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January 5, 2021

**PHASE II
ENVIRONMENTAL SITE ASSESSMENT
3064 AND 3076 PARKEDALE AVENUE
BROCKVILLE, ONTARIO**

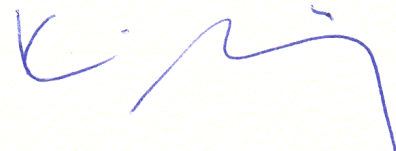
Prepared for:

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Attention: Mr. Jake Krzyzanowski



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ES 1. EXECUTIVE SUMMARY

XCG Consulting Limited (XCG) was retained by Mr. Jake Krzyzanowski on behalf of Wellings 2019 Inc. (the client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 3064 and 3076 Parkedale Avenue, Brockville, Ontario (subject property or site).

The subject site consists of two residential homes comprising a total footprint of 236 m² (2,540 ft²) (3064 Parkedale Avenue – 109 m² and 3076 Parkedale Avenue – 127 m²) located on a 5.32-hectare (13.15-acre) parcel of land north of Parkedale Avenue and west of Stewart Boulevard. The subject property is zoned as a holding zone and commercial zone and is used for residential purposes.

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, 3064 and 3076 Parkedale Avenue, Brockville, Ontario,” dated September 8, 2020.

Based on the findings of XCG’s 2020 Phase I ESA, XCG proceeded with a Phase II ESA to investigate 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 3064 and 3076 Parkedale Avenue in Brockville, Ontario, are summarized below:

- Two boