	0.4	0.5	0.4	0.5	22.22%	0.5	0.6	0.5	0.4	0.4	< 0.1	0.3
Vanadium	86	86	1	36	37	2.74%	43	45	25	37	36	37	38	37	2.67%	42	46	43	33	31	< 1.1	20
Zinc	340	340	3	87	87	0.00%	96	105	69	131	59	54	53	52	1.90%	45	64	58	46	58	< 3	50

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location				TP19-8					TP19-9					TP19-10							
Sample ID	**O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use**	**O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use**	**Reportable Detection Limit**	**TP19-8-Centre**	**TP19-8-North**	**TP19-8-South**	**TP19-8-East**	**TP19-8-West**	**TP19-9 Centre**	**TP19-9-East**	**TP19-9-West**	**TP19-9-North**	**TP19-9-South**	**TP19-10-North**	**TP19-10-South**	**Duplicate 5**	**RPD**	**TP19-10-East**	**TP19-10-West**	**TP19-10-Centre**	**TP19-10-Bottom**
Original Report				-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-
Laboratory				Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				B19-21653-9	B19-21653-10	B19-21653-11	B19-21653-12	B19-21653-13	B19-21653-4	B19-21653-5	B19-21653-6	B19-21653-7	B19-21653-8	B19-21653-24	B19-21653-25	B19-21653-30		B19-21653-26	B19-21653-27	B19-21653-28	B19-21653-28
Depth of Sample (m bgs)				1.5 - 1.7	1.5 - 1.7	1.5 - 1.7	1.5 - 1.7	1.5 - 1.7	1.5			1.5	1.5	0.8	0.8	0.8		0.8	0.8	0.8	1.5
Sample Date				16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Date of Metals Analysis				24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19		24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19
Analytical Report Reference No.				B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29		B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-28
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	7.28	-	-	-	-	7.36	-	-	-	-	-	-	-		-	-	7.25	7.35
Conductivity (mS/cm)	0.7	0.7	0.001	0.241	-	-	-	-	0.258	-	-	-	-	-	-	-		-	-	-	-
SAR (unitless)	5	5	-	0.593	-	-	-	-	1.16	-	-	-	-	-	-	-		-	-	-	-
Antimony	7.5	7.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	18	18	0.5	3.2	3.7	3.7	3.4	3.5	3	4	3.8	4.2	3.6	2.6	2.9	3.1	6.9%	2.3	2.5	2.4	1.9
Barium	390	390	1	208	225	205	222	233	209	207	216	243	242	232	273	289	5.9%	189	206	196	78
Beryllium	4	4	0.2	0.8	0.9	0.8	1	1	0.8	0.9	0.9	1	1	0.8	0.9	1	11.1%	0.6	0.8	0.8	0.4
Boron (Hot Water Soluble)	1.5	1.5	0.02	0.12	0.15	0.15	0.14	0.16	0.08	0.19	0.12	0.16	0.13	0.11	0.1	0.16	60.0%	0.08	0.1	0.1	0.04
Boron (total)	120	120	0.5	6.1	2.7	7.8	3.1	2.5	5.2	4.1	3.9	9.5	5.3	8.4	5.5	6	9.1%	5.1	4.8	4.3	5.9
Chromium (VI)	8	8	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2
Cadmium	1.2	1.2	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5	< 0.5
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, total	160	160	1	33	34	34	34	37	32	34	32	38	36	38	39	54	38.5%	26	35	34	18
Cobalt	22	22	1	11	12	11	11	14	11	15	13	13	14	10	13	14	7.7%	10	10	10	6
Copper	140	140	1	24	26	34	24	21	23	21	23	27	24	24	29	30	3.4%	21	24	20	13
Cyanide, free	0.051	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	120	120	5	30	35	23	14	25	14	57	28	41	45	7	8	9	<3 x MDL	7	7	9	< 5
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.27	0.27	0.005	0.064	0.079	0.077	0.057	0.062	0.032	0.109	0.071	0.091	0.062	0.022	0.023	0.023	0.0%	0.015	0.025	0.026	0.028
Molybdenum	6.9	6.9	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2	<3 x MDL	< 1	< 1	< 1	< 1
Nickel	100	100	1	25	25	24	28	43	26	23	24	28	26	27	32	54	68.8%	21	25	26	17
Nitrate (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	2.4	2.4	0.5	0.7	0.7	0.7	0.9	0.8	0.7	0.6	0.7	0.7	0.7	0.7	0.9	0.9	<3 x MDL	0.6	0.7	0.7	< 0.5
Silver	20	20	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2	< 0.2
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.0%	0.2	0.2	0.2	0.1
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	23	23	0.1	0.5	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0%	0.4	0.5	0.5	0.4
Vanadium	86	86	1	41	44	42	45	49	41	49	46	51	50	48	50	52	4.0%	39	45	40	25
Zinc	340	340	3	56	63	62	55	68	52	89	67	78	72	65	69	73	5.8%	46	59	54	26

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 5 Summary of Analytical Results for Metals and Inorganics in Soil

Location				TP19-11					TP19-12					TP19-17			TP19-18	TP19-19
Sample ID	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP19-11-North	TP19-11-South	TP19-11-West	TP19-11-East	TP19-11-Centre	TP19-12-North	TP19-12-South	TP19-12-Centre	TP19-12-East	TP19-12-West	TP19-17	Duplicate 4	RPD	TP19-18	TP19-19
Original Report				-	-	-	-	-	-	-	-	-	-	-	-		-	-
Laboratory				Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon
Laboratory ID				B19-21653-14	B19-21653-15	B19-21653-16	B19-21653-17	B19-21653-18	B19-21653-19	B19-21653-20	B19-21653-21	B19-21653-22	B19-21653-23	B19-21653-1	B19-21653-31		B19-21653-2	B19-21653-3
Depth of Sample (m bgs)				1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8	2.4 - 2.7	2.4 - 2.7		2	1.5
Sample Date				16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19		16-Jul-19	16-Jul-19
Date of Metals Analysis				24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	25-Jul-19		24-Jul-19	24-Jul-19
Analytical Report Reference No.				B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29	B19-21653-29		B19-21653-29	B19-21653-29
	(µg/g)	(µg/g)	(µg/g)															
pH (unitless)	Acceptable range: 6-9	Acceptable range: 6-9	-	-	-	-	-	7.33	-	-	7.37	-	-	-	-	-	-	-
Conductivity (mS/cm)	0.7	0.7	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAR (unitless)	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	7.5	7.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Arsenic	18	18	0.5	3.3	4.2	6.1	3.4	3	2.6	1.9	3.5	3.4	3.2	3.1	2.1	38.46%	4.9	1.8
Barium	390	390	1	**516**	330	340	**401**	314	170	76	229	320	289	131	96	30.84%	237	138
Beryllium	4	4	0.2	1.2	1	1.1	1.1	0.9	0.8	0.3	0.7	0.9	0.8	0.6	0.4	40.00%	0.9	0.8
Boron (Hot Water Soluble)	1.5	1.5	0.02	0.2	0.21	0.25	0.13	0.14	0.2	0.14	0.19	0.15	0.2	0.09	0.11	20.00%	0.21	0.3
Boron (total)	120	120	0.5	1.4	2.4	4.6	4.4	5.6	6.5	4.4	12.9	5.9	6.8	5.2	5.3	1.90%	7	6.3
Chromium (VI)	8	8	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2
Cadmium	1.2	1.2	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, total	160	160	1	53	45	45	50	40	33	12	29	46	34	24	17	34.15%	36	24
Cobalt	22	22	1	18	16	17	19	14	12	6	10	14	12	9	7	25.00%	14	12
Copper	140	140	1	37	33	32	37	30	18	13	22	30	26	22	13	51.43%	36	9
Cyanide, free	0.051	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	120	120	5	10	25	79	14	15	27	35	65	11	21	39	12	105.88%	**256**	16
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.27	0.27	0.005	0.019	0.038	0.058	0.017	0.022	0.051	0.031	0.044	0.02	0.04	0.086	0.037	79.67%	**0.298**	0.055
Molybdenum	6.9	6.9	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<3 x MDL	< 1	< 1
Nickel	100	100	1	43	32	34	42	32	23	10	23	38	29	17	14	19.35%	26	20
Nitrate (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	2.4	2.4	0.5	0.9	0.5	0.9	0.7	0.7	< 0.5	< 0.5	0.6	0.7	0.6	0.5	< 0.5	<3 x MDL	0.8	0.6
Silver	20	20	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	1.0	1.0	0.1	0.4	0.3	0.3	0.4	0.3	0.2	0.1	0.2	0.3	0.3	0.2	0.1	66.67%	0.2	0.1
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	23	23	0.1	0.6	0.5	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	22.22%	0.5	0.3
Vanadium	86	86	1	68	56	60	67	55	51	23	41	57	46	30	24	22.22%	46	25
Zinc	340	340	3	101	153	98	104	94	76	45	103	137	67	53	29	58.54%	109	48

Notes:

Concentrations Reported in µg/g dry weight

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SuppPhII	Jacques Whitford, 2004, "Supplemental Phase II Environmental Site Assessment, Kingston Prison for Women," dated September 9, 2004
Ph III	Jacques Whitford, 2005, "Phase III Delineation Environmental Site Assessment, Kingston Prison for Women," dated January 13, 2005
Remediation	8Jacques Whitford, 2008, "Final Report: Soil Remediation Excavation, Former Kingston Prison for Women, 40 Sir John A. MacDonald Blvd., Kingston, Ontario," dated February 5, 2008, prepared for Canada Lands Company CLC Limited
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 6 Summary of Analytical Results for PAHs in Soil

Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	BH04-1,2,3 COMP.	BH04-4,5,7 COMP.	BH04-8,9,10 COMP.	Fill Composite #1 (BH04-13 & BH04-14)	Fill Composite #2 (BH04-15 & BH04-16)	MW19-3		MW19-4	TP19-1			TP19-6	TP19-7	TP19-8	TP19-9
Sample ID				BH04-1,2,3 COMP.	BH04-4,5,7 COMP.	BH04-8,9,10 COMP.	Fill Composite #1 (BH04-13 & BH04-14)	Fill Composite #2 (BH04-15 & BH04-16)	MW19-3 9"-3'4"	MW19-3 20'-21'	MW19-4 2'-3'8"	TP19-1 (0-1m)	Duplicate-3		TP19-6 (2m)	TP19-7 (2m)	TP19-8 Centre	TP19-9 Centre
Original Report				Ltd PhII	Ltd PhII	Ltd PhII	Ph III	Ph III	-	-	-	-	-		-	-	-	-
Laboratory				Paracel	Paracel	Paracel	Paracel & PSC	Paracel & PSC	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				-	-	-	-	-	B19-18946-3	B19-18946-4	B19-18946-5	B19-21395-14	B19-21395-19	RPD	B19-21395-2	B19-21395-3	B19-21653-9	B19-21653-4
Depth of Sample (mbgs)				-	-	-	-	-	0.23 - 1.02	6.1 - 6.40	0.61 - 1.12	1	1		2	2	1.5 - 1.7	1.5
Sample Date				5-Feb-04	5-Feb-04	5-Feb-04	5-Nov-04	5-Nov-04	25-Jun-19	25-Jun-19	25-Jun-19	15-Jul-19	15-Jul-19		15-Jul-19	15-Jul-19	16-Jul-19	16-Jul-19
Date of Analysis	(µg/g)	(µg/g)	(µg/g)	-	-	-	-	-	27-Jun-19	27-Jun-19	27-Jun-19	22-Jul-19	22-Jul-19		22-Jul-19	22-Jul-19	22-Jul-19	24-Jul-19
Analytical Report Reference No.				-	-	-	-	-	B19-18946	B19-18946	B19-18946	B19-21395 (iii)	B19-21395 (iii)		B19-21395 (iii)	B19-21395 (iii)	B19-21653 (ii)	B19-21653 (ii)
Acenaphthene	7.9	7.9	0.05	< 0.020	0.06	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	0.15	0.15	0.05	< 0.020	< 0.020	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	0.67	0.67	0.05	< 0.020	0.06	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[a]anthracene	0.5	0.5	0.05	< 0.020	0.10	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.13	26.1%	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[a]pyrene	0.3	0.3	0.05	< 0.020	0.12	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.11	0.13	16.7%	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[b]fluoranthene	0.78	0.78	0.05	< 0.020	0.10	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.16	0.17	6.1%	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b+k)fluoranthene	-	-	-	-	-	-	-	-	0.06	< 0.05	< 0.05	0.22	0.24	8.7%	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[g,h,i]perylene	6.6	6.6	0.05	< 0.020	0.08	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.08	13.3%	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[k]fluoranthene	0.78	0.78	0.05	< 0.020	0.04	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.07	15.4%	< 0.05	< 0.05	< 0.05	< 0.05
Biphenyl	0.31	0.31	-	< 0.020	0.02	< 0.040	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	7	7	0.05	< 0.020	0.16	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.12	0.15	22.2%	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo[a,h]anthracene	0.1	0.1	0.05	< 0.020	0.02	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	0.69	0.69	0.05	< 0.020	0.20	< 0.040	<1.0	< 0.05	0.06	< 0.05	< 0.05	0.24	0.31	25.5%	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	62	62	0.05	< 0.020	0.02	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Indeno[1,2,3-cd]pyrene	0.38	0.38	0.05	< 0.020	0.06	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.09	0.1	10.5%	< 0.05	< 0.05	< 0.05	< 0.05
1-Methylnaphthalene	0.99	0.99	0.05	< 0.020	0.42	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene			0.05	< 0.020	0.44	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene (1&2)	0.99	0.99	0.05	-	-	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	0.6	0.6	0.05	< 0.020	0.3	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	6.2	6.2	0.05	< 0.020	0.30	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.09	0.11	20.0%	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	78	78	0.05	< 0.020	0.18	< 0.040	<1.0	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.26	21.3%	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Concentrations Reported in µg/g dry weight

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<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
<1.0	Reportable Detection Limit exceeds MOE Table 3 and MOE Table 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
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Table 6 Summary of Analytical Results for PAHs in Soil

Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	TP19-10		TP19-11	TP19-12
Sample ID				TP19-10-Centre	TP19-10-Bottom	TP19-11-Centre	TP19-12 Centre
Original Report				-	-	-	-
Laboratory				Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				B19-21653-28	B19-21653-28	B19-21653-18	B19-21653-21
Depth of Sample (mbgs)				0.8	1.5	1.2	0.8
Sample Date				16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Date of Analysis	(µg/g)	(µg/g)	(µg/g)	24-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19
Analytical Report Reference No.				B19-21653 (ii)	B19-21653 (ii)	B19-21653 (ii)	B19-21653 (ii)
Acenaphthene	7.9	7.9	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	0.15	0.15	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	0.67	0.67	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[a]anthracene	0.5	0.5	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[a]pyrene	0.3	0.3	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[b]fluoranthene	0.78	0.78	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b+k)fluoranthene	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[g,h,i]perylene	6.6	6.6	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[k]fluoranthene	0.78	0.78	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Biphenyl	0.31	0.31	-	-	-	-	-
Chrysene	7	7	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo[a,h]anthracene	0.1	0.1	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	0.69	0.69	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	62	62	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno[1,2,3-cd]pyrene	0.38	0.38	0.05	< 0.05	< 0.05	< 0.05	< 0.05
1-Methylnaphthalene	0.99	0.99	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene			0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene (1&2)	0.99	0.99	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	0.6	0.6	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	6.2	6.2	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	78	78	0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Concentrations Reported in µg/g dry weight

Ltd PhII	Jacques Whitford, 2004, "Limited Phase II Environmental Site Assessment, 40 Sir John A. MacDonald, Kingston, Ontario," dated April 22, 2004, prepared for Canada Lands Company CLC Limited
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<	Below laboratory RDL (Reportable Detection Limit)
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
<1.0	Reportable Detection Limit exceeds MOE Table 3 and MOE Table 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
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MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 7 Summary of Analytical Results for VOCs in Soil

Sample Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	MW19-2		MW19-3		MW19-4	TP19-2		
Sample ID				**MW19-2 4'-6'9"**	**MW19-2 7'3"-10'**	**MW19-3 9"-3'4"**	**MW19-3 6'6"-8'**	**MW19-4 2'-3'8"**	**TP19-2 (0.8)**	**Soil Duplicate**	**RPD**
Laboratory				**Caduceon**	**Caduceon**	**Caduceon**	**Caduceon**	**Caduceon**	**Caduceon**	**Caduceon**	
Laboratory ID				**B19-18946-2**	**B19-20317-2**	**B19-20294-1**	**B19-20317-3**	**B19-18946-2**	**B19-21395-1**	**B19-21395-4**	
Depth of Sample (mbgs)				**1.22 - 2.06**	**2.21 - 3.05**	**0.23 - 1.02**	**1.98 - 2.44**	**0.61 - 1.12**	**0.8**	**0.8**	
Sample Date				**25-Jun-19**	**25-Jun-19**	**25-Jun-19**	**25-Jun-19**	**25-Jun-19**	**15-Jul-19**	**15-Jul-19**	
Date of Analysis				**27-Jun-19**	**10-Jul-19**	**27-Jun-19**	**10-Jul-19**	**27-Jun-19**	**17-Jul-19**	**17-Jul-19**	
Analytical Report Reference No.	**(µg/g)**	**(µg/g)**	**(µg/g)**	**B19-18946**	**B19-20317**	**B19-20294**	**B19-20317**	**B19-18946**	**B19-21395 (ii)**	**B19-21395 (ii)**	
Acetone	16	16	0.5	< 0.5	< 0.5	2.7	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL
Benzene	0.21	0.21	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Bromodichloromethane	13	13	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Bromoform	0.27	0.27	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Bromomethane	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Carbon Tetrachloride	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Chlorobenzene	2.4	2.4	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Chloroform	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Dibromochloromethane	9.4	9.4	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Dichlorodifluoromethane	16	16	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
1,2-Dichlorobenzene	3.4	3.4	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
1,3-Dichlorobenzene	4.8	4.8	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
1,4-Dichlorobenzene	0.083	0.083	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
1,1-Dichloroethane	3.5	3.5	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,2-Dichloroethane	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,1-Dichloroethylene	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
cis-1,2-Dichloroethylene	3.4	3.4	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
trans-1,2-Dichloroethylene	0.084	0.084	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,2-Dichloropropane	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
cis-1,3-Dichloropropylene	-	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
trans-1,3-Dichloropropylene	-	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,3-Dichloropropene, total	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Ethylbenzene	2	2	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Ethylene dibromide (dibromoethane, 1,2-)	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Hexane	2.8	2.8	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Methyl Ethyl Ketone (2-Butanone)	16	16	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL
Methyl Isobutyl Ketone	1.7	1.7	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL
Methyl tert-butyl ether	0.75	0.75	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Methylene Chloride (Dichloromethane)	0.1	0.1	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Styrene	0.7	0.7	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
1,1,1,2-Tetrachloroethane	0.058	0.058	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,1,2,2-Tetrachloroethane	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Tetrachloroethylene	0.28	0.28	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Toluene	2.3	2.3	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL
1,1,1-Trichloroethane	0.38	0.38	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
1,1,2-Trichloroethane	0.05	0.05	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Trichloroethylene	0.061	0.061	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<3 x MDL
Trichlorofluoromethane	4	4	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
Vinyl Chloride	0.02	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<3 x MDL
m/p-Xylene	-	-	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	<3 x MDL
o-Xylene	-	-	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	<3 x MDL
Xylenes, total	3.1	3.1	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	<3 x MDL

Notes:

Concentrations Reported in µg/g dry weight

<	Below laboratory RDL
Bold & Highlighted	Parameter concentration exceeds MOE Table 3 & 7 Standards
RPD	Relative Percent Difference calculated as the absolute difference between duplicate results divided by the average expressed in percent.
NC	Not Calculated
-	Not Analyzed/ Not applicable
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 8 Summary of Analytical Results for PHCs and BTEX in Groundwater

Sampling Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use (µg/L)	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use (µg/L)	Reportable Detection Limit (µg/L)	MW04-1	MW04-03	MW04-4			MW04-5	MW04-6			MW19-1	MW19-3			MW19-4			MW19-6
Sample ID				MW04-1	MW04-03	MW04-4	DUPLICATE MW04-4	RPD	MW04-5	MW04-6	MW04-6	MW04-6	MW19-1	MW19-3	Duplicate	RPD	MW19-4	MW19-4	MW19-4	MW19-6
Laboratory				PSC	PSC	PSC	PSC		PSC	PSC	Caduceon	Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon	Caduceon	Caduceon
Laboratory ID				-	-	-	-		-	-	B19-21399-2	B19-39978-1	B19-21399-3	B19-21399-1	B19-21399-7		B19-21399-4	B19-23868-1	B19-38094-1	B19-21399-5
Sample Date				16-Aug-04	16-Aug-04	16-Aug-04	16-Aug-04		16-Aug-04	16-Aug-04	12-Jul-19	11-Dec-19	12-Jul-19	12-Jul-19	12-Jul-19		12-Jul-19	02-Aug-19	25-Nov-19	12-Jul-19
Date of F1 Analysis				-	-	-	-		-	-	19-Jul-19	13-Dec-19	19-Jul-19	19-Jul-19	19-Jul-19		19-Jul-19	08-Aug-19	27-Nov-19	19-Jul-19
Date of F2/F3/F4 Analysis				-	-	-	-		-	-	16-Jul-19	13-Dec-19	16-Jul-19	16-Jul-19	16-Jul-19		16-Jul-19	07-Aug-19	26-Nov-19	16-Jul-19
Analytical Report Reference No.				-	-	-	-		-	-	B19-21399	B19-39978	B19-21399	B19-21399	B19-21399		B19-21399	B19-23868	B19-38094	B19-21399
Benzene	44	0.5	0.2	<0.20	<0.20	<0.20	<0.20	NC	<0.20	<0.20	-	-	-	-	-	-	-	< 0.5	-	-
Ethylbenzene	2300	54	0.2	0.72	0.49	0.35	<0.20	NC	1.19	0.59	-	-	-	-	-	-	-	< 0.5	-	-
Toluene	18000	320	0.2	<0.20	0.44	<0.20	<0.20	NC	<0.20	<0.20	-	-	-	-	-	-	-	< 0.5	-	-
Xylenes, total	4200	72	0.6	<0.60	0.62	<0.60	<0.60	NC	1.12	<0.60	-	-	-	-	-	-	-	< 1.1	-	-
F1 PHCs (C6-C10)	750	420	50	<100	<100	<100	<100	NC	<100	<100	< 50	< 50	< 50	< 50	< 50	<3 x MDL	< 50	< 50	< 50	-
F2 PHCs (C10-C16)	150	150	50	<100	<100	<100	<100	NC	<100	<100	< 50	< 50	< 50	< 50	< 50	<3 x MDL	< 50	< 50	< 50	< 50
F3 PHCs (C16-C34)	500	500	400	<100	<100	131	233	56%	<100	**672**	< 400	< 400	< 400	< 400	< 400	<3 x MDL	**1300**	< 400	< 400	< 400
F4 PHCs (C34-C50)	500	500	400	<100	<100	130	209	47%	<100	470	< 400	< 400	< 400	< 400	< 400	<3 x MDL	< 400	< 400	< 400	< 400

Notes:

Concentrations Reported in µg/L

< Below laboratory RDL (Reportable Detection Limit)

Bold & Shaded Parameter concentration exceeds MOE Table 3 Standards

Bold, Shaded, & Underlined Parameter concentration exceeds MOE Table 7 Standards

N/V No Value

\- Not Analyzed

MOE Table 3 Standards: Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use

MOE Table 7 Standards: Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

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Table 9 Summary of Analytical Results for Metals in Groundwater

Sample Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	MW04-1	MW04-03	MW04-4			MW04-5		MW04-6	MW19-1	MW19-3				MW19-4	MW19-6
Sample ID				MW04-1	MW04-03	MW04-4	DUPLICATE MW04-4	RPD	MW04-5	MW4-05	MW04-6	MW19-1	MW19-3	Duplicate	RPD		MW19-4	MW19-6
Laboratory				PSC	PSC	PSC	PSC		PSC	Caduceon	PSC	Caduceon	Caduceon	Caduceon			Caduceon	Caduceon
Laboratory ID				-	-	-	-		-	B19-21399-6	-	B19-21399-3	B19-21399-1	B19-21399-7			B19-21399-4	B19-21399-5
Sample Date				16-Aug-04	16-Aug-04	16-Aug-04	16-Aug-04		16-Aug-04	12-Jul-19	16-Aug-04	12-Jul-19	12-Jul-19	12-Jul-19			12-Jul-19	12-Jul-19
Date of Metals Analysis				-	-	-	-		-	17-Jul-19	-	17-Jul-19	17-Jul-19	17-Jul-19			17-Jul-19	17-Jul-19
Analytical Report Reference No.	(µg/L)	(µg/L)	(µg/L)	-	-	-	-		-	B19-21399	-	B19-21399	B19-21399	B19-21399			B19-21399	B19-21399
Electrical Conductivity (µS/cm)	N/A	N/A	1	-	-	-	-	-	721	629	-	1220	-	-	-		-	1440
Chloride	2300000	1800000	0.5	-	-	-	-	-	-	3700	-	142000	117000	116000	0.86%		25700	239000
Antimony	20000	16000	0.1	<0.0005	0.0013	0.0007	<0.0005	NC	0.0013	-	<0.0005	< 0.1	< 0.1	< 0.1	<3 x MDL		1.5	0.3
Arsenic	1900	1500	0.1	<0.002	0.003	<0.002	<0.002	NC	<0.002	-	<0.002	< 0.1	< 0.1	< 0.1	<3 x MDL		0.4	0.3
Barium	29000	23000	1	0.128	0.049	0.066	0.046	36%	0.093	-	0.104	150	119	121	1.67%		90	105
Beryllium	67	53	0.1	<0.001	<0.001	<0.001	<0.001	NC	<0.001	-	<0.001	< 0.1	< 0.1	< 0.1	<3 x MDL		< 0.1	< 0.1
Bismuth	-	-	-	<0.001	<0.001	<0.001	<0.001	NC	<0.001	-	<0.001	-	-	-	-		-	-
Boron	45000	36000	5	0.039	0.231	0.231	0.197	16%	0.117	-	0.061	44	120	118	1.68%		166	139
Cadmium	2.7	2.1	0.015	<0.0001	<0.0001	<0.0001	<0.0001	NC	<0.0001	-	<0.0001	< 0.015	< 0.015	< 0.015	<3 x MDL		< 0.015	< 0.015
Calcium	-	-	-	118	67.4	91.8	89.9	2%	78.3	-	136	-	-	-	-		-	-
Chromium	810	640	2	<0.005	<0.005	<0.005	<0.005	NC	<0.005	-	<0.005	< 2	< 2	< 2	<3 x MDL		< 2	< 2
Chromium (VI)	140	110	10	-	-	-	-	-	-	-	-	< 10	< 10	< 10	<3 x MDL		< 10	< 10
Cobalt	66	52	0.1	0.0026	0.0028	0.0038	0.0050	27%	0.0007	-	0.0031	0.3	0.2	0.2	0.00%		0.5	1.6
Copper	87	69	2	0.0009	0.0037	0.0031	0.0034	9%	0.0028	-	0.0023	< 2	< 2	< 2	<3 x MDL		< 2	< 2
Iron	-	-	0.03	<0.03	0.04	<0.03	<0.03	NC	0.04	-	0.05	-	-	-	-		-	-
Lead	25	20	0.02	0.0008	<0.0005	<0.0005	0.0017	NC	0.0009	-	0.0008	0.02	< 0.02	< 0.02	<3 x MDL		0.06	0.06
Magnesium	-	-	0.05	23.5	18.7	26.2	26.4	1%	14.8	-	30.2	-	-	-	-		-	-
Manganese	-	-	0.005	0.408	0.024	0.031	0.009	110%	0.076	-	0.191	-	-	-	-		-	-
Mercury	0.29	0.1	0.02	-	-	-	-	-	-	-	-	0.05	< 0.02	< 0.02	<3 x MDL		< 0.02	0.04
Molybdenum	9200	7300	0.1	0.011	0.098	0.043	0.031	32%	0.100	-	0.269	0.7	1	1	0.00%		3.1	3
Nickel	490	390	0.2	0.004	0.005	0.005	0.004	22%	0.005	-	0.009	1.9	1.3	1.3	0.00%		2.2	4.9
Phosphorus	-	-	0.05	<0.05	<0.05	<0.05	0.06	NC	<0.05	-	<0.05	-	-	-	-		-	-
Potassium	-	-	0.1	2.2	24.0	28.4	26.8	6%	11.5	-	7.5	-	-	-	-		-	-
Selenium	63	50	1	<0.002	0.003	0.003	0.003	0%	<0.002	-	0.004	2	1	1	0.00%		< 1	2
Silver	1.5	1.2	0.1	<0.0001	<0.0001	<0.0001	<0.0001	NC	<0.0001	-	<0.0001	< 0.1	< 0.1	< 0.1	<3 x MDL		< 0.1	< 0.1
Sodium	2300000	1800000	200	66.8	278	298	302	1%	82.3	-	8.6	86700	85400	84500	1.06%		25000	77700
Strontium	-	-	0.001	1.56	1.48	1.81	2.26	22%	5.05	-	7.56	-	-	-	-		-	-
Thallium	510	400	0.05	<0.00005	0.00009	0.00010	0.00006	50%	0.00009	-	<0.00005	< 0.05	< 0.05	< 0.05	<3 x MDL		< 0.05	< 0.05
Tin	-	-	0.001	0.001	<0.001	<0.001	<0.001	NC	<0.001	-	<0.001	-	-	-	-		-	-
Titanium	-	-	0.005	<0.005	<0.005	<0.005	<0.005	NC	<0.005	-	<0.005	-	-	-	-		-	-
Uranium	420	330	0.05	0.0012	0.0027	0.0015	0.0012	22%	0.0031	-	0.0014	0.63	0.72	0.68	5.71%		0.57	1.27
Vanadium	250	200	5	0.0009	0.0009	0.0009	0.0015	50%	0.0005	-	0.0009	< 5	< 5	< 5	<3 x MDL		< 5	< 5
Zinc	1100	890	5	0.008	0.0012	<0.005	0.014	NC	0.009	-	0.035	6	< 5	< 5	<3 x MDL		6	5

Notes:	Concentrations Reported in µg/L
<	Below laboratory RDL (Reportable Detection Limit)
Bold & Shaded	Parameter concentration exceeds MOE Table 3 Standards
Bold, Shaded, & Underlined	Parameter concentration exceeds MOE Table 7 Standards
N/V	No Value
-	Not Analyzed
MOE Table 3 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, All Types of Property Use
MOE Table 7 Standards	Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

Table 10 Summary of Analytical Results for VOCs in Groundwater

Sample Location	O. Reg. 153/04 (2011) - Table 3 Residential / Parkland / Institutional Property Use	O. Reg. 153/04 (2011) - Table 7 Residential / Parkland / Institutional Property Use	Reportable Detection Limit	MW04-5	MW19-1	MW19-3			MW19-4		Trip Blank
Sample ID				MW04-5	MW19-1	MW19-3	Duplicate	RPD	MW19-4	MW19-4	-
Laboratory				Caduceon	Caduceon	Caduceon	Caduceon		Caduceon	Caduceon	Caduceon
Laboratory ID				B19-21399-6	B19-21399-3	B19-21399-1	B19-21399-7		B19-21399-4	B19-23868-1	B19-21399-8
Sample Date				12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19		12-Jul-19	02-Aug-19	12-Jul-19
Date of Analysis				19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19		19-Jul-19	08-Aug-19	19-Jul-19
Analytical Report Reference No.	(µg/L)	(µg/L)	(µg/L)	B19-21399	B19-21399	B19-21399	B19-21399		B19-21399	B19-23868-1	B19-21399
Acetone	130,000	100,000	30	< 30	< 30	< 30	< 30	<3 x MDL	< 30	< 30	< 30
Benzene	44	0.50	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Bromodichloromethane	85000	67000	2	< 2	< 2	< 2	< 2	<3 x MDL	< 2	< 2	< 2
Bromoform	380	5	5	< 5	< 5	< 5	< 5	<3 x MDL	< 5	< 5	< 5
Bromomethane	5.6	0.89	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.79	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2
Chlorobenzene	630	140	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Chloroform	2.4	2.0	1	< 1	< 1	< 1	< 1	<3 x MDL	< 1	< 1	< 1
Dibromochloromethane	82000	65000	2	< 2	< 2	< 2	< 2	<3 x MDL	< 2	< 2	< 2
1,2-Dichlorobenzene	4600	150	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	9600	7600	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	8	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	4400	3500	2	< 2	< 2	< 2	< 2	<3 x MDL	< 2	< 2	< 2
1,1-Dichloroethane	320	11	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	1.6	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,1-Dichloroethylene	1.6	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethylene	1.6	1.6	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethylene	1.6	1.6	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	16	0.58	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropylene	-	-	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropylene	-	-	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,3-Dichloropropene, total	5.2	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Ethylbenzene	2300	54	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Ethylene dibromide (Dibromoethane, 1,2-)	0.25	0.20	0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2
Hexane	51	5	5	< 5	< 5	< 5	< 5	<3 x MDL	< 5	< 5	< 5
Methyl Ethyl Ketone (2-Butanone)	470000	21000	20	< 20	< 20	< 20	< 20	<3 x MDL	< 20	< 20	< 20
Methyl Isobutyl Ketone	140000	5200	20	< 20	< 20	< 20	< 20	<3 x MDL	< 20	< 20	< 20
Methyl tert-butyl ether	190	15	2	< 2	< 2	< 2	< 2	<3 x MDL	< 2	< 2	< 2
Methylene Chloride (Dichloromethane)	610	26	5	< 5	< 5	< 5	< 5	<3 x MDL	< 5	< 5	< 5
Styrene	1300	43	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	3.3	1.1	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	3.2	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	1.6	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Toluene	18000	320	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	640	23	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	4.7	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Trichloroethylene	1.6	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	2,500	2,000	5	< 5	< 5	< 5	< 5	<3 x MDL	< 5	< 5	< 5
Vinyl Chloride	0.5	0.5	0.2	< 0.2	< 0.2	< 0.2	< 0.2	<3 x MDL	< 0.2	< 0.2	< 0.2
m/p-Xylene	-	-	1	< 1.0	< 1.0	< 1.0	< 1.0	<3 x MDL	< 1.0	< 1.0	< 1.0
o-Xylene	-	-	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3 x MDL	< 0.5	< 0.5	< 0.5
Xylenes, total	4200	72	1.1	< 1.1	< 1.1	< 1.1	< 1.1	<3 x MDL	< 1.1	< 1.1	< 1.1

Notes:

Concentrations Reported in µg/L

< Below laboratory RDL (Reportable Detection Limit)

Bold & Shaded Parameter concentration exceeds MOE Table 3 Standards

Bold, Shaded, & Underlined Parameter concentration exceeds MOE Table 7 Standards

N/V No Value

\- Not Analyzed

MOE Table 3 Standards Ontario Ministry of the Environment's (MOE) "Soil, Ground

MOE Table 7 Standards Ontario Ministry of the Environment's (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (2011), Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use

FIGURES

SIR JOHN A MACDONALD BLVD

KING STREET WEST

UNION STREET

WEST CAMPUS LANE

ADMINISTRATION WING

ELECTRICAL ROOM

CELL BLOCK

FORMER AUTOMOTIVE GARAGE

CORRECTIONAL SERVICE OF CANADA MUSEUM
(50-94 SIR JOHN A. MACDONALD BLD)

ASPHALT PATH

CONCRETE FENCE

STONE FENCE CAPPED WITH IRON

BH 04-16
BH 04-14
BH 04-17
BH 04-15
BH 04-13
BH 04-3
TP 04-1
MW04-1
BH 04-2
TP19-2
MW19-3
MW19-6
BH 04-5
MW04-3
BH 04-8
TP 04-2
BH 04-4
TP 04-4
BH 04-1
TP19-9
TP 04-22
TP 04-19
BH 04-7
TP 04-6
TP 04-24
TP 04-23
TP19-6
TP19-8
TP 04-21
TP 04-20
TP19-7
TP 04-5
MW19-5
MW19-1
TP19-1
TP 04-3
TP19-18
MW04-6
MW19-2
TP19-17
TP19-19
TP19-10
TP 04-25
TP 04-8
TP 04-27
BH 04-9
MW04-4
TP19-11
BH 04-18
TP19-12
TP 04-26
BH 04-10
TP 04-16
TP 04-15
BH 04-19-N
BH 04-19-SE
TP 04-10
MW19-4
TP 04-17
TP 04-18
BH 04-19-SW
TP 04-14
TP 04-13
BH 04-20-SE
BH 04-21-N
BH 04-21-SE
BH 04-20-N
TP 04-9
MW 04-5
BH 04-20-SW
BH 04-21-SW
TP 04-11
TP 04-12

KEY MAP
NOT TO SCALE

APPROXIMATE SUBJECT PROPERTY BOUNDARIES
APPROXIMATE PROPERTY BOUNDARIES
STRUCTURE
FORMER FEATURES
HISTORICAL EXCAVATIONS
GRASSED AREA
TRANSFORMER
CATCH BASIN
MANHOLE
FIRE HYDRANT
MONITORING WELL LOCATION (2004, JW)
BOREHOLE LOCATION (2004, JW)
TEST PIT LOCATION (2004, JW)
COMPOST SAMPLE LOCATION (2004, JW)
MONITORING WELL LOCATION (XCG, JULY 2019)
TEST PIT LOCATION (XCG, JULY 2019)

0 20 40m

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
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SHEET: R18982503001FIG01.pdf
FILE: R18982503001.dwg

SAMPLE LOCATIONS

40 SIR JOHN A. MACDONALD BOULEVARD
KINGSTON, ONTARIO

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DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	1

SIR JOHN A MACDONALD BLVD

KING STREET WEST

UNION STREET

WEST CAMPUS LANE

ADMINISTRATION WING

ELECTRICAL ROOM

CELL BLOCK

FORMER AUTOMOTIVE GARAGE

CORRECTIONAL SERVICE OF CANADA MUSEUM
(50-94 SIR JOHN A. MACDONALD BLD)

ASPHALT PATH

CONCRETE FENCE

STONE FENCE CAPPED WITH IRON

BH 04-16 BH 04-14 BH 04-17 BH 04-15 BH 04-13 BH 04-3 TP 04-1 MW04-1 BH 04-18 TP19-10 TP 04-25 TP 04-8 BH 04-9 TP 04-27 TP19-11 MW04-4 TP19-12 TP 04-26 MW04-3 BH 04-5 BH 04-8 BH 04-2 TP19-2 96.07 MW19-3 96.0 95.5 95.0 94.5 94.0 93.5 93.0 92.5 MW19-6 93.88 TP 04-2 BH 04-4 TP 04-4 BH 04-1 TP19-9 TP 04-22 TP 04-19 BH 04-7 TP 04-6 TP 04-24 TP 04-23 TP19-6 TP19-8 TP 04-21 TP 04-20 TP19-7 TP 04-5 MW19-5 92.56 MW19-1 92.57 TP19-1 TP 04-3 TP19-18 MW04-6 MW19-2 TP19-17 TP19-19 BH 04-10 TP 04-16 TP 04-15 BH 04-19-N BH 04-19-SE TP 04-10 MW19-4 92.60 TP 04-17 TP 04-18 BH 04-19-SW TP 04-14 TP 04-13 BH 04-20-SE BH 04-20-N TP 04-9 BH 04-20-SW TP 04-11 TP 04-12 BH 04-21-N BH 04-21-SE MW 04-5 92.07 BH 04-21-SW

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
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SHEET: R18982503001FIG02.pdf
FILE: R18982503001.dwg

KEY MAP
NOT TO SCALE

- APPROXIMATE SUBJECT PROPERTY BOUNDARIES
- APPROXIMATE PROPERTY BOUNDARIES
- STRUCTURE
- FORMER FEATURES
- HISTORICAL EXCAVATIONS
- GRASSED AREA
- TRANSFORMER
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- MONITORING WELL LOCATION (2004, JW)
- BOREHOLE LOCATION (2004, JW)
- TEST PIT LOCATION (2004, JW)
- COMPOST SAMPLE LOCATION (2004, JW)
- MONITORING WELL LOCATION (XCG, JULY 2019)
- TEST PIT LOCATION (XCG, JULY 2019)
- GROUNDWATER CONTOURS (JULY 12, 2019)
- 92.60 GROUNDWATER ELEVATION (JULY 12, 2019)

N

0 20 40m

GROUNDWATER ELEVATIONS (JULY 12, 2019)

40 SIR JOHN A. MACDONALD BOULEVARD
KINGSTON, ONTARIO

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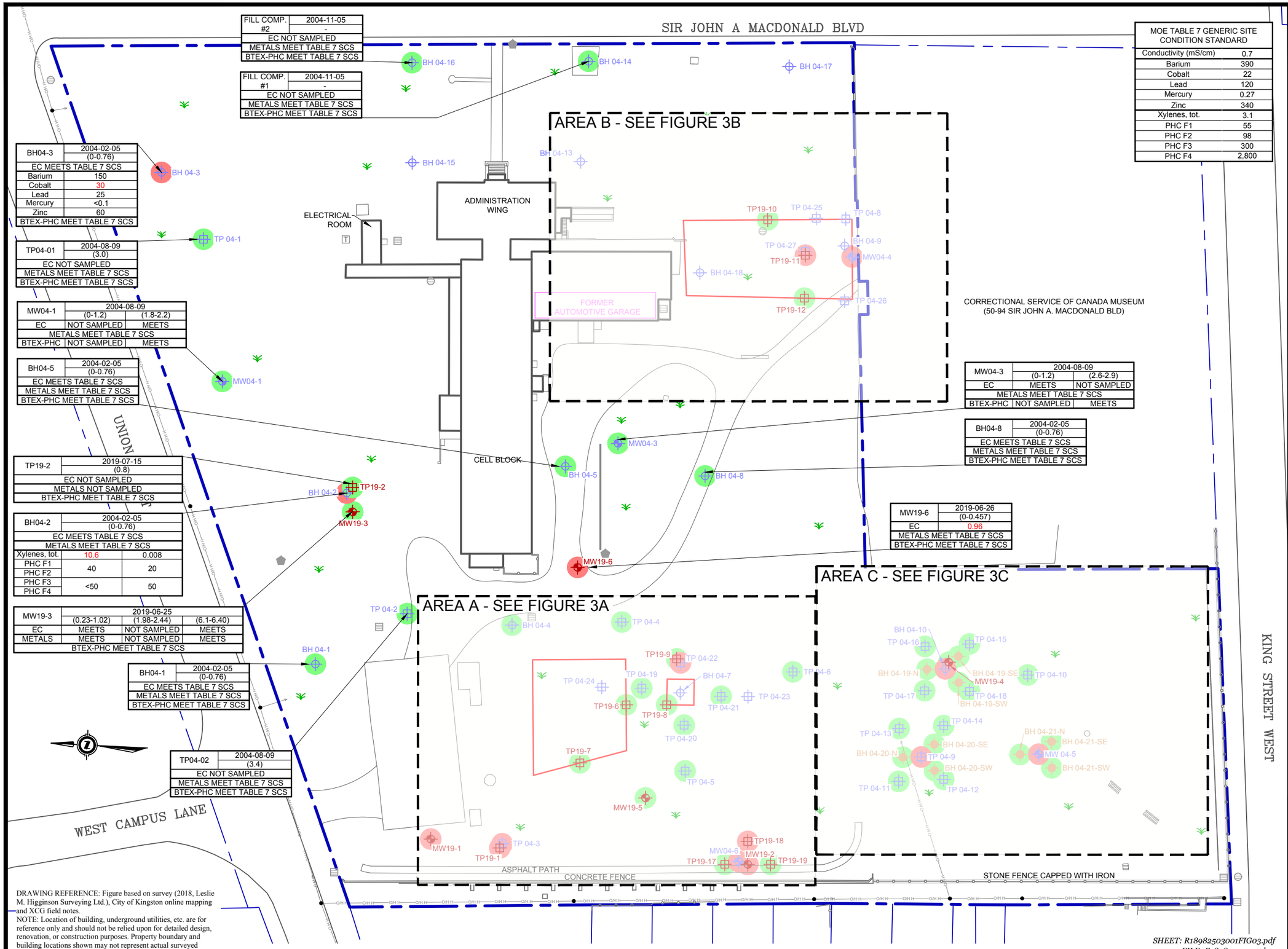
Environmental Engineers & Scientists

DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	2



FILL COMP. #2	2004-11-05
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

FILL COMP. #1	2004-11-05
-	
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

BH04-3	2004-02-05 (0-0.76)
EC MEETS TABLE 7 SCS	
Barium	150
Cobalt	30
Lead	25
Mercury	<0.1
Zinc	60
BTEX-PHC MEET TABLE 7 SCS	

TP04-01	2004-08-09 (3.0)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

MW04-1	2004-08-09	
	(0-1.2)	(1.8-2.2)
EC	NOT SAMPLED	MEETS
METALS MEET TABLE 7 SCS		
BTEX-PHC	NOT SAMPLED	MEETS

BH04-5	2004-02-05 (0-0.76)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

TP19-2	2019-07-15 (0.8)
EC NOT SAMPLED	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

BH04-2	2004-02-05 (0-0.76)	
EC MEETS TABLE 7 SCS		
METALS MEET TABLE 7 SCS		
Xylenes, tot.	10.6	0.008
PHC F1	40	20
PHC F2		
PHC F3	<50	50
PHC F4		

MW19-3	2019-06-25		
	(0.23-1.02)	(1.98-2.44)	(6.1-6.40)
EC	MEETS	NOT SAMPLED	MEETS
METALS	MEETS	NOT SAMPLED	MEETS
BTEX-PHC MEET TABLE 7 SCS			

BH04-1	2004-02-05 (0-0.76)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

TP04-02	2004-08-09 (3.4)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

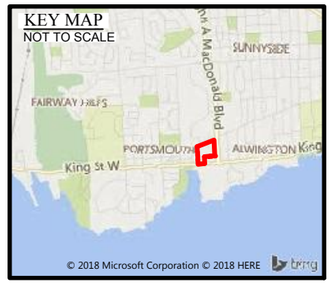
MW04-3	2004-08-09	
	(0-1.2)	(2.6-2.9)
EC	MEETS	NOT SAMPLED
METALS MEET TABLE 7 SCS		
BTEX-PHC	NOT SAMPLED	MEETS

BH04-8	2004-02-05 (0-0.76)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

MW19-6	2019-06-26 (0-0.457)
EC	0.96
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

MOE TABLE 7 GENERIC SITE CONDITION STANDARD	
Conductivity (mS/cm)	0.7
Barium	390
Cobalt	22
Lead	120
Mercury	0.27
Zinc	340
Xylenes, tot.	3.1
PHC F1	55
PHC F2	98
PHC F3	300
PHC F4	2,800

KEY MAP
NOT TO SCALE



- APPROXIMATE SUBJECT PROPERTY BOUNDARIES
- APPROXIMATE PROPERTY BOUNDARIES
- STRUCTURE
- FORMER FEATURES
- HISTORICAL EXCAVATIONS
- GRASSED AREA
- TRANSFORMER
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- MONITORING WELL LOCATION (2004, JW)
- BOREHOLE LOCATION (2004, JW)
- TEST PIT LOCATION (2004, JW)
- COMPOST SAMPLE LOCATION (2004, JW)
- MONITORING WELL LOCATION (XCG, JULY 2019)
- TEST PIT LOCATION (XCG, JULY 2019)
- ONE OR MORE RESULTS EXCEED MOECC TABLE 7 STANDARDS
- ALL RESULTS MEET MOECC TABLE 7 STANDARDS

NOTE: EXCAVATION SAMPLING LOCATIONS AND RESULTS CAN BE VIEWED ON FIGURES 3A AND 3B

BH04-2	2004-02-05 (0-0.76)	
Xylenes, tot.	10.6	0.008

SAMPLE LOCATION ID; SAMPLE DATE; SAMPLE DEPTH (mbgs); SAMPLE PARAMETER; SAMPLE RESULT (µg/g)

RED TEXT INDICATES RESULT EXCEEDS MOECC 2011 TABLE 7 STANDARDS

0 20 40m

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
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SHEET: R18982503001FIG03.pdf
FILE: R18982503001.dwg

EXCEEDANCES IN SOIL

40 SIR JOHN A. MACDONALD BOULEVARD
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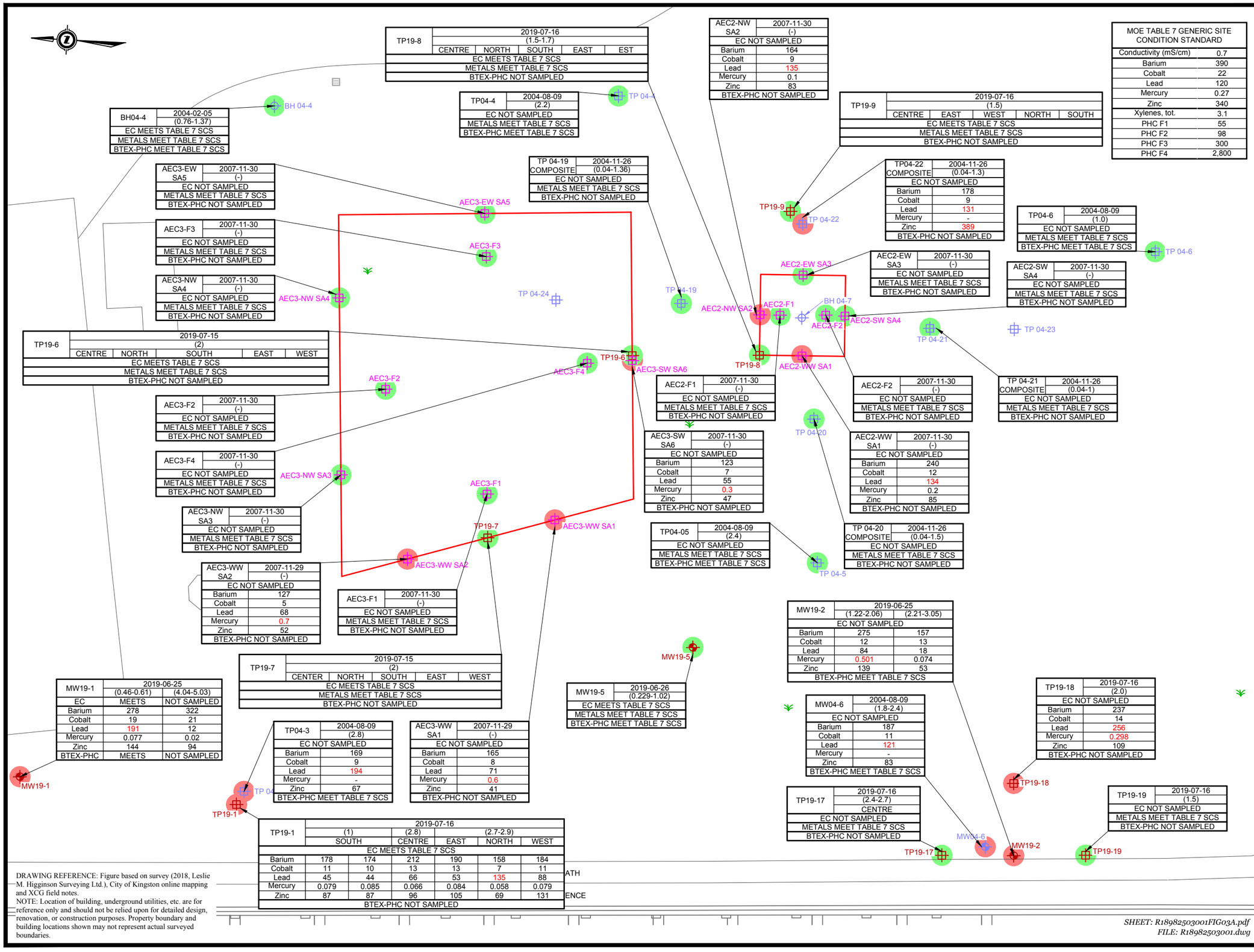
DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	3



DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
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AREA A
EXCEEDANCES IN SOIL

40 SIR JOHN A. MACDONALD BOULEVARD

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DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	3A

SHEET: R18982503001FIG03A.pdf
FILE: R18982503001.dwg

MOE TABLE 7 GENERIC SITE CONDITION STANDARD	
Conductivity (mS/cm)	0.7
Barium	390
Cobalt	22
Lead	120
Mercury	0.27
Zinc	340
Xylenes, tot.	3.1
PHC F1	55
PHC F2	98
PHC F3	300
PHC F4	2,800

TP19-11	2019-07-16 (1.2)				
	NORTH	SOUTH	WEST	EAST	CENTRE
EC NOT SAMPLED					
Barium	516	330	340	401	314
Cobalt	18	16	17	19	14
Lead	10	25	79	14	15
Mercury	0.019	0.038	0.058	0.017	0.022
Zinc	101	153	98	104	94
BTEX-PHC NOT SAMPLED					

TP19-10	2019-07-16 (0.8)					(1.5)
	NORTH	SOUTH	EAST	WEST	CENTRE	BOTTOM
EC NOT SAMPLED						
METALS MEET TABLE 7 SCS						
BTEX-PHC NOT SAMPLED						

AEC1-EW SA4	2007-12-21 (-)
EC NOT SAMPLED	
Barium	197
Cobalt	12
Lead	177
Mercury	0.1
Zinc	129
BTEX-PHC NOT SAMPLED	

AEC1-EW SA8	2007-12-21 (-)
EC NOT SAMPLED	
Barium	-
Cobalt	-
Lead	135
Mercury	-
Zinc	-
BTEX-PHC NOT SAMPLED	

AEC1-NW SA5	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

AEC1-NW SA6	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

MW04-4	2004-08-09 (0-1.2)	(1.4-1.8)
EC	MEETS	NOT SAMPLED
Barium	80	124
Cobalt	<5	5
Lead	79	152
Mercury	-	-
Zinc	40	79
BTEX-PHC	NOT SAMPLED	MEETS

AEC1-SW SA1	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS - ONLY TESTED FOR BERYLLIUM	
BTEX-PHC NOT SAMPLED	

AEC1-F1	2007-12-21 (-)
EC NOT SAMPLED	
Barium	566
Cobalt	14
Lead	14
Mercury	<0.1
Zinc	94
BTEX-PHC NOT SAMPLED	

AEC1-F3	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

AEC1-F2	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

AEC1-WW SA9	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

AEC1-WW SA7	2007-12-21 (-)
EC NOT SAMPLED	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

TP19-12	2019-07-16 (0.8)	(0.8)	(0.8)	(0.8)	(0.8)
	NORTH	SOUTH	CENTRE	EAST	WEST
EC NOT SAMPLED					
METALS MEET TABLE 7 SCS					
BTEX-PHC NOT SAMPLED					

BH 04-13
BH 04-18
BH 04-9
TP 04-25
TP 04-8
TP 04-27
TP 04-26
AEC1-EW SA3
AEC1-F4
AEC1-F2
AEC1-F3
AEC1-F1
AEC1-NW SA5
AEC1-NW SA6
AEC1-WW SA7
AEC1-WW SA2
AEC1-WW SA9
AEC1-SW SA1
TP19-10
TP19-11
TP19-12
MW04-4

FORMER
AUTOMOTIVE GARAGE

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
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KEY MAP
NOT TO SCALE

- APPROXIMATE SUBJECT PROPERTY BOUNDARIES
- APPROXIMATE PROPERTY BOUNDARIES
- STRUCTURE
- FORMER FEATURES
- HISTORICAL EXCAVATIONS
- GRASSED AREA
- TRANSFORMER
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- MONITORING WELL LOCATION (2004, JW)
- BOREHOLE LOCATION (2004, JW)
- TEST PIT LOCATION (2004, JW)
- COMPOST SAMPLE LOCATION (2004, JW)
- EXCAVATION TEST PIT LOCATION (2008, JW)
- MONITORING WELL LOCATION (XCG, JULY 2019)
- TEST PIT LOCATION (XCG, JULY 2019)
- ONE OR MORE RESULTS EXCEED MOECC TABLE 7 STANDARDS
- ALL RESULTS MEET MOECC TABLE 7 STANDARDS

SAMPLE LOCATION ID	SAMPLE DATE	
BH04-2	2004-02-05 (0-0.76)	SAMPLE DEPTH (mbgs)
Xylenes, tot.	10.6	0.008
SAMPLE PARAMETER		SAMPLE RESULT (µg/g)

RED TEXT INDICATES RESULT EXCEEDS MOECC 2011 TABLE 7 STANDARDS

0 5 10m

AREA B
EXCEEDANCES IN SOIL

40 SIR JOHN A. MACDONALD BOULEVARD
KINGSTON, ONTARIO

XCG
Environmental Engineers & Scientists

DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	3B

SHEET: R18982503001FIG03B.pdf
FILE: R18982503001.dwg

MOE TABLE 7 GENERIC SITE CONDITION STANDARD	
Conductivity (mS/cm)	0.7
Barium	390
Cobalt	22
Lead	120
Mercury	0.27
Zinc	340
Xylenes, tot.	3.1
PHC F1	55
PHC F2	98
PHC F3	300
PHC F4	2,800

MW19-4	2019-06-25 (0.61-1.12)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

BH04-10	2004-02-05 (0-0.76)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
Xylenes, tot.	<0.002
PHC F1	80
PHC F2	
PHC F3	1,700
PHC F4	

TP04-15 COMPOSITE	2004-11-26 (0.04-1)
EC NOT SAMPLED	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

TP04-16 COMPOSITE	2004-11-26 (0.04-1)
EC NOT SAMPLED	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

TP04-10	2004-08-09 (1.0)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

BH 04-19 COMPOSITE	2004-12-13 (0.04-0.76)
EC MEETS TABLE 7 SCS	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

TP04-17 COMPOSITE	2004-11-26 (0.04-1)
EC NOT SAMPLED	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

TP04-18 COMPOSITE	2004-11-26 (0.04-1)
EC NOT SAMPLED	
METALS NOT SAMPLED	
BTEX-PHC MEET TABLE 7 SCS	

TP 04-13 COMPOSITE	2004-11-30 (0.04-1)
EC MEETS TABLE 7 SCS	
METALS NOT SAMPLED	
BTEX-PHC NOT SAMPLED	

TP 04-14 COMPOSITE	2004-11-30 (0.04-0.85)
EC MEETS TABLE 7 SCS	
METALS NOT SAMPLED	
BTEX-PHC NOT SAMPLED	

MW04-5	2004-08-09 (0-0.6)
EC NOT SAMPLED	
Barium	162
Cobalt	8
Lead	132
Mercury	-
Zinc	119
BTEX-PHC MEET TABLE 7 SCS	

TP04-9	2004-08-09 (0.75)
EC	0.811
METALS MEET TABLE 7 SCS	
BTEX-PHC MEET TABLE 7 SCS	

BH 04-20 COMPOSITE	2004-11-30 (0.04-1.0)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

BH 04-21 COMPOSITE	2004-11-30 (0.04-0.6)
EC MEETS TABLE 7 SCS	
METALS MEET TABLE 7 SCS	
BTEX-PHC NOT SAMPLED	

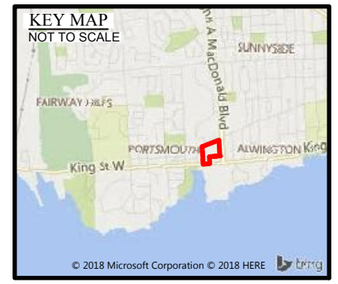
TP 04-11 COMPOSITE	2004-11-30 (0.04-0.80)
EC MEETS TABLE 7 SCS	
METALS NOT SAMPLED	
BTEX-PHC NOT SAMPLED	

TP 04-12 COMPOSITE	2004-11-30 (0.04-0.45)
EC MEETS TABLE 7 SCS	
METALS NOT SAMPLED	
BTEX-PHC NOT SAMPLED	

TP 04-16 TP 04-15 BH 04-19-SE MW19-4 BH 04-19 BH 04-19-N TP 04-10 BH 04-19-SW TP 04-17 TP 04-18 TP 04-13 TP 04-14 BH 04-20-SE BH 04-20-N TP 04-9 BH 04-20-SW TP 04-11 TP 04-12 BH 04-21-SE BH 04-21-N MW 04-5 BH 04-21-SW

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

KEY MAP
NOT TO SCALE



- APPROXIMATE SUBJECT PROPERTY BOUNDARIES
- APPROXIMATE PROPERTY BOUNDARIES
- STRUCTURE
- FORMER FEATURES
- HISTORICAL EXCAVATIONS
- GRASSED AREA
- TRANSFORMER
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- MONITORING WELL LOCATION (2004, JW)
- BOREHOLE LOCATION (2004, JW)
- TEST PIT LOCATION (2004, JW)
- COMPOST SAMPLE LOCATION (2004, JW)
- MONITORING WELL LOCATION (XCG, JULY 2019)
- TEST PIT LOCATION (XCG, JULY 2019)
- ONE OR MORE RESULTS EXCEED MOECC TABLE 7 STANDARDS
- ALL RESULTS MEET MOECC TABLE 7 STANDARDS

SAMPLE LOCATION ID	SAMPLE DATE	SAMPLE DEPTH (mbgs)
BH04-2	2004-02-05 (0-0.76)	
Xylenes, tot.	10.6	0.008
SAMPLE PARAMETER		SAMPLE RESULT (µg/g)

RED TEXT INDICATES RESULT EXCEEDS MOECC 2011 TABLE 7 STANDARDS

0 5 10m

AREA C
EXCEEDANCES IN SOIL

40 SIR JOHN A. MACDONALD BOULEVARD

KINGSTON, ONTARIO

XCG
Environmental Engineers & Scientists

DATE	JOB NO.	FIGURE NO.
DEC. 2019	1-898-25-03	3C

SHEET: R18982503001FIG03C.pdf
FILE: R18982503001.dwg

SIR JOHN A MACDONALD BLVD

KING STREET WEST

UNION STREET

WEST CAMPUS LANE

MOE TABLE 7 GENERIC SITE CONDITION STANDARD	
PHC F3	500

ADMINISTRATION WING

ELECTRICAL ROOM

CELL BLOCK

FORMER AUTOMOTIVE GARAGE

CORRECTIONAL SERVICE OF CANADA MUSEUM
(50-94 SIR JOHN A. MACDONALD BLD)

BH 04-1, BH 04-2, BH 04-3, BH 04-4, BH 04-5, BH 04-8, BH 04-9, BH 04-10, BH 04-13, BH 04-14, BH 04-15, BH 04-16, BH 04-17, BH 04-18

TP 04-1, TP 04-2, TP 04-3, TP 04-4, TP 04-5, TP 04-6, TP 04-8, TP 04-9, TP 04-10, TP 04-12, TP 04-13, TP 04-14, TP 04-15, TP 04-16, TP 04-17, TP 04-18, TP 04-19, TP 04-20, TP 04-21, TP 04-22, TP 04-23, TP 04-24, TP 04-25, TP 04-26, TP 04-27

TP19-1, TP19-2, TP19-6, TP19-7, TP19-8, TP19-9, TP19-10, TP19-11, TP19-12, TP19-17, TP19-18, TP19-19

MW04-1, MW04-3, MW04-4, MW04-5, MW04-6, MW19-1, MW19-2, MW19-3, MW19-4, MW19-5, MW19-6

BH 04-19-N, BH 04-19-SE, BH 04-19-SW, BH 04-20-N, BH 04-20-SE, BH 04-20-SW, BH 04-21-N, BH 04-21-SE, BH 04-21-SW, MW 04-5

MW04-1	2004-08-16 (2.80-4.22)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW04-4	2004-08-16 (2.20-5.18)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW04-3	2004-08-16 (3.50-4.93)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW19-6	2019-07-12 (2.13-5.18)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW19-4	2019-07-12	2019-08-02	2019-11-25
	(4.88-7.92)		
PHC F3	1,300	<400	<400

MW19-3	2019-07-12 (2.44-4.57)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW19-1	2019-07-12 (4.42-7.47)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

MW04-6	2004-08-16	2019-07-12	2019-12-11
	(3.50-6.35)		
PHC F3	672	<400	<400

MW04-5	2004-08-16 (1.90-7.84)
ALL GROUNDWATER PARAMETERS MET MOE TABLE 7 SCS	

ASPHALT PATH

CONCRETE FENCE

STONE FENCE CAPPED WITH IRON

DRAWING REFERENCE: Figure based on survey (2018, Leslie M. Higginson Surveying Ltd.), City of Kingston online mapping and XCG field notes.
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

KEY MAP
NOT TO SCALE

APPROXIMATE SUBJECT PROPERTY BOUNDARIES
APPROXIMATE PROPERTY BOUNDARIES
STRUCTURE
FORMER FEATURES
HISTORICAL EXCAVATIONS
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TEST PIT LOCATION (2004, JW)
COMPOST SAMPLE LOCATION (2004, JW)
MONITORING WELL LOCATION (XCG, JULY 2019)
TEST PIT LOCATION (XCG, JULY 2019)
ONE OR MORE RESULTS EXCEED MOECC TABLE 7 STANDARDS
ALL RESULTS MEET MOECC TABLE 7 STANDARDS

SAMPLE LOCATION ID	SAMPLE DATE	
MW19-4	2019-07-12 (4.88-7.92)	2019-08-02 (SCREENING INTERVAL (mbgs))
PHC F3	1,300	<400

SAMPLE PARAMETER
SAMPLE RESULT (µg/L)

RED TEXT INDICATES RESULT EXCEEDS MOECC 2011 TABLE 7 STANDARDS

0 20 40m

BTEX–PHCs EXCEEDANCES IN GROUNDWATER

40 SIR JOHN A. MACDONALD BOULEVARD
KINGSTON, ONTARIO

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DATE	JOB NO.	FIGURE NO.
DEC. 2019	1–898–25–03	4

SHEET: R18982503001FIG04.pdf
FILE: R18982503001.dwg

APPENDIX A
QUALIFICATIONS OF XCG PROJECT PERSONNEL

XCG
Environmental Engineers & Scientists

Kamin Paul, B.A.Sc., EIT

Project Specialist

Ms. Paul joined XCG in March 2019. Her areas of specialization include environmental site assessments (ESAs), water and soil sampling, compliance monitoring, and site supervision.

Education

- B.A.Sc., Honors Environmental Engineering, University of Windsor, 2016
- Continuing Education:
  - WHMIS
  - Wildlife Awareness Training
  - Argo Operator Safety Awareness Course
  - Alberta Stack Testing and Sampling
  - Emergency First Aid – Level A CPR and AED
  - OSHA 40-hour Hazardous Waste Operations & Emergency Response (HAZWOPER) (2019)
  - Working at Heights Training

Professional Affiliations

- Professional Engineers of Ontario Engineering Intern (EIT) Program

Project Experience

Environmental Site Assessments (ESAs)

- Conducted several Phase I ESAs for commercial and residential properties including apartment buildings, recreational centers, and commercial office buildings. The Phase I ESAs included site visits, a review of historical information related to the site and neighbouring properties, contacting regulatory authorities, and report preparation. Based on the Phase I ESAs, either no areas of potential concern were identified; or several areas of potential concern were identified, and Phase II ESAs were proposed.
- Assisted in the sampling, analysis and reporting of several Phase II ESAs including sites where a Record of Site Condition in accordance with O. Reg. 153/04 (as amended) was required. The Phase II ESAs included soil sampling either by test pits or boreholes, monitoring well installations, well development, site surveying, ground and surface water sampling, slug testing (where needed), review of analytical results, and report preparation. Based on the Phase II ESA, either the site was considered to meet the applicable standards, or a site remediation was proposed.
- Assisted in developing contaminant zone delineation for remediation work, based on Phase II ESA results.

Site Supervision

- Supervised the drilling and installation of monitoring wells on sites where Phase II ESAs were required.
- Assisted in supervision and sampling of test pit advancement where soil analysis was required.
- Supervised road, bridge, and water main installations, and water main sampling.

Compliance monitoring

- Compliance reporting (federal and provincial regulations) for the cement industry.
- Worked with and conducted site-specific operations approval reporting, and assisted in the preparation of approval renewals.
- Provided information in response to statements of concern from regulating bodies regarding new industrial projects.
- Conducted comprehensive analysis of industrial sites to determine common areas of exceedances and assisted in creating optimization plans to prevent further non-compliance.

XCG
Environmental Engineers & Scientists

Garnet Peters

Project Specialist

Mr. Peters joined XCG in July 2017 as a Project Specialist. He has experience in a variety of environmental areas such as ground and surface water sampling, rainwater tracking, parameter analysis, and stewardship. Mr. Peters has completed numerous soil and water sampling events for various clients, including Picton Terminals, BPE Development, and private contractors, as well as environmental assessments of shoreline properties at different lakes followed by implementation of erosion and runoff control measures for other employers. He has also been involved with Phase I and II Environmental Site Assessments (ESAs).

Education

- Degree in Environmental Studies and Geography, Queens University, 2014
- Diploma as an Environmental Technician, Sir Sandford Fleming College, 2015
- Continuing Education
  - Emergency First Aid & CPR Training – Level C, 2015
  - WHMIS, 2017

Project Experience

Soil and Water Remediation Projects

- Ongoing remediation of chlorinated solvent groundwater from a former dry-cleaning establishment using In-Situ Chemical Oxidation (ISCO), Kingston, Ontario.
- Involved in Groundwater delineation and elevation surveys at multiple locations, Kingston, Ontario.
- Supervised soil test pitting at a potentially contaminated site, Kingston, Ontario.
- Collected surface water samples adjacent to a salt storage facility, Picton, Ontario.
- Involved with confirmatory soil sampling after the excavation and removal of underground storage tanks, Nappanee, Ontario.
- Conducted low-flow groundwater monitoring and water levels at various sites.

Natalia Baranova, B.A.Sc., M.Sc., P.Eng.

Project Engineer

Ms. Baranova joined XCG in 2009 and is a Project Engineer in the Kingston office. She acquired her Masters in Science in 2017. Her area of specialization is contaminated site assessments including Phase I and II Environmental Site Assessments (ESAs), groundwater and soil remediation, groundwater monitoring, and Risk Assessments (RAs).

Education

- M.Sc. Earth and Environmental Sciences, 2017
- B.A.Sc. Honours Environmental Engineering, 2008
- Continuing Education
  - Risk Assessment of Contaminated Sites
  - Contaminated and Hazardous Waste Site Management
  - Using the Ministry of the Environment (MOE)'s Modified Generic Risk Assessment (MGRA) Tool

Project Experience

Environmental Site Assessment Experience

- Conducted Phase I ESAs for over 50 residential, commercial, and industrial properties. The ESAs were conducted to either CSA Z768-01 standard or Ontario Regulation (O. Reg.) 153/04 (as amended) requirements. The assessments included site visits, interviews, research and review of historical information, contacting regulatory authorities, development of conceptual site models, identification of potential contaminating activities and associated areas of actual or potential environmental concern, and report preparation.

Phase II Investigations and Remediation Experience

- Conducted Phase II ESAs for over 20 residential, commercial, and industrial properties. The ESAs were conducted to either CSA Z769-00 standard or O. Reg. 153/04 (as amended) requirements. The assessments included sampling plan design, cost estimates, subsurface investigations, data interpretation and analysis, conceptual site model development, and report preparation. Some of the contaminants of concern that were investigated included volatile organic compounds (VOCs), petroleum hydrocarbons (PHCs), metals, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).
- Supervised subsurface investigations, such as borehole drilling, monitoring well installations, and test pitting, collected soil samples for laboratory analysis, and recorded soil descriptions.
- Developed and sampled groundwater monitoring wells using a variety of sampling techniques (low-flow, foot-valve, bailer, and bladder pump).
- Conducted groundwater level monitoring and hydraulic conductivity tests.
- Collected sediment and surfaces water samples.
- Supervised excavation of contaminated soil including directing soil removal and completed confirmatory sampling to ensure complete removal of impacted material.

Petroleum Hydrocarbon Projects Experience

- Conducted Phase I and II ESAs, remediation and RAs on sites where PHCs and VOCs were contaminants of concern.
- Supervised fuel underground storage tank (UST) excavations, including collecting confirmatory soil and groundwater samples. Example projects include fuel oil UST removal at a multi-storey residential apartment building, fuel oil tank pulls at four Bell substations, and a fuel tank removal at a commercial property.
- Conducted Phase I and II ESA and remediation on a historical service station property in central Kingston prior to property redevelopment to residential use. Characterized and delineated hydrocarbon impacts in soil and groundwater and directed soil excavation activities to segregate hazardous and non-hazardous soil for disposal. Conducted post-remediation groundwater monitoring.

- Oversaw soil remediation at a commercial property contaminated as a result of a diesel fuel spill. The remediation consisted of delineation and excavation of impacted soil and collection of confirmatory soil samples. The contaminated soil was characterized for disposal and sent to an appropriate facility.
- Investigated downgradient groundwater impacts from a gasoline service station that migrated off-site to a residential property. The investigation included desktop documentation review, installation of monitoring wells, groundwater sampling and data analysis.

Kevin Shipley, M.A.Sc., P.Eng., EP(CEA), EP, QP_{RA}

Partner

Mr. Shipley joined XCG in March 1992. He is a Senior Environmental Engineer and Partner at XCG, and leads the corporate Remediation Group. He has experience in managing and conducting a wide variety of environmental engineering projects, including risk assessments (RA), Phase I and Phase II environmental site assessments (ESAs), hydrogeological investigations, soil and groundwater remediation projects and submission of Records of Site Condition (RSCs) for filing. He also has considerable experience with other types of projects, including environmental compliance audits, ISO 14001 audits and implementations, designated substances and hazardous materials surveys (DSHMS), hazardous materials and waste management projects, health and safety plan development and implementation, environmental assessments, and water and wastewater treatment projects. Mr. Shipley has worked on hundreds of projects, including ESAs, RAs, and remediation projects, involving petroleum hydrocarbon (PHC)-contaminated sites. Mr. Shipley is designated by the Ontario Ministry of the Environment (MOE) as a Qualified Person (QP) for purposes of conducting ESAs and RAs in accordance with Ontario Regulation (O. Reg.) 153/04.

Education

- M.A.Sc., Civil Engineering, University of Waterloo, 1986
- B.A.Sc., Civil Engineering, University of Waterloo, 1985

Professional Affiliations

- Registered Professional Engineer of Ontario
- Auditing Association of Canada, 1996
- Professional Engineer, 1989
- Environmental Professional Compliance Auditor [EP(CEA)], 1996
- Environmental Professional – Site Assessment and Reclamation [EP], formerly Certified Environmental Assessor of Sites [CEAS], 2003

Project Experience

Risk Assessment Projects

- Managed or conducted over 30 risk assessments addressing a wide range of contaminants in soil and groundwater, on sites that included old industrial sites, a former illegal landfill site, navigational aid facilities owned and operated by the federal Department of Fisheries and Oceans, schools, commercial properties, automotive maintenance facilities, manufacturing plants, and others. The majority of these sites had PHC contamination.
- Prepared and submitted for filing a RSC for a former industrial property used in the past for battery manufacturing and metal fabrication. XCG, under Mr. Shipley's direction as QP_{RA}, completed a Phase One ESA update, a Phase Two ESA, and a Tier 3 RA. This site had a variety of contaminants of concern, including PHCs. For this property, Mr. Shipley worked with the MOE to prepare a Certificate of Property Use (CPU). This RSC was successfully filed on the MOE Brownfields Environmental Site Registry.
- Prepared and submitted for filing a RSC for a commercial property that was to be converted for a multi-unit residential use. XCG, under Mr. Shipley's direction as QP_{RA}, completed a Phase One ESA update, a Phase Two ESA, and a Modified Generic Risk Assessment (MGRA). Mr. Shipley worked with the MOE to prepare a CPU. This RSC was successfully filed on the MOE Brownfields Environmental Site Registry.
- Acted as QP_{RA} for a risk assessment of a former aluminum casting alloy facility in Toronto. The contaminants of concern for this risk assessment included PHCs, metals, and polycyclic aromatic hydrocarbons (PAHs). On the basis of the RA and subsequent remediation, a RSC was filed for this property.
- Managed and acted as QP_{RA} for a project at a former ship building and dry dock waterfront site contaminated with PHCs, including free product hydrocarbons, as well as metals, PAHs, and volatile organic compounds (VOCs). Completed Phase One and Two ESAs, a soil vapour investigation, and a RA.

- Managed and acted as QP$_{RA}$ for a project at a former industrial property on the Kingston waterfront, used in the past as a grain elevator and then later for a salvage operation, that was contaminated with PHCs, metals, and PAHs. Completed Phase One and Two ESAs and a RA.
- Managed, acted as QP$_{RA}$, and/or provided senior quality assurance review for many other risk assessment projects involving a variety of different contaminants and hydrogeological settings. The majority of these sites had PHCs as contaminants of concern.

Environmental Site Assessment Projects

- Managed over 200 Phase I and II ESAs of Department of Fisheries and Oceans facilities, including small craft harbors, light houses, other navigational aids, gauging stations, and coast guard stations. Most of these projects required enhanced Phase I ESAs, involving sampling of sediment, soil, and building materials, and compliance auditing.
- Participated in a project for a major bank, requiring the completion of Phase I ESAs on approximately 90 industrial, commercial, and residential properties located in Ontario and in other parts of Canada.
- In addition to the above, Mr. Shipley has completed or managed over 1,000 Phase One and Phase Two ESAs of heavy industrial, light industrial, commercial, institutional, and residential facilities, including metal fabricators, foundries, tanneries, aluminum processing/fabricating plants, industrial distribution facilities, crane and conveyor manufacturers, former furniture factories, agricultural operations, such as farms and hatcheries, auto parts operations, waste processing and recycling facilities, auto body shops, railway and road rights-of-way, municipal works yards, maintenance garages, commercial buildings, apartment buildings, restaurants, health care facilities, existing and former service stations, movie theatres, and many others. The majority of these sites had PHCs as contaminants of concern.
- Prepared and submitted for filing RSCs for approximately 20 commercial and residential sites that had been the subject of Phase One and/or Phase Two ESAs completed by XCG under Mr. Shipley's direction. These RSCs were successfully filed on the MOE Brownfields Environmental Site Registry. The majority of these sites had PHCs as contaminants of concern.

Soil and Groundwater Remediation Projects

- Managed a project for Public Works and Government Services Canada requiring the remediation of contaminated sediments in the Kingston Dry Dock. This project involved the removal of contaminated sediment from the bottom of the Kingston Dry Dock using a wet removal method and processing the sediment through polymer addition, mixing and dewatering using a filter press.
- Coordinated the decommissioning of a manufacturing plant that had been in use since the 1930s for the production of agricultural equipment, shells and other ammunition, steel office furniture, and other products. This site had extensive PHC contamination that was remediated under Mr. Shipley's direction. Groundwater containing elevated concentrations of a number of chemicals used in industrial degreasing solvents (including trichloroethylene) was found in an aquifer beneath the above site. A risk assessment was conducted to evaluate the risk to down-gradient municipal drinking water supply wells. Mr. Shipley managed the installation and operation of a pump-and-treat system, involving an advanced oxidation process (AOP) UV/oxidation unit, to address the groundwater impact.
- Managed a project at a commercial plaza involving the use of potassium permanganate sub-surface injections to chemically oxidize perchloroethylene contamination arising from the presence of a former dry cleaning operation on the property.
- Prepared and submitted for filing RSCs for approximately ten different industrial, commercial and residential properties that had been the subject of Phase One and Two ESAs and soil and groundwater remediation projects completed by XCG under Mr. Shipley's direction. These RSCs were successfully filed on the MOE Brownfields Environmental Site Registry. The majority of these sites had PHCs as contaminants of concern.
- Managed the decommissioning and remediation projects at many other sites, including former automotive maintenance facilities, municipal works yards, former industrial facilities, former service stations, institutions such as correctional facilities, residential properties with former underground heating oil tanks, and many others. The majority of these sites had PHCs as contaminants of concern.

APPENDIX B
TEST PIT AND BOREHOLE LOGS

XCG Consulting Ltd.
100-4 Cataraqui Street
Kingston, Ontario
K7K 1Z7
(613) 542-5888

BORING NUMBER MW19-1

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/25/19 **COMPLETED** 06/25/19
GROUND ELEVATION 98.54 m **HOLE SIZE** 0.15m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY NB **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
							Casing Type: Stick up
	SS 1	3-2-3-7 (5)	PID = 7.2		0.15 Brown, moist, sandy TOPSOIL, no odour, no staining.	98.39	
			PID = 7		Dark brown, wet, SILT, trace medium sand, trace fine gravel, trace organic matter. trace coal in bottom 0.15m, no odour, no staining.		
					0.61	97.93	
1	SS 2	4-6-6-3 (12)	PID = 8.6		Brown, moist to wet CLAY and SAND and GRAVEL, trace coal, trace brick, medium dense, mushroom/forest floor odour, no staining.		
					1.22	97.32	
	SS 3	5-8-6-10 (14)	PID = 12.3		Grey to brown SILTY SAND and gravel, trace brick, loose, no odour, no staining.		
					1.83	96.71	
2					1.91	96.63	
	SS 4	11-5-3-3 (8)	PID = 6.4		2.03 Grey to brown SILTY SAND and gravel, trace brick, loose, no odour, no staining.	96.51	← Bentonite (0 - 3.96 mbgs)
					Light brown, medium grained SAND and gravel, trace brick debris, poorly graded.		
	SS 5	2-2-4-6 (6)			Brown, moist, CLAYEY SILT, some gravel, trace coal and brick, soft, medium plasticity, plasticity increasing with depth, no odour, no staining.		
3					3.05	95.49	
	SS 6	4-2-11-5 (13)	PID = 4.6		Brown, wet, SILTY CLAY, some gravel, trace coal, soft, medium plasticity, plasticity increasing with depth, no odour, no staining.		
					3.66	94.88	
	SS 7	1-1-2-3 (3)	PID = 2.7		Brown, moist, SILTY CLAY, trace coal, trace brick debris, medium stiff, low plasticity, no odour, no staining.		
4					4.04	94.50	
	SS 8	8-9-12-16 (21)	PID = 3.9		Light brown, moist, CLAYEY SILT, soft to medium stiff, low plasticity, dark brown mottling, no odour, no staining.		
					with some medium to coarse sand beet red mottling, below 4.27 mbgs		
5					5.03	93.51	
	AU 9				Light brown, moist to wet, SANDY SILT, some clay, trace coase sand, medium stiff, medium plasticity, rusty mottling, water in clay cracks, no odour, no staining.		
	SS 10	3-6-4-4 (10)	PID = 1.8				← Sand pack (3.96 - 7.47 mbgs)
6					6.10	92.44	← Screen (4.42 - 7.47 mbgs)
	AU 11				Augered through similar material as above to 7.47m where water was encountered.		
7					7.47	91.07	

Bottom of hole at 7.47 m.

XCG Consulting Ltd.
100-4 Cataraqui Street
Kingston, Ontario
K7K 1Z7
(613) 542-5888

BORING NUMBER MW19-2

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/25/19 **COMPLETED** 06/26/19
GROUND ELEVATION 98.45 m **HOLE SIZE** 0.15/0.10m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY NB **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Casing Type: Stick up
	SS 1	2-2-5-6 (7)	PID = 2.1		0.30 (98.15) Light brown, dry to moist, sandy TOPSOIL with some roots, no odour, no staining.	
			PID = 2.2		Brown, moist, CLAYEY SILT with trace fine to medium gravel, trace coal debris, trace porcelain, very stiff, non-plastic, no odour, no staining.	
1	SS 2	4-4-6-10 (10)	PID = 2.3		Thin sandy seam at 0.91m.	
					1.22 (97.23) Brown, moist, CLAYEY SILT trace coarse sand, trace brick, trace coal, trace gravel, soft, medium plasticity, no odour, no staining.	
	SS 3	2-1-1-8 (2)	PID = 2.9			
2	SS 4	12-2-5-3 (7)			2.06 (96.39) 2.21 (96.24) Grey, SAND and GRAVEL, medium to coarse sand, fine to coarse gravel, dense, angular, no odour, no staining.	Bentonite (0 - 4.42 mbgs)
	SS 5	3-3-3-16 (6)	PID = 2.2		Brown, moist, SILTY CLAY (suspected native), trace medium to coarse sand, trace fine to coarse gravel, trace wood-derived, soft charcoal, no odour, no staining, natural dark brown mottling.	
3					3.05 (95.40) Likely SILTSTONE bedrock encountered.	
					(Bedrock drilled using Air Hammer tools; Rock type inferred from rock dust)	
4						
					Void encountered at 5.33m.	
5					Void encountered at 5.79	
6						Sand pack (4.42 - 7.82 mbgs)
						Screen (4.78 - 7.82 mbgs)
7					7.82 (90.63)	

Bottom of hole at 7.82 m.

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BORING NUMBER MW19-3

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/25/19 **COMPLETED** 06/25/19
GROUND ELEVATION 99.255 m **HOLE SIZE** 0.15m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY NB **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Casing Type: Stick up
	SS 1	3-15-8-8 (23)	PID = 13.8		0.23 Brown, moist, sandy TOPSOIL, trace gravel, plant matter, and fine-medium sand, medium dense, poorly graded, no odour, no staining. 99.03	
			PID = 15		0.61 Grey, moist SAND with some gravel, trace coal and brick debris, fine-medium sand, dense, no odour, no staining. 98.65	
1	SS 2	5-7-5-4 (12)	PID = 13.3		Grey, moist, SAND and GRAVEL, medium coarse sand, fine gravel, dense, no odour, no staining. 1.22 98.04	Bentonite (0-2.29 mbgs)
	SS 3	3-4-4-6 (8)	PID = 11.3		Brown, moist, SANDY SILT, medium stiff, low plasticity, no odour, no staining. 1.83 97.43	
2	SS 4	5-10-7-17 (17)	PID = 12.3		1.98 Dark brown, moist, SILTY CLAY, trace medium-coarse sand and gravel, medium stiff, high plasticity, no odour, no staining. 97.28	
			PID = 12.2		Brown, moist, CLAY, trace medium to coarse sand (sand content increasing with depth), medium stiff, high plasticity, trace orange mottling, trace beet red streaking, no odour, no staining.	
3	SS 5	6-6-9-13 (15)	PID = 11.8		3.05 96.21	
	SS 6	7-15-30-21 (45)	PID = 7.9		Coarse sand seam at 2.79m.	Sand pack (2.29 - 4.57 mbgs)
	SS 7	8-37	PID = 6.7		3.66 Brown, wet, CLAYEY SILT, trace fine gravel and medium-coarse sand, soft, medium plasticity, trace orange mottling, no odour, no staining. 95.60	Screen (2.44 - 4.57 mbgs)
4	AU 8				Brown, wet, SANDY SILT, medium to coarse sand, fine gravel, soft, low plasticity, orange and beet red mottling, no odour, no staining. 4.57 94.69	

Bottom of hole at 4.57 m.

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BORING NUMBER MW19-4

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/25/19 **COMPLETED** 06/25/19
GROUND ELEVATION 100.215 m **HOLE SIZE** 0.15/0.10m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY NB **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Casing Type: Stick up
	SS 1	2-1-6-6 (7)	PID = 5.1		Brown, dry to moist, TOPSOIL with fine sand, trace rootlets, trace fine gravel, trace coal debris, trace brick debris, dense, no odour, no staining.	
					0.61 / 99.61	
1	SS 2	2-2-6-28/0.08	PID = 11.8		Brown, moist, CLAYEY SILT, trace coarse sand and fine gravel, trace coal and rootlets, stiff, no odour, no staining.	
					1.12 / 99.10	
	AU 3				1.14 / 99.08 Grey, crushed LIMESTONE bedrock.	
2					LIMESTONE bedrock, fresh, fractured. (Bedrock drilled using Air Hammer tools; Rock type inferred from rock dust)	Bentonite (0 - 4.57 mbgs)
3						
4		4				
5						
6						Sand pack (4.57 - 7.92 mbgs)
7						Screen (4.88 - 7.92 mbgs)
					7.92 / 92.30	

Bottom of hole at 7.92 m.

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BORING NUMBER MW19-5

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/26/19 **COMPLETED** 06/26/19
GROUND ELEVATION 98.6 m **HOLE SIZE** 0.15/0.10m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY KPP **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Casing Type: Stick up
	SS 1	3-4-5-7 (9)	PID = 16.2		0.23 Brown, dry, sandy TOPSOIL with medium to coarse sand and trace organic matter, no odour, no staining. 98.37	
					Dark brown, moist, CLAYEY SILT with coarse sand, trace gravel, trace organic matter, trace coal, trace brick, medium stiff to stiff, low plasticity, no odour or staining.	
			PID = 14.8			
1	SS 2	5-9-10-5 (19)			1.02 97.58	
			PID = 10.1		1.14 97.46	
			PID = 19.5		1.22 Gravel and coal content increases with depth. 97.38	
	SS 3	5-7-6-7 (13)			Brown, moist, gravelly SAND, no staining, no odour.	
			PID = 22		Brown, moist, SAND with some clay and some fine gravel, loose.	Bentonite (0 - 3.20 mbgs)
2					1.83 96.77	
	SS 4	11-5-4-6 (9)			Grey-brown, moist FILL material with sand, clay and gravel, loose.	
					Suspected loose gravel.	
					2.44 96.16	
	SS 5	2-2-5 (7)	PID = 20.1		Brown, moist, SILTY CLAY, trace gravel, trace coal and trace brick, soft.	
3					2.87 95.73	
					Refusal at bedrock.	
					SANDSTONE	
					3.20 95.40	
					(Bedrock drilled using Air Hammer tools; Rock type inferred from rock dust)	
					LIMESTONE	
4						
					4.27 94.33	
					SANDSTONE	
					4.70 93.90	
					LIMESTONE	Sand pack (3.20 - 6.32 mbgs)
5						Screen (3.28 - 6.32 mbgs)
6						
					6.32 92.28	

Bottom of hole at 6.32 m.

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BORING NUMBER MW19-6

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 06/26/19 **COMPLETED** 06/26/19
GROUND ELEVATION 99.02 m **HOLE SIZE** 0.15m
DRILLING CONTRACTOR G.E.T Drilling
GROUND WATER LEVELS:
DRILLING METHOD CME55
AT TIME OF DRILLING ---
LOGGED BY KPP **CHECKED BY** NB
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Casing Type: Stick up
	SS 1	18-18-4	PID = 13.1		Grey, dry, SAND and GRAVEL, trace brick, trace medium to coarse sand and trace fine gravel, no odour, no staining.	
					0.46 — 98.56	
					Grey and brown, moist SILT with gravel, medium plasticity, soft, no odour, no staining.	
					0.61 — 98.41	
1	SS 2	3-3-4-4 (7)	PID = 7.8		Brown, SILTY CLAY with debris, no odour, no staining.	Bentonite (0 - 1.83 mbgs)
					1.22 — 97.80	
	SS 3	3-4-4-5 (8)	PID = 12.8		Brown, moist, SILTY CLAY, trace debris, low plasticity, no odour, no staining.	
					1.83 — 97.19	
2	SS 4	3-3-5-5 (8)	PID = 9		Brown, moist, SILTY CLAY, trace debris, low plasticity, crumbly, orange and beet red mottling, no odour, no staining.	
					2.44 — 96.58	
	SS 5	4-6-7-7 (13)	PID = 5.9		Brown, moist, SILTY SAND with trace gravel, medium plasticity, no odour, no staining.	
3					Increasing moisture with depth,	
					3.05 — 95.97	
	SS 6	6-12-25-30/0.08	PID = 5.7		Brown, moist, SANDY SILT with some medium gravel, trace quartz, trace plant based charcoal, soft to stiff, trace beet red and orange clay mottling, no odour, no staining.	Sand pack (1.83 - 5.18 mbgs)
					3.58 — 95.44	Screen (2.13 - 5.18 mbgs)
4	AU				LIMESTONE with sandstone layers. (Bedrock drilled using Air Hammer tools; Rock type inferred from rock dust)	
5					5.18 — 93.84	

Bottom of hole at 5.18 m.

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TEST PIT NUMBER TP19-1

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/15/19 **COMPLETED** 07/15/19
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Dry, SILTY SAND with gravel, cobbles and boulders, trace brick and coal, loose fill between rocks. No odour or staining.	
					1.00	
					Centre: Dark brown, moist CLAY with gravel, high plasticity, soft. East and West: Brown, moist SILTY CLAY with trace brick and coal, medium plasticity. No odour or staining. Black staining on East wall. No odour. (1.2m) North: Brown, moist CLAYEY SILT with some sand, gravel, cobbles and boulder. No odour or staining. South East: Brown, moist SILTY CLAY with gravel, cobbles and boulders, trace brick and coal debris. No odour or staining.	
2						
	GB 2				2.90	
					Bottom of test pit at 2.90 m.	

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TEST PIT NUMBER TP19-10

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Brown, dry SAND with clay, no odour or staining.	
2	GB 2				2.60	

Bottom of test pit at 2.60 m.

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TEST PIT NUMBER TP19-11

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1 GB 2				Brown, dry SILTY SAND with trace boulders, wires and rebar. No odour or staining. 1.50 Bottom of test pit at 1.50 m.	

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TEST PIT NUMBER TP19-12

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Brown, dry SILTY SAND.	
	GB 2				1.50 Bottom of test pit at 1.50 m.	

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TEST PIT NUMBER TP19-17

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Dark brown, moist SANDY SILT with clay, dark grey and orange patches. No odour.	
2					2.70 Bottom of test pit at 2.70 m.	

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TEST PIT NUMBER TP19-18

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1					Dark brown, dry, SILTY SAND with gravel and pieces of brick, dense.	
2	GB 1				2.00 Bottom of test pit at 2.00 m.	

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TEST PIT NUMBER TP19-19

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Brown, moist, SILTY SAND with clay. Orange and dark grey staining, no odour.	
2					2.80	

Bottom of test pit at 2.80 m.

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TEST PIT NUMBER TP19-2

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/15/19 **COMPLETED** 07/15/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					0.10 Brown, dry, TOPSOIL, sand with gravel. No odour or staining.	
					Grey, GRAVEL with SAND, dry. No odour or staining.	
					0.30 Brown, dry, CLAY, very dense, low plasticity. No odour or staining.	
1	GB 1					
2					2.30	
	GB 2				Bottom of test pit at 2.30 m.	

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TEST PIT NUMBER TP19-6

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/15/19 **COMPLETED** 07/15/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1					Brown, dry SAND with GRAVEL, cobbles and boulders encountered, loose.	
2	GB 1				2.00 Grey, moist, CLAY, low plasticity. Likely native clay.	
	GB 2				2.30 Bottom of test pit at 2.30 m.	

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TEST PIT NUMBER TP19-7

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/15/19 **COMPLETED** 07/15/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Brown, dry SAND with GRAVEL, some cobbles and bricks.	
2	GB 2				2.00 Brown, moist SILTY CLAY with some cobbles and boulders. Fill material.	
					2.40 Bottom of test pit at 2.40 m.	

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TEST PIT NUMBER TP19-8

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Brown, dry SILTY SAND with some clay. Some orange and dark brown staining, no odour.	
					1.70 Bottom of test pit at 1.70 m.	

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TEST PIT NUMBER TP19-9

CLIENT ABNA Investments
PROJECT NAME Phase II ESA
PROJECT NUMBER 1-898-25-03
PROJECT LOCATION 40 Sir John A MacDonald Boulevard, Kingston
DATE STARTED 07/16/19 **COMPLETED** 07/16/19
GROUND ELEVATION **TEST PIT SIZE**
EXCAVATION CONTRACTOR Doornekamp Construction Ltd.
GROUND WATER LEVELS:
EXCAVATION METHOD CAT305.5E2
AT TIME OF EXCAVATION ---
LOGGED BY GP **CHECKED BY** KPP
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
1	GB 1				Medium brown, dry SILTY SAND with clay, cinderblock encountered. Orange and grey staining, no odour.	
					1.50 Bottom of test pit at 1.50 m.	

APPENDIX C
LABORATORY CERTIFICATES OF ANALYSIS

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	02-Jul-19/O	7.77		7.89	7.67
Conductivity @25°C	mS/cm	0.001	SM 2510B	02-Jul-19/O	0.42		0.15	0.153
Chloride	µg/g	5	SM4110C	03-Jul-19/O	29		27	26
Sodium Adsorption Ratio	units		SM 3120	27-Jun-19/O	1.82		0.212	0.380
Antimony	µg/g	0.5	EPA 6020	28-Jun-19/O	0.8	0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	28-Jun-19/O	4.9	4.7	4.5	4.6
Barium	µg/g	1	EPA 6010	28-Jun-19/O	278	275	154	132
Beryllium	µg/g	0.2	EPA 6010	28-Jun-19/O	1.0	0.7	0.5	0.5
Boron	µg/g	0.5	EPA 6010	28-Jun-19/O	13.8	14.4	16.6	16.9
Boron (HWS)	µg/g	0.02	MOE3470	27-Jun-19/O	0.25	0.28	0.23	0.23
Cadmium	µg/g	0.5	EPA 6010	28-Jun-19/O	< 0.5	0.7	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	28-Jun-19/O	44	91	19	18
Chromium (VI)	µg/g	0.2	EPA7196A	28-Jun-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	28-Jun-19/O	19	12	9	9
Copper	µg/g	1	EPA 6010	28-Jun-19/O	39	77	25	27
Lead	µg/g	5	EPA 6010	28-Jun-19/O	191	84	83	63

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON™ ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (i)**

Report To:

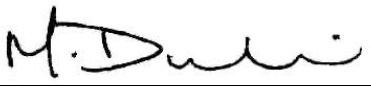
XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Mercury	µg/g	0.005	EPA 7471A	28-Jun-19/O	0.077	0.501	0.050	0.057
Molybdenum	µg/g	1	EPA 6010	28-Jun-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	28-Jun-19/O	33	23	18	18
Selenium	µg/g	0.5	EPA 6020	28-Jun-19/O	0.8	0.8	0.6	0.6
Silver	µg/g	0.2	EPA 6010	28-Jun-19/O	< 0.2	4.1	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.3	0.2	0.3	0.3
Uranium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.7	0.6	0.4	0.4
Vanadium	µg/g	1	EPA 6010	28-Jun-19/O	56	40	23	21
Zinc	µg/g	3	EPA 6010	28-Jun-19/O	144	139	65	57



Michelle Dubien
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	02-Jul-19/O	7.36			
Conductivity @25°C	mS/cm	0.001	SM 2510B	02-Jul-19/O	0.23			
Chloride	µg/g	5	SM4110C	03-Jul-19/O	27			
Sodium Adsorption Ratio	units		SM 3120	27-Jun-19/O	0.146			
Antimony	µg/g	0.5	EPA 6020	28-Jun-19/O	< 0.5			
Arsenic	µg/g	0.5	EPA 6020	28-Jun-19/O	3.7			
Barium	µg/g	1	EPA 6010	28-Jun-19/O	207			
Beryllium	µg/g	0.2	EPA 6010	28-Jun-19/O	1.0			
Boron	µg/g	0.5	EPA 6010	28-Jun-19/O	15.6			
Boron (HWS)	µg/g	0.02	MOE3470	27-Jun-19/O	0.27			
Cadmium	µg/g	0.5	EPA 6010	28-Jun-19/O	< 0.5			
Chromium	µg/g	1	EPA 6010	28-Jun-19/O	36			
Chromium (VI)	µg/g	0.2	EPA7196A	28-Jun-19/O	< 0.2			
Cobalt	µg/g	1	EPA 6010	28-Jun-19/O	15			
Copper	µg/g	1	EPA 6010	28-Jun-19/O	23			
Lead	µg/g	5	EPA 6010	28-Jun-19/O	47			

Michelle Dubien
Lab Manager

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WATERWORKS NO.

			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Mercury	µg/g	0.005	EPA 7471A	28-Jun-19/O	0.104			
Molybdenum	µg/g	1	EPA 6010	28-Jun-19/O	< 1			
Nickel	µg/g	1	EPA 6010	28-Jun-19/O	29			
Selenium	µg/g	0.5	EPA 6020	28-Jun-19/O	0.8			
Silver	µg/g	0.2	EPA 6010	28-Jun-19/O	< 0.2			
Thallium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.2			
Uranium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.5			
Vanadium	µg/g	1	EPA 6010	28-Jun-19/O	42			
Zinc	µg/g	3	EPA 6010	28-Jun-19/O	72			

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

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Michelle Dubien
Lab Manager

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Final Report

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DATE RECEIVED: 25-Jun-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/g	0.5	EPA 8260	27-Jun-19/R		< 0.5		
Benzene	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Bromoform	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Bromomethane	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Carbon Tetrachloride	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Chloroform	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dibromochloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichlorobenzene,1,2-	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dichlorobenzene,1,3-	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dichlorobenzene,1,4-	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dichlorodifluoromethane	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dichloroethane,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloroethane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloroethylene,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		

Michelle Dubien
Lab Manager

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Final Report

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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloroethene, trans-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloropropane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Ethylbenzene	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Hexane	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Methyl Ethyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R		< 0.5		
Methyl Isobutyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R		< 0.5		
Methyl-t-butyl Ether	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Dichloromethane (Methylene Chloride)	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Styrene	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		

Michelle Dubien
Lab Manager

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DATE RECEIVED: 25-Jun-19
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JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Tetrachloroethane,1,1,2,2-	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Tetrachloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Toluene	µg/g	0.2	EPA 8260	27-Jun-19/R		< 0.2		
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Trichloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R		< 0.05		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	27-Jun-19/R		< 0.02		
Xylene, m,p-	µg/g	0.03	EPA 8260	27-Jun-19/R		< 0.03		
Xylene, o-	µg/g	0.03	EPA 8260	27-Jun-19/R		< 0.03		
Xylene, m,p,o-	µg/g	0.03	EPA 8260	27-Jun-19/R		< 0.03		
PHC F1 (C6-C10)	µg/g	10	CWS Tier 1	27-Jun-19/R	< 10	< 10	< 10	< 10
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	27-Jun-19/K	< 6 [1]	< 5	< 5	< 5
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10	14	< 10	< 10
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10	< 10	< 10	< 10

Michelle Dubien
Lab Manager

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			Client I.D.		MW19-1 6"-2'	MW19-2 4'-6'9"	MW19-3 9"-3'4"	MW19-3 20'-21'
			Sample I.D.		B19-18946-1	B19-18946-2	B19-18946-3	B19-18946-4
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	25-Jun-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
% moisture	%			26-Jun-19/R	21.9	17.3	9.4	9.6

1. Note: Elevated MDL due to high % moisture.

Michelle Dubien
Lab Manager

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			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/g	0.5	EPA 8260	27-Jun-19/R	< 0.5			
Benzene	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromodichloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromoform	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromomethane	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Carbon Tetrachloride	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Chloroform	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dibromochloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichlorobenzene,1,2-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorobenzene,1,3-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorobenzene,1,4-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorodifluoromethane	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichloroethane,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethylene,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			

Michelle Dubien
Lab Manager

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			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethene, trans-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene 1,3-cis+trans	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Ethylbenzene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Hexane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Methyl Ethyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R	< 0.5			
Methyl Isobutyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R	< 0.5			
Methyl-t-butyl Ether	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichloromethane (Methylene Chloride)	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Styrene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON™ ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Tetrachloroethane,1,1,2,2-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Tetrachloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Toluene	µg/g	0.2	EPA 8260	27-Jun-19/R	< 0.2			
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Trichloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Trichlorofluoromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Vinyl Chloride	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Xylene, m,p-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			
Xylene, o-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			
Xylene, m,p,o-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			
PHC F1 (C6-C10)	µg/g	10	CWS Tier 1	27-Jun-19/R	< 10			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	27-Jun-19/K	< 5			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10			

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (ii)**

Report To:

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4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-4 2'-3'8"			
			Sample I.D.		B19-18946-5			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
% moisture	%			26-Jun-19/R	23.2			

1. Note: Elevated MDL due to high % moisture.

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON™ ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (iii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3 9"-3'4"	MW19-3 20'-21'	MW19-4 2'-3'8"	
			Sample I.D.		B19-18946-3	B19-18946-4	B19-18946-5	
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acenaphthene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Acenaphthylene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Anthracene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Benzo(a)anthracene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Benzo(b+k)fluoranthene	µg/g	0.05	EPA 8270	28-Jun-19/K	0.06	< 0.05	< 0.05	
Benzo(g,h,i)perylene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Chrysene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Fluoranthene	µg/g	0.05	EPA 8270	28-Jun-19/K	0.06	< 0.05	< 0.05	
Fluorene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Methylnaphthalene,1-	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Methylnaphthalene,2-	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-18946 (iii)**

Report To:

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Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Jun-19
DATE REPORTED: 04-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3 9"-3'4"	MW19-3 20'-21'	MW19-4 2'-3'8"	
			Sample I.D.		B19-18946-3	B19-18946-4	B19-18946-5	
			Date Collected		25-Jun-19	25-Jun-19	25-Jun-19	
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Methylnaphthalene 2-(1-)	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Naphthalene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Phenanthrene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	
Pyrene	µg/g	0.05	EPA 8270	28-Jun-19/K	< 0.05	< 0.05	< 0.05	

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70765 **REPORT No. B19-19072 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 26-Jun-19
DATE REPORTED: 08-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-5 9"-3'4"	MW19-6 0'-1'6"		
			Sample I.D.		B19-19072-1	B19-19072-2		
			Date Collected		26-Jun-19	26-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	02-Jul-19/O	7.59	7.92		
Conductivity @25°C	mS/cm	0.001	SM 2510B	02-Jul-19/O	0.218	0.96		
Chloride	µg/g	5	SM4110C	06-Jul-19/O	5	8		
Sodium Adsorption Ratio	units		SM 3120	28-Jun-19/O	0.284	0.627		
Antimony	µg/g	0.5	EPA 6020	28-Jun-19/O	< 0.5	< 0.5		
Arsenic	µg/g	0.5	EPA 6020	28-Jun-19/O	3.6	2.1		
Barium	µg/g	1	EPA 6010	28-Jun-19/O	251	190		
Beryllium	µg/g	0.2	EPA 6010	28-Jun-19/O	0.9	0.2		
Boron	µg/g	0.5	EPA 6010	28-Jun-19/O	12.5	15.4		
Boron (HWS)	µg/g	0.02	MOE3470	28-Jun-19/O	0.21	0.28		
Cadmium	µg/g	0.5	EPA 6010	28-Jun-19/O	< 0.5	< 0.5		
Chromium	µg/g	1	EPA 6010	28-Jun-19/O	39	9		
Chromium (VI)	µg/g	0.2	EPA7196A	28-Jun-19/O	< 0.2	< 0.2		
Cobalt	µg/g	1	EPA 6010	28-Jun-19/O	17	5		
Copper	µg/g	1	EPA 6010	28-Jun-19/O	32	18		
Lead	µg/g	5	EPA 6010	28-Jun-19/O	76	66		

R. Lecompte

Richard Lecompte
Laboratory Supervisor

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70765 **REPORT No. B19-19072 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 26-Jun-19
DATE REPORTED: 08-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-5 9"-3'4"	MW19-6 0'-1'6"		
			Sample I.D.		B19-19072-1	B19-19072-2		
			Date Collected		26-Jun-19	26-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Mercury	µg/g	0.005	EPA 7471A	28-Jun-19/O	0.061	0.032		
Molybdenum	µg/g	1	EPA 6010	28-Jun-19/O	< 1	< 1		
Nickel	µg/g	1	EPA 6010	28-Jun-19/O	29	11		
Selenium	µg/g	0.5	EPA 6020	28-Jun-19/O	< 0.5	< 0.5		
Silver	µg/g	0.2	EPA 6010	28-Jun-19/O	< 0.2	< 0.2		
Thallium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.2	0.2		
Uranium	µg/g	0.1	EPA 6020	28-Jun-19/O	0.4	0.3		
Vanadium	µg/g	1	EPA 6010	28-Jun-19/O	53	13		
Zinc	µg/g	3	EPA 6010	28-Jun-19/O	102	28		

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Richard Lecompte
Laboratory Supervisor

CADUCEON™ ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70765 **REPORT No. B19-19072 (ii)**

Report To:

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4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 26-Jun-19
DATE REPORTED: 08-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-5 9"-3'4"	MW19-6 0'-1'6"		
			Sample I.D.		B19-19072-1	B19-19072-2		
			Date Collected		26-Jun-19	26-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
PHC F1 (C6-C10)	µg/g	10	CWS Tier 1	28-Jun-19/R	< 10	< 10		
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	27-Jun-19/K	< 5	< 5		
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10	29		
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	27-Jun-19/K	< 10	34 [1]		
PHC F4 (Gravimetric)	µg/g	50	CWS Tier 1	02-Jul-19/K		580		
% moisture	%			26-Jun-19/R	20.5	5.1		

1. Note: Chromat did not return to baseline F4G requ

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Richard Lecompte
Laboratory Supervisor

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70765 **REPORT No. B19-20286**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-6 6'-8'			
			Sample I.D.		B19-20286-1			
			Date Collected		26-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Conductivity @25°C	mS/cm	0.001	SM 2510B	12-Jul-19/O	0.375			
Sodium Adsorption Ratio	units		SM 3120	12-Jul-19/O	0.80			

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20294**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
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Attention: Natalia Baranova

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DATE RECEIVED: 08-Jul-19
DATE REPORTED: 09-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3 9"-3'4'			
			Sample I.D.		B19-20294-1			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/g	0.5	EPA 8260	27-Jun-19/R	2.7			
Benzene	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromodichloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromoform	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Bromomethane	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Carbon Tetrachloride	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Chloroform	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dibromochloromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichlorobenzene,1,2-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorobenzene,1,3-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorobenzene,1,4-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichlorodifluoromethane	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichloroethane,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethylene,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloroethene, trans-1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropane,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Dichloropropene 1,3-cis+trans	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Ethylbenzene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			

R. Lecompte

Richard Lecompte
Laboratory Supervisor

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20294**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 09-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3 9"-3'4'			
			Sample I.D.		B19-20294-1			
			Date Collected		25-Jun-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Hexane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Methyl Ethyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R	< 0.5			
Methyl Isobutyl Ketone	µg/g	0.5	EPA 8260	27-Jun-19/R	< 0.5			
Methyl-t-butyl Ether	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Dichloromethane (Methylene Chloride)	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Styrene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Tetrachloroethane,1,1,2,2-	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Tetrachloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Toluene	µg/g	0.2	EPA 8260	27-Jun-19/R	< 0.2			
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Trichloroethylene	µg/g	0.05	EPA 8260	27-Jun-19/R	< 0.05			
Trichlorofluoromethane	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Vinyl Chloride	µg/g	0.02	EPA 8260	27-Jun-19/R	< 0.02			
Xylene, m,p-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			
Xylene, o-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			
Xylene, m,p,o-	µg/g	0.03	EPA 8260	27-Jun-19/R	< 0.03			

R. Lecompte

Richard Lecompte
Laboratory Supervisor

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (i)**

Report To:

XCG Consulting Limited
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Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 13'3"-16'6"	MW19-2 7'3"-10'		
			Sample I.D.		B19-20317-1	B19-20317-2		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Antimony	µg/g	0.5	EPA 6020	12-Jul-19/O	< 0.5	< 0.5		
Arsenic	µg/g	0.5	EPA 6020	12-Jul-19/O	2.9	3.0		
Barium	µg/g	1	EPA 6010	12-Jul-19/O	322	157		
Beryllium	µg/g	0.2	EPA 6010	12-Jul-19/O	1.2	0.8		
Boron	µg/g	0.5	EPA 6010	12-Jul-19/O	5.5	7.5		
Cadmium	µg/g	0.5	EPA 6010	12-Jul-19/O	< 0.5	< 0.5		
Chromium	µg/g	1	EPA 6010	12-Jul-19/O	50	31		
Cobalt	µg/g	1	EPA 6010	12-Jul-19/O	21	13		
Copper	µg/g	1	EPA 6010	12-Jul-19/O	29	15		
Lead	µg/g	5	EPA 6010	12-Jul-19/O	12	18		
Mercury	µg/g	0.005	EPA 7471A	12-Jul-19/O	0.020	0.074		
Molybdenum	µg/g	1	EPA 6010	12-Jul-19/O	< 1	< 1		
Nickel	µg/g	1	EPA 6010	12-Jul-19/O	37	21		
Selenium	µg/g	0.5	EPA 6020	12-Jul-19/O	0.7	0.7		
Silver	µg/g	0.2	EPA 6010	12-Jul-19/O	< 0.2	< 0.2		
Thallium	µg/g	0.1	EPA 6020	12-Jul-19/O	0.3	0.2		

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (i)**

Report To:

XCG Consulting Limited
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Attention: Natalia Baranova

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Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-1 13'3"-16'6"	MW19-2 7'3"-10'		
			Sample I.D.		B19-20317-1	B19-20317-2		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Uranium	µg/g	0.1	EPA 6020	12-Jul-19/O	0.5	0.5		
Vanadium	µg/g	1	EPA 6010	12-Jul-19/O	69	42		
Zinc	µg/g	3	EPA 6010	12-Jul-19/O	94	53		

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (ii)**

Report To:

XCG Consulting Limited
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DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-2 7'3"-10'	MW19-3 6'6"-8'		
			Sample I.D.		B19-20317-2	B19-20317-3		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/g	0.5	EPA 8260	10-Jul-19/R	< 0.5	< 0.5		
Benzene	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Bromoform	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Bromomethane	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Carbon Tetrachloride	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Chloroform	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dibromochloromethane	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichlorobenzene,1,2-	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dichlorobenzene,1,3-	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dichlorobenzene,1,4-	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dichlorodifluoromethane	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dichloroethane,1,1-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloroethane,1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloroethylene,1,1-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
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Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-2 7'3"-10'	MW19-3 6'6"-8'		
			Sample I.D.		B19-20317-2	B19-20317-3		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloroethene, trans-1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloropropane,1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Ethylbenzene	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Hexane	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Methyl Ethyl Ketone	µg/g	0.5	EPA 8260	10-Jul-19/R	< 0.5	< 0.5		
Methyl Isobutyl Ketone	µg/g	0.5	EPA 8260	10-Jul-19/R	< 0.5	< 0.5		
Methyl-t-butyl Ether	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Dichloromethane (Methylene Chloride)	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Styrene	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON™ ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-2 7'3"-10'	MW19-3 6'6"-8'		
			Sample I.D.		B19-20317-2	B19-20317-3		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Tetrachloroethane,1,1,2,2-	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Tetrachloroethylene	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Toluene	µg/g	0.2	EPA 8260	10-Jul-19/R	< 0.2	< 0.2		
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Trichloroethylene	µg/g	0.05	EPA 8260	10-Jul-19/R	< 0.05	< 0.05		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	10-Jul-19/R	< 0.02	< 0.02		
Xylene, m,p-	µg/g	0.03	EPA 8260	10-Jul-19/R	< 0.03	< 0.03		
Xylene, o-	µg/g	0.03	EPA 8260	10-Jul-19/R	< 0.03	< 0.03		
Xylene, m,p,o-	µg/g	0.03	EPA 8260	10-Jul-19/R	< 0.03	< 0.03		
PHC F1 (C6-C10)	µg/g	10	CWS Tier 1	10-Jul-19/R	< 10			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	11-Jul-19/K	< 6 [1]			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	11-Jul-19/K	11			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	11-Jul-19/K	< 10			

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G70764 **REPORT No. B19-20317 (ii)**

Report To:

XCG Consulting Limited
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DATE RECEIVED: 08-Jul-19
DATE REPORTED: 15-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-2 7'3"-10'	MW19-3 6'6"-8'		
			Sample I.D.		B19-20317-2	B19-20317-3		
			Date Collected		25-Jun-19	25-Jun-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
% moisture	%			10-Jul-19/R	22.7	24.7		

1. Note: Elevated MDL due to high % moisture.

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (i)**

Report To:

XCG Consulting Limited
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DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m)	TP19-7 (2m)	Duplicate-2	TP19-6 (2m North)
			Sample I.D.		B19-21395-2	B19-21395-3	B19-21395-5	B19-21395-6
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	22-Jul-19/O	7.27	7.05		
Conductivity @25°C	mS/cm	0.001	SM 2510B	22-Jul-19/O	0.16	0.265		
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O	0.794	1.46		
Antimony	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	24-Jul-19/O	3.1	3.8	2.9	3.8
Barium	µg/g	1	EPA 6010	24-Jul-19/O	140	179	133	135
Beryllium	µg/g	0.2	EPA 6010	24-Jul-19/O	0.6	0.8	0.7	0.6
Boron	µg/g	0.5	EPA 6010	24-Jul-19/O	9.8	10.7	9.9	11.5
Boron (HWS)	µg/g	0.02	MOE3470	24-Jul-19/O	0.44	0.43	0.44	0.44
Cadmium	µg/g	0.5	EPA 6010	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	24-Jul-19/O	26	32	28	29
Chromium (VI)	µg/g	0.2	EPA7196A	22-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	24-Jul-19/O	11	12	12	12
Copper	µg/g	1	EPA 6010	24-Jul-19/O	20	23	17	16
Lead	µg/g	5	EPA 6010	24-Jul-19/O	52	34	17	56
Mercury	µg/g	0.005	EPA 7471A	23-Jul-19/O	0.123	0.096	0.063	0.087

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

C.O.C.: G80008 **REPORT No. B19-21395 (i)**

Report To:

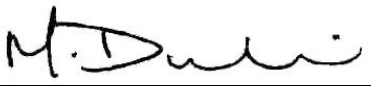
XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m)	TP19-7 (2m)	Duplicate-2	TP19-6 (2m North)
			Sample I.D.		B19-21395-2	B19-21395-3	B19-21395-5	B19-21395-6
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Molybdenum	µg/g	1	EPA 6010	24-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	24-Jul-19/O	19	24	20	20
Selenium	µg/g	0.5	EPA 6020	24-Jul-19/O	0.6	0.8	0.6	0.6
Silver	µg/g	0.2	EPA 6010	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.2	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.4	0.5	0.5	0.5
Vanadium	µg/g	1	EPA 6010	24-Jul-19/O	36	43	37	37
Zinc	µg/g	3	EPA 6010	24-Jul-19/O	59	58	52	54



Michelle Dubien
Lab Manager

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DATE RECEIVED: 15-Jul-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m South)	TP19-6 (2m East)	TP19-6 (2m West)	TP19-7 (2m North)
			Sample I.D.		B19-21395-7	B19-21395-8	B19-21395-9	B19-21395-10
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	22-Jul-19/O				
Conductivity @25°C	mS/cm	0.001	SM 2510B	22-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	24-Jul-19/O	3.0	3.1	2.9	2.6
Barium	µg/g	1	EPA 6010	24-Jul-19/O	139	159	201	140
Beryllium	µg/g	0.2	EPA 6010	24-Jul-19/O	0.7	0.8	0.9	0.6
Boron	µg/g	0.5	EPA 6010	24-Jul-19/O	11.8	11.8	12.8	13.2
Boron (HWS)	µg/g	0.02	MOE3470	24-Jul-19/O	0.41	0.41	0.51	0.47
Cadmium	µg/g	0.5	EPA 6010	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	24-Jul-19/O	29	32	35	26
Chromium (VI)	µg/g	0.2	EPA7196A	22-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	24-Jul-19/O	13	13	16	10
Copper	µg/g	1	EPA 6010	24-Jul-19/O	18	20	17	18
Lead	µg/g	5	EPA 6010	24-Jul-19/O	18	9	14	21
Mercury	µg/g	0.005	EPA 7471A	23-Jul-19/O	0.053	0.043	0.048	0.050

Michelle Dubien
Lab Manager

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DATE RECEIVED: 15-Jul-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m South)	TP19-6 (2m East)	TP19-6 (2m West)	TP19-7 (2m North)
			Sample I.D.		B19-21395-7	B19-21395-8	B19-21395-9	B19-21395-10
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Molybdenum	µg/g	1	EPA 6010	24-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	24-Jul-19/O	21	25	26	20
Selenium	µg/g	0.5	EPA 6020	24-Jul-19/O	0.6	0.8	0.6	0.5
Silver	µg/g	0.2	EPA 6010	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.2	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.4	0.5	0.6	0.4
Vanadium	µg/g	1	EPA 6010	24-Jul-19/O	38	42	46	33
Zinc	µg/g	3	EPA 6010	24-Jul-19/O	53	45	64	46

Michelle Dubien
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-7 (2m South)	TP19-7 (2m East)	TP19-7 (2m West)	TP19-1 (0-1m)
			Sample I.D.		B19-21395-11	B19-21395-12	B19-21395-13	B19-21395-14
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	22-Jul-19/O				7.37
Conductivity @25°C	mS/cm	0.001	SM 2510B	22-Jul-19/O				0.383
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				1.84
Antimony	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	24-Jul-19/O	3.3	< 0.5	2.9	3.0
Barium	µg/g	1	EPA 6010	24-Jul-19/O	188	1	156	178
Beryllium	µg/g	0.2	EPA 6010	24-Jul-19/O	0.6	< 0.2	0.4	0.6
Boron	µg/g	0.5	EPA 6010	24-Jul-19/O	11.5	7.7	14.1	10.6
Boron (HWS)	µg/g	0.02	MOE3470	24-Jul-19/O	0.43	0.43	0.48	0.56
Cadmium	µg/g	0.5	EPA 6010	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	24-Jul-19/O	24	1	22	30
Chromium (VI)	µg/g	0.2	EPA7196A	22-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	24-Jul-19/O	10	< 1	7	11
Copper	µg/g	1	EPA 6010	24-Jul-19/O	22	< 1	23	22
Lead	µg/g	5	EPA 6010	24-Jul-19/O	117	< 5	51	45
Mercury	µg/g	0.005	EPA 7471A	23-Jul-19/O	0.065	0.067	0.131	0.079

Michelle Dubien
Lab Manager

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DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-7 (2m South)	TP19-7 (2m East)	TP19-7 (2m West)	TP19-1 (0-1m)
			Sample I.D.		B19-21395-11	B19-21395-12	B19-21395-13	B19-21395-14
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Molybdenum	µg/g	1	EPA 6010	24-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	24-Jul-19/O	19	< 1	13	19
Selenium	µg/g	0.5	EPA 6020	24-Jul-19/O	0.5	< 0.5	< 0.5	0.6
Silver	µg/g	0.2	EPA 6010	24-Jul-19/O	< 0.2	< 0.2	0.4	0.2
Thallium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.2	< 0.1	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.4	< 0.1	0.3	0.5
Vanadium	µg/g	1	EPA 6010	24-Jul-19/O	31	< 1	20	36
Zinc	µg/g	3	EPA 6010	24-Jul-19/O	58	< 3	50	87

Michelle Dubien
Lab Manager

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DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-1 (2.8 Centre)	TP19-1 (East)	TP19-1 (North)	TP19-1 (West)
			Sample I.D.		B19-21395-15	B19-21395-16	B19-21395-17	B19-21395-18
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	22-Jul-19/O				
Conductivity @25°C	mS/cm	0.001	SM 2510B	22-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	24-Jul-19/O	4.4	5.2	5.8	3.6
Barium	µg/g	1	EPA 6010	24-Jul-19/O	212	190	158	184
Beryllium	µg/g	0.2	EPA 6010	24-Jul-19/O	0.8	0.9	0.5	0.7
Boron	µg/g	0.5	EPA 6010	24-Jul-19/O	21.2	15.2	16.0	14.6
Boron (HWS)	µg/g	0.02	MOE3470	24-Jul-19/O	0.56	0.69	0.45	0.55
Cadmium	µg/g	0.5	EPA 6010	24-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	24-Jul-19/O	32	35	19	28
Chromium (VI)	µg/g	0.2	EPA7196A	22-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	24-Jul-19/O	13	13	7	11
Copper	µg/g	1	EPA 6010	24-Jul-19/O	25	23	17	27
Lead	µg/g	5	EPA 6010	24-Jul-19/O	66	53	135	88
Mercury	µg/g	0.005	EPA 7471A	23-Jul-19/O	0.066	0.084	0.058	0.079

Michelle Dubien
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-1 (2.8 Centre)	TP19-1 (East)	TP19-1 (North)	TP19-1 (West)
			Sample I.D.		B19-21395-15	B19-21395-16	B19-21395-17	B19-21395-18
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Molybdenum	µg/g	1	EPA 6010	24-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	24-Jul-19/O	24	24	14	22
Selenium	µg/g	0.5	EPA 6020	24-Jul-19/O	0.6	0.8	0.5	0.6
Silver	µg/g	0.2	EPA 6010	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.2	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.5	0.8	0.4	0.5
Vanadium	µg/g	1	EPA 6010	24-Jul-19/O	43	45	25	37
Zinc	µg/g	3	EPA 6010	24-Jul-19/O	96	105	69	131

Michelle Dubien
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		Duplicate-3			
			Sample I.D.		B19-21395-19			
			Date Collected		15-Jul-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	22-Jul-19/O	7.37			
Conductivity @25°C	mS/cm	0.001	SM 2510B	22-Jul-19/O	0.373			
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O	1.92			
Antimony	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5			
Arsenic	µg/g	0.5	EPA 6020	24-Jul-19/O	3.2			
Barium	µg/g	1	EPA 6010	24-Jul-19/O	174			
Beryllium	µg/g	0.2	EPA 6010	24-Jul-19/O	0.6			
Boron	µg/g	0.5	EPA 6010	24-Jul-19/O	13.8			
Boron (HWS)	µg/g	0.02	MOE3470	24-Jul-19/O	0.50			
Cadmium	µg/g	0.5	EPA 6010	24-Jul-19/O	< 0.5			
Chromium	µg/g	1	EPA 6010	24-Jul-19/O	30			
Chromium (VI)	µg/g	0.2	EPA7196A	22-Jul-19/O	< 0.2			
Cobalt	µg/g	1	EPA 6010	24-Jul-19/O	10			
Copper	µg/g	1	EPA 6010	24-Jul-19/O	59			
Lead	µg/g	5	EPA 6010	24-Jul-19/O	44			
Mercury	µg/g	0.005	EPA 7471A	23-Jul-19/O	0.085			

Michelle Dubien
Lab Manager

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			Client I.D.		Duplicate-3			
			Sample I.D.		B19-21395-19			
			Date Collected		15-Jul-19			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Molybdenum	µg/g	1	EPA 6010	24-Jul-19/O	< 1			
Nickel	µg/g	1	EPA 6010	24-Jul-19/O	19			
Selenium	µg/g	0.5	EPA 6020	24-Jul-19/O	< 0.5			
Silver	µg/g	0.2	EPA 6010	24-Jul-19/O	< 0.2			
Thallium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.2			
Uranium	µg/g	0.1	EPA 6020	24-Jul-19/O	0.5			
Vanadium	µg/g	1	EPA 6010	24-Jul-19/O	37			
Zinc	µg/g	3	EPA 6010	24-Jul-19/O	87			

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON™ ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-2 (0.8m)	TP19-6 (2m)	TP19-7 (2m)	Soil Duplicate
			Sample I.D.		B19-21395-1	B19-21395-2	B19-21395-3	B19-21395-4
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/g	0.5	EPA 8260	17-Jul-19/R	< 0.5			< 0.5
Benzene	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Bromoform	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Bromomethane	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Carbon Tetrachloride	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Chloroform	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dibromochloromethane	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichlorobenzene,1,2-	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dichlorobenzene,1,3-	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dichlorobenzene,1,4-	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dichlorodifluoromethane	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dichloroethane,1,1-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloroethane,1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloroethylene,1,1-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-2 (0.8m)	TP19-6 (2m)	TP19-7 (2m)	Soil Duplicate
			Sample I.D.		B19-21395-1	B19-21395-2	B19-21395-3	B19-21395-4
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloroethene, trans-1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloropropane,1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Ethylbenzene	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Hexane	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Methyl Ethyl Ketone	µg/g	0.5	EPA 8260	17-Jul-19/R	< 0.5			< 0.5
Methyl Isobutyl Ketone	µg/g	0.5	EPA 8260	17-Jul-19/R	< 0.5			< 0.5
Methyl-t-butyl Ether	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Dichloromethane (Methylene Chloride)	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Styrene	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON™ ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-2 (0.8m)	TP19-6 (2m)	TP19-7 (2m)	Soil Duplicate
			Sample I.D.		B19-21395-1	B19-21395-2	B19-21395-3	B19-21395-4
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Tetrachloroethylene	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Toluene	µg/g	0.2	EPA 8260	17-Jul-19/R	< 0.2			< 0.2
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Trichloroethylene	µg/g	0.05	EPA 8260	17-Jul-19/R	< 0.05			< 0.05
Trichlorofluoromethane	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	17-Jul-19/R	< 0.02			< 0.02
Xylene, m,p-	µg/g	0.03	EPA 8260	17-Jul-19/R	< 0.03			< 0.03
Xylene, o-	µg/g	0.03	EPA 8260	17-Jul-19/R	< 0.03			< 0.03
Xylene, m,p,o-	µg/g	0.03	EPA 8260	17-Jul-19/R	< 0.03			< 0.03
PHC F1 (C6-C10)	µg/g	10	CWS Tier 1	17-Jul-19/R	< 10			< 10
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	18-Jul-19/K	< 5			< 5
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	18-Jul-19/K	< 10			< 10
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	18-Jul-19/K	< 10			< 10

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-2 (0.8m)	TP19-6 (2m)	TP19-7 (2m)	Soil Duplicate
			Sample I.D.		B19-21395-1	B19-21395-2	B19-21395-3	B19-21395-4
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
% moisture	%			16-Jul-19/R		14.5	18.2	

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (iii)**

Report To:

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Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m)	TP19-7 (2m)	TP19-1 (0-1m)	Duplicate-3
			Sample I.D.		B19-21395-2	B19-21395-3	B19-21395-14	B19-21395-19
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acenaphthene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.10	0.13
Benzo(a)pyrene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.11	0.13
Benzo(b)fluoranthene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.16	0.17
Benzo(b+k)fluoranthene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.22	0.24
Benzo(g,h,i)perylene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.07	0.08
Benzo(k)fluoranthene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.06	0.07
Chrysene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.12	0.15
Dibenzo(a,h)anthracene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.24	0.31
Fluorene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.09	0.10
Methylnaphthalene,1-	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene,2-	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80008 **REPORT No. B19-21395 (iii)**

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285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 25-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-6 (2m)	TP19-7 (2m)	TP19-1 (0-1m)	Duplicate-3
			Sample I.D.		B19-21395-2	B19-21395-3	B19-21395-14	B19-21395-19
			Date Collected		15-Jul-19	15-Jul-19	15-Jul-19	15-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Methylnaphthalene 2-(1-)	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.09	0.11
Pyrene	µg/g	0.05	EPA 8270	22-Jul-19/K	< 0.05	< 0.05	0.21	0.26

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

R.L. = Reporting Limit
Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill,B-Barrie
Uncertainty values available upon request

Michelle Dubien
Lab Manager

CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80010 **REPORT No. B19-21653 (i)**

Report To:

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Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

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285 Dalton Ave
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Tel: 613-544-2001
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DATE RECEIVED: 16-Jul-19
DATE REPORTED: 26-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-17	TP19-18	TP19-19	TP19-9 Centre
			Sample I.D.		B19-21653-1	B19-21653-2	B19-21653-3	B19-21653-4
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O				7.36
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				0.258
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				1.16
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	3.1	4.9	1.8	3.0
Barium	µg/g	1	EPA 6010	25-Jul-19/O	131	237	138	209
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.6	0.9	0.8	0.8
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	5.2	7.0	6.3	5.2
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.09	0.21	0.30	0.08
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	24	36	24	32
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	9	14	12	11
Copper	µg/g	1	EPA 6010	25-Jul-19/O	22	36	9	23
Lead	µg/g	5	EPA 6010	25-Jul-19/O	39	256	16	14
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.086	0.298	0.055	0.032
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	17	26	20	26
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.5	0.8	0.6	0.7
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.2	0.2	0.1	0.2
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.5	0.5	0.3	0.5
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	30	46	25	41
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	53	109	48	52

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80010 **REPORT No. B19-21653 (i)**

Report To:

XCG Consulting Limited
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Kingston ON K7K 1Z7 Canada
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DATE RECEIVED: 16-Jul-19
DATE REPORTED: 26-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-9-East	TP19-9-West	TP19-9-North	TP19-9-South
			Sample I.D.		B19-21653-5	B19-21653-6	B19-21653-7	B19-21653-8
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O				
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	4.0	3.8	4.2	3.6
Barium	µg/g	1	EPA 6010	25-Jul-19/O	207	216	243	242
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.9	0.9	1.0	1.0
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	4.1	3.9	9.5	5.3
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.19	0.12	0.16	0.13
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	34	32	38	36
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	15	13	13	14
Copper	µg/g	1	EPA 6010	25-Jul-19/O	21	23	27	24
Lead	µg/g	5	EPA 6010	25-Jul-19/O	57	28	41	45
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.109	0.071	0.091	0.062
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	23	24	28	26
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.6	0.7	0.7	0.7
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.2	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.5	0.5	0.5	0.5
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	49	46	51	50
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	89	67	78	72

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80010 **REPORT No. B19-21653 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 16-Jul-19
DATE REPORTED: 26-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-8-Centre	TP19-8-North	TP19-8-South	TP19-8-East
			Sample I.D.		B19-21653-9	B19-21653-10	B19-21653-11	B19-21653-12
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O	7.28			
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O	0.241			
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O	0.593			
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	3.2	3.7	3.7	3.4
Barium	µg/g	1	EPA 6010	25-Jul-19/O	208	225	205	222
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.8	0.9	0.8	1.0
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	6.1	2.7	7.8	3.1
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.12	0.15	0.15	0.14
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	33	34	34	34
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	11	12	11	11
Copper	µg/g	1	EPA 6010	25-Jul-19/O	24	26	34	24
Lead	µg/g	5	EPA 6010	25-Jul-19/O	30	35	23	14
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.064	0.079	0.077	0.057
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	25	25	24	28
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.7	0.7	0.7	0.9
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.2	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.5	0.6	0.5	0.5
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	41	44	42	45
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	56	63	62	55

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
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			Client I.D.		TP19-8-West	TP19-11-North	TP19-11-South	TP19-11-West
			Sample I.D.		B19-21653-13	B19-21653-14	B19-21653-15	B19-21653-16
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O				
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	3.5	3.3	4.2	6.1
Barium	µg/g	1	EPA 6010	25-Jul-19/O	233	516	330	340
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	1.0	1.2	1.0	1.1
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	2.5	1.4	2.4	4.6
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.16	0.20	0.21	0.25
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	37	53	45	45
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	14	18	16	17
Copper	µg/g	1	EPA 6010	25-Jul-19/O	21	37	33	32
Lead	µg/g	5	EPA 6010	25-Jul-19/O	25	10	25	79
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.062	0.019	0.038	0.058
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	28	43	32	34
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.8	0.9	0.5	0.9
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.3	0.4	0.3	0.3
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.6	0.6	0.5	0.6
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	49	68	56	60
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	68	101	153	98

Michelle Dubien
Lab Manager

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DATE RECEIVED: 16-Jul-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-11-East	TP19-11-Centre	TP19-12-North	TP19-12-South
			Sample I.D.		B19-21653-17	B19-21653-18	B19-21653-19	B19-21653-20
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O		7.33		
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	3.4	3.0	2.6	1.9
Barium	µg/g	1	EPA 6010	25-Jul-19/O	401	314	170	76
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	1.1	0.9	0.8	0.3
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	4.4	5.6	6.5	4.4
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.13	0.14	0.18	0.14
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	50	40	33	12
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	19	14	12	6
Copper	µg/g	1	EPA 6010	25-Jul-19/O	37	30	18	13
Lead	µg/g	5	EPA 6010	25-Jul-19/O	14	15	27	35
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.017	0.022	0.051	0.031
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	42	32	23	10
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.7	0.7	< 0.5	< 0.5
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.4	0.3	0.2	0.1
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.6	0.5	0.5	0.4
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	67	55	51	23
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	104	94	76	45

Michelle Dubien
Lab Manager

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Fax: 613-544-2770

DATE RECEIVED: 16-Jul-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
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			Client I.D.		TP19-12-Centre	TP19-12-East	TP19-12-West	TP19-10-North
			Sample I.D.		B19-21653-21	B19-21653-22	B19-21653-23	B19-21653-24
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O	7.37			
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	3.5	3.4	3.2	2.6
Barium	µg/g	1	EPA 6010	25-Jul-19/O	229	320	289	232
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.7	0.9	0.8	0.8
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	12.9	5.9	6.8	8.4
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.19	0.15	0.20	0.11
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	29	46	34	38
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	10	14	12	10
Copper	µg/g	1	EPA 6010	25-Jul-19/O	22	30	26	24
Lead	µg/g	5	EPA 6010	25-Jul-19/O	65	11	21	7
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.044	0.020	0.040	0.022
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	23	38	29	27
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.6	0.7	0.6	0.7
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.2	0.3	0.3	0.2
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.5	0.5	0.5	0.5
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	41	57	46	48
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	103	137	67	65

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Lab Manager

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			Client I.D.		TP19-10-South	TP19-10-East	TP19-10-West	TP19-10-Centre
			Sample I.D.		B19-21653-25	B19-21653-26	B19-21653-27	B19-21653-28
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O				7.25
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	2.9	2.3	2.5	2.4
Barium	µg/g	1	EPA 6010	25-Jul-19/O	273	189	206	196
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.9	0.6	0.8	0.8
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	5.5	5.1	4.8	4.3
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.10	0.08	0.10	0.10
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	39	26	35	34
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	13	10	10	10
Copper	µg/g	1	EPA 6010	25-Jul-19/O	29	21	24	20
Lead	µg/g	5	EPA 6010	25-Jul-19/O	8	7	7	9
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.023	0.015	0.025	0.026
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	32	21	25	26
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	0.9	0.6	0.7	0.7
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.3	0.2	0.2	0.2
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.5	0.4	0.5	0.5
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	50	39	45	40
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	69	46	59	54

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			Client I.D.		TP19-10-Bottom	Duplicate 5	Duplicate 4	
			Sample I.D.		B19-21653-29	B19-21653-30	B19-21653-31	
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
pH @25°C	pH Units		SM 4500H	23-Jul-19/O	7.35			
Conductivity @25°C	mS/cm	0.001	SM 2510B	24-Jul-19/O				
Sodium Adsorption Ratio	units		SM 3120	24-Jul-19/O				
Antimony	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	< 0.5	< 0.5	
Arsenic	µg/g	0.5	EPA 6020	26-Jul-19/O	1.9	3.1	2.1	
Barium	µg/g	1	EPA 6010	25-Jul-19/O	78	289	96	
Beryllium	µg/g	0.2	EPA 6010	25-Jul-19/O	0.4	1.0	0.4	
Boron	µg/g	0.5	EPA 6010	25-Jul-19/O	5.9	6.0	5.3	
Boron (HWS)	µg/g	0.02	MOE3470	25-Jul-19/O	0.04	0.16	0.11	
Cadmium	µg/g	0.5	EPA 6010	25-Jul-19/O	< 0.5	< 0.5	< 0.5	
Chromium	µg/g	1	EPA 6010	25-Jul-19/O	18	54	17	
Chromium (VI)	µg/g	0.2	EPA7196A	24-Jul-19/O	< 0.2	< 0.2	< 0.2	
Cobalt	µg/g	1	EPA 6010	25-Jul-19/O	6	14	7	
Copper	µg/g	1	EPA 6010	25-Jul-19/O	13	30	13	
Lead	µg/g	5	EPA 6010	25-Jul-19/O	< 5	9	12	
Mercury	µg/g	0.005	EPA 7471A	26-Jul-19/O	0.028	0.023	0.037	
Molybdenum	µg/g	1	EPA 6010	25-Jul-19/O	< 1	2	< 1	
Nickel	µg/g	1	EPA 6010	25-Jul-19/O	17	54	14	
Selenium	µg/g	0.5	EPA 6020	26-Jul-19/O	< 0.5	0.9	< 0.5	
Silver	µg/g	0.2	EPA 6010	25-Jul-19/O	< 0.2	< 0.2	< 0.2	
Thallium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.1	0.3	0.1	
Uranium	µg/g	0.1	EPA 6020	26-Jul-19/O	0.4	0.5	0.4	
Vanadium	µg/g	1	EPA 6010	25-Jul-19/O	25	52	24	
Zinc	µg/g	3	EPA 6010	25-Jul-19/O	26	73	29	

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80010 **REPORT No. B19-21653 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 16-Jul-19
DATE REPORTED: 26-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-9 Centre	TP19-8-Centre	TP19-11-Centre	TP19-12-Centre
			Sample I.D.		B19-21653-4	B19-21653-9	B19-21653-18	B19-21653-21
			Date Collected		16-Jul-19	16-Jul-19	16-Jul-19	16-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acenaphthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b+k)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(g,h,i)perylene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene,1-	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene,2-	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene 2-(1-)	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05	< 0.05	< 0.05
% moisture	%			26-Jul-19/K	16.5	19.4	19.7	11.9

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80010 **REPORT No. B19-21653 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 16-Jul-19
DATE REPORTED: 26-Jul-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		TP19-10-Centre	TP19-10-Bottom		
			Sample I.D.		B19-21653-28	B19-21653-29		
			Date Collected		16-Jul-19	16-Jul-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acenaphthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Acenaphthylene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(a)anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(a)pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(b)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(b+k)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(g,h,i)perylene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Benzo(k)fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Chrysene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Dibenzo(a,h)anthracene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Fluoranthene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Fluorene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Methylnaphthalene,1-	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Methylnaphthalene,2-	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Methylnaphthalene 2-(1-)	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Naphthalene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Phenanthrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
Pyrene	µg/g	0.05	EPA 8270	24-Jul-19/K	< 0.05	< 0.05		
% moisture	%			26-Jul-19/K	20.5	13.8		

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80004 **REPORT No. B19-21399 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
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Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3	MW19-1	MW19-4	MW19-6
			Sample I.D.		B19-21399-1	B19-21399-3	B19-21399-4	B19-21399-5
			Date Collected		12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Conductivity @25°C	µmho/cm	1	SM 2510B	16-Jul-19/O		1220		1440
Chloride	mg/L	0.5	SM4110C	18-Jul-19/O	117	142	25.7	239
Antimony	µg/L	0.1	EPA 200.8	17-Jul-19/O	< 0.1	< 0.1	1.5	0.3
Arsenic	µg/L	0.1	EPA 200.8	17-Jul-19/O	< 0.1	< 0.1	0.4	0.3
Barium	µg/L	1	SM 3120	22-Jul-19/O	119	150	90	105
Beryllium	µg/L	0.1	EPA 200.8	17-Jul-19/O	< 0.1	< 0.1	< 0.1	< 0.1
Boron	µg/L	5	SM 3120	22-Jul-19/O	120	44	166	139
Cadmium	µg/L	0.015	EPA 200.8	17-Jul-19/O	< 0.015	< 0.015	< 0.015	< 0.015
Chromium	µg/L	2	SM 3120	22-Jul-19/O	< 2	< 2	< 2	< 2
Chromium (VI)	µg/L	10	MOE E3056	18-Jul-19/O	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]
Cobalt	µg/L	0.1	EPA 200.8	17-Jul-19/O	0.2	0.3	0.5	1.6
Copper	µg/L	2	SM 3120	22-Jul-19/O	< 2	< 2	< 2	< 2
Lead	µg/L	0.02	EPA 200.8	17-Jul-19/O	< 0.02	0.02	0.06	0.06
Mercury	µg/L	0.02	SM 3112 B	19-Jul-19/O	< 0.02	0.05	< 0.02	0.04
Molybdenum	µg/L	0.1	EPA 200.8	17-Jul-19/O	1.0	0.7	3.1	3.0
Nickel	µg/L	0.2	EPA 200.8	17-Jul-19/O	1.3	1.9	2.2	4.9
Selenium	µg/L	1	EPA 200.8	17-Jul-19/O	1	2	< 1	2
Silver	µg/L	0.1	EPA 200.8	17-Jul-19/O	< 0.1	< 0.1	< 0.1	< 0.1
Sodium	µg/L	200	SM 3120	22-Jul-19/O	85400	86700	25000	77700
Thallium	µg/L	0.05	EPA 200.8	17-Jul-19/O	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	µg/L	0.05	EPA 200.8	17-Jul-19/O	0.72	0.63	0.57	1.27
Vanadium	µg/L	5	SM 3120	22-Jul-19/O	< 5	< 5	< 5	< 5
Zinc	µg/L	5	SM 3120	22-Jul-19/O	< 5	6	6	5

1 . Chromium (VI) result is based on total chromium

Michelle Dubien
Lab Manager

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80004 **REPORT No. B19-21399 (i)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW04-5	Duplicate		
			Sample I.D.		B19-21399-6	B19-21399-7		
			Date Collected		12-Jul-19	12-Jul-19		
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Conductivity @25°C	µmho/cm	1	SM 2510B	16-Jul-19/O	629			
Chloride	mg/L	0.5	SM4110C	18-Jul-19/O	3.7	116		
Antimony	µg/L	0.1	EPA 200.8	17-Jul-19/O		< 0.1		
Arsenic	µg/L	0.1	EPA 200.8	17-Jul-19/O		< 0.1		
Barium	µg/L	1	SM 3120	22-Jul-19/O		121		
Beryllium	µg/L	0.1	EPA 200.8	17-Jul-19/O		< 0.1		
Boron	µg/L	5	SM 3120	22-Jul-19/O		118		
Cadmium	µg/L	0.015	EPA 200.8	17-Jul-19/O		< 0.015		
Chromium	µg/L	2	SM 3120	22-Jul-19/O		< 2		
Chromium (VI)	µg/L	10	MOE E3056	18-Jul-19/O		< 10 [1]		
Cobalt	µg/L	0.1	EPA 200.8	17-Jul-19/O		0.2		
Copper	µg/L	2	SM 3120	22-Jul-19/O		< 2		
Lead	µg/L	0.02	EPA 200.8	17-Jul-19/O		< 0.02		
Mercury	µg/L	0.02	SM 3112 B	19-Jul-19/O		< 0.02		
Molybdenum	µg/L	0.1	EPA 200.8	17-Jul-19/O		1.0		
Nickel	µg/L	0.2	EPA 200.8	17-Jul-19/O		1.3		
Selenium	µg/L	1	EPA 200.8	17-Jul-19/O		1		
Silver	µg/L	0.1	EPA 200.8	17-Jul-19/O		< 0.1		
Sodium	µg/L	200	SM 3120	22-Jul-19/O		84500		
Thallium	µg/L	0.05	EPA 200.8	17-Jul-19/O		< 0.05		
Uranium	µg/L	0.05	EPA 200.8	17-Jul-19/O		0.68		
Vanadium	µg/L	5	SM 3120	22-Jul-19/O		< 5		
Zinc	µg/L	5	SM 3120	22-Jul-19/O		< 5		

1 . Chromium (VI) result is based on total chromium

M. Dubien

Michelle Dubien
Lab Manager

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Attention: Natalia Baranova

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285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
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DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-3	MW04-6	MW19-1	MW19-4
			Sample I.D.		B19-21399-1	B19-21399-2	B19-21399-3	B19-21399-4
			Date Collected		12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/L	30	EPA 8260	19-Jul-19/R	< 30		< 30	< 30
Benzene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Bromodichloromethane	µg/L	2	EPA 8260	19-Jul-19/R	< 2		< 2	< 2
Bromoform	µg/L	5	EPA 8260	19-Jul-19/R	< 5		< 5	< 5
Bromomethane	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.2	EPA 8260	19-Jul-19/R	< 0.2		< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Chloroform	µg/L	1	EPA 8260	19-Jul-19/R	< 1		< 1	< 1
Dibromochloromethane	µg/L	2	EPA 8260	19-Jul-19/R	< 2		< 2	< 2
Dichlorobenzene,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichlorobenzene,1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichlorobenzene,1,4-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichlorodifluoromethane	µg/L	2	EPA 8260	19-Jul-19/R	< 2		< 2	< 2
Dichloroethane,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloroethane,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloroethylene,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloroethene, cis-1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloroethene, trans-1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloropropane,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloropropene, cis-1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloropropene, trans-1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dichloropropene 1,3- cis+trans	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Dibromoethane,1,2- (Ethylene Dibromide)	µg/L	0.2	EPA 8260	19-Jul-19/R	< 0.2		< 0.2	< 0.2
Hexane	µg/L	5	EPA 8260	19-Jul-19/R	< 5		< 5	< 5

Michelle Dubien
Lab Manager

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DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

	Client I.D.				MW19-3	MW04-6	MW19-1	MW19-4
	Sample I.D.				B19-21399-1	B19-21399-2	B19-21399-3	B19-21399-4
	Date Collected				12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Methyl Ethyl Ketone	µg/L	20	EPA 8260	19-Jul-19/R	< 20		< 20	< 20
Methyl Isobutyl Ketone	µg/L	20	EPA 8260	19-Jul-19/R	< 20		< 20	< 20
Methyl-t-butyl Ether	µg/L	2	EPA 8260	19-Jul-19/R	< 2		< 2	< 2
Dichloromethane (Methylene Chloride)	µg/L	5	EPA 8260	19-Jul-19/R	< 5		< 5	< 5
Styrene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Tetrachloroethane,1,1,2,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Toluene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Trichloroethane,1,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Trichlorofluoromethane	µg/L	5	EPA 8260	19-Jul-19/R	< 5		< 5	< 5
Vinyl Chloride	µg/L	0.2	EPA 8260	19-Jul-19/R	< 0.2		< 0.2	< 0.2
Xylene, m,p-	µg/L	1.0	EPA 8260	19-Jul-19/R	< 1.0		< 1.0	< 1.0
Xylene, o-	µg/L	0.5	EPA 8260	19-Jul-19/R	< 0.5		< 0.5	< 0.5
Xylene, m,p,o-	µg/L	1.1	EPA 8260	19-Jul-19/R	< 1.1		< 1.1	< 1.1
PHC F1 (C6-C10)	µg/L	50	MOE E3421	19-Jul-19/R	< 50	< 50	< 50	< 50
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	16-Jul-19/K	< 50	< 50	< 50	< 50
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	16-Jul-19/K	< 400	< 400	< 400	1300
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	16-Jul-19/K	< 400	< 400	< 400	< 400

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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Final Report

C.O.C.: G80004 **REPORT No. B19-21399 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-6	MW04-5	Duplicate	Trip Blank
			Sample I.D.		B19-21399-5	B19-21399-6	B19-21399-7	B19-21399-8
			Date Collected		12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Acetone	µg/L	30	EPA 8260	19-Jul-19/R		< 30	< 30	< 30
Benzene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	2	EPA 8260	19-Jul-19/R		< 2	< 2	< 2
Bromoform	µg/L	5	EPA 8260	19-Jul-19/R		< 5	< 5	< 5
Bromomethane	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.2	EPA 8260	19-Jul-19/R		< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Chloroform	µg/L	1	EPA 8260	19-Jul-19/R		< 1	< 1	< 1
Dibromochloromethane	µg/L	2	EPA 8260	19-Jul-19/R		< 2	< 2	< 2
Dichlorobenzene,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichlorobenzene,1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichlorobenzene,1,4-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	µg/L	2	EPA 8260	19-Jul-19/R		< 2	< 2	< 2
Dichloroethane,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloroethane,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloroethylene,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloroethene, cis-1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloroethene, trans-1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloropropane,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloropropene, cis-1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloropropene, trans-1,3-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dichloropropene 1,3- cis+trans	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Dibromoethane,1,2- (Ethylene Dibromide)	µg/L	0.2	EPA 8260	19-Jul-19/R		< 0.2	< 0.2	< 0.2
Hexane	µg/L	5	EPA 8260	19-Jul-19/R		< 5	< 5	< 5

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G80004 **REPORT No. B19-21399 (ii)**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Natalia Baranova

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 15-Jul-19
DATE REPORTED: 22-Jul-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

			Client I.D.		MW19-6	MW04-5	Duplicate	Trip Blank
			Sample I.D.		B19-21399-5	B19-21399-6	B19-21399-7	B19-21399-8
			Date Collected		12-Jul-19	12-Jul-19	12-Jul-19	12-Jul-19
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Methyl Ethyl Ketone	µg/L	20	EPA 8260	19-Jul-19/R		< 20	< 20	< 20
Methyl Isobutyl Ketone	µg/L	20	EPA 8260	19-Jul-19/R		< 20	< 20	< 20
Methyl-t-butyl Ether	µg/L	2	EPA 8260	19-Jul-19/R		< 2	< 2	< 2
Dichloromethane (Methylene Chloride)	µg/L	5	EPA 8260	19-Jul-19/R		< 5	< 5	< 5
Styrene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,2,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,2-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	µg/L	5	EPA 8260	19-Jul-19/R		< 5	< 5	< 5
Vinyl Chloride	µg/L	0.2	EPA 8260	19-Jul-19/R		< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	1.0	EPA 8260	19-Jul-19/R		< 1.0	< 1.0	< 1.0
Xylene, o-	µg/L	0.5	EPA 8260	19-Jul-19/R		< 0.5	< 0.5	< 0.5
Xylene, m,p,o-	µg/L	1.1	EPA 8260	19-Jul-19/R		< 1.1	< 1.1	< 1.1
PHC F1 (C6-C10)	µg/L	50	MOE E3421	19-Jul-19/R			< 50	
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	16-Jul-19/K	< 50		< 50	
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	16-Jul-19/K	< 400		< 400	
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	16-Jul-19/K	< 400		< 400	

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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Final Report

C.O.C.: G92125 **REPORT No. B19-38094**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Nov-19
DATE REPORTED: 02-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	1	Kingston	KPR	26-Nov-19	C-PHC-W-001 (k)	MOE E3421
PHC(F1)	1	Richmond Hill	JE	27-Nov-19	C-VPHW-01 (rh)	MOE E3421

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G92125 **REPORT No. B19-38094**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Nov-19
DATE REPORTED: 02-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

	Client I.D.		MW19-4				O. Reg. 153	
	Sample I.D.		B19-38094-1				Tbl. 3 - NPGW	Tbl. 7 - NPGW
	Date Collected		25-Nov-19					
Parameter	**Units**	**R.L.**						
PHC F1 (C6-C10)	µg/L	50	< 50				750	420
PHC F2 (>C10-C16)	µg/L	50	< 50				150	150
PHC F3 (>C16-C34)	µg/L	400	< 400				500	500
PHC F4 (>C34-C50)	µg/L	400	< 400				500	500

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

M. Dubien

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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Final Report

C.O.C.: G92125 **REPORT No. B19-38094**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 25-Nov-19
DATE REPORTED: 02-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G92137 **REPORT No. B19-39978**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 11-Dec-19
DATE REPORTED: 17-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	1	Kingston	KPR	13-Dec-19	C-PHC-W-001 (k)	MOE E3421
PHC(F1)	1	Richmond Hill	JE	13-Dec-19	C-VPHW-01 (rh)	MOE E3421

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

Michelle Dubien
Lab Manager

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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Final Report

C.O.C.: G92137 **REPORT No. B19-39978**

Report To:

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Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 11-Dec-19
DATE REPORTED: 17-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

	Client I.D.		MW04-6				O. Reg. 153	
	Sample I.D.		B19-39978-1				Tbl. 3 - NPGW	Tbl. 7 - NPGW
	Date Collected		11-Dec-19					
Parameter	**Units**	**R.L.**						
PHC F1 (C6-C10)	µg/L	50	< 50				750	420
PHC F2 (>C10-C16)	µg/L	50	< 50				150	150
PHC F3 (>C16-C34)	µg/L	400	< 400				500	500
PHC F4 (>C34-C50)	µg/L	400	< 400				500	500

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G92137 **REPORT No. B19-39978**

Report To:

XCG Consulting Limited
4 Cataraqui St, Suite 100, Woolen Mill, East Wing
Kingston ON K7K 1Z7 Canada
Attention: Kamin Paul

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 11-Dec-19
DATE REPORTED: 17-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 1-898-25-03
P.O. NUMBER:
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - NPGW - Table 3 - Non-Potable Ground Water
Tbl. 7 - NPGW - Table 7 - Non-Potable Ground Water Soil Std

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

APPENDIX D
COMMUNICATION RECORDS

From: Crossley, Frank (MOECC) [mailto:Frank.Crossley@ontario.ca]
Sent: April-01-15 5:36 PM
To: Kevin Shipley; Benesch, Katrina (MOECC)
Cc: Taylor, Peter (MOECC); Faaren, Greg (MOECC); Ash, Rosemary (MOECC); Stephenson, Kyle (MOECC) Subject:
RE: Naturally elevated barium in the Kingston area

Hi Kevin

Barium in soils is naturally elevated in the Kingston area. This is based on numerous soil sample results from the Kingston area.

The Table 2 and Table 3 cleanup standards from the 'Soils, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA' (MOE, 2011) for barium is 390 ug/g (R/P/I). Typically in the Kingston area the barium concentrations range naturally up to 550 ug/g.

Thanks

frank

From: Kevin Shipley [mailto:kevin.shipley@xcg.com]
Sent: March 23, 2015 11:21 AM
To: Benesch, Katrina (MOECC)
Subject: Naturally elevated barium in the Kingston area

Katrina,

This is to follow up on the telephone conversation you and I had on March 11, 2015. During that conversation, you said that Rosemary Ash of the Brownfields Filing and Review group in Toronto said it would be possible to file a RSC for a site with a barium concentration exceeding the applicable MOECC site condition standard, provided that multiple lines of evidence are presented in the Phase Two Conceptual Site Model making it clear that the barium exceedance is due to naturally occurring barium in the soil.

You mentioned during our call that Frank Crossley is willing to write a memo indicating that it is his opinion that barium is present at elevated concentrations in certain soils in the Kingston area. Inclusion of such a memo in my RSC submission would be very helpful so I would request that you ask Frank to proceed with preparing the memo. Please let me know what his timeline is for completing the memo.

The location of the property with the barium exceedance is as follows: 493-497 Princess Street, 19-23 Chatham Street, and 2 and 10 Creighton Street, Kingston, Ontario. A single barium exceedance was found on this property although a number of other barium concentrations closely approaching the MOECC Table 3 standard were found (e.g., 315, 334 and 376 ug/g). The barium exceedance had a concentration of 451 ug/g compared to the applicable Table 3 standard for barium of 390 ug/g. The description of the soil type for the sample with the elevated barium concentration was "dense medium brown clay."

I was wondering if you could also ask Frank about other metals that he believes are naturally occurring in soils in the Kingston area. Possible examples include beryllium and vanadium. If he were to include discussions on several such metals in his memo, it is possible that the memo could be useful to assist in filing RSCs for other sites in the future. However, I would not want this scope expansion to extend Frank's estimated time for preparing the memo, so if it's quicker just to focus on barium, that's fine with me.

Kevin

Kevin Shipley, M.A.Sc., P.Eng., EP(CEA), EP, QPRA Partner

XCG Consultants Ltd. Environmental Engineers & Scientists
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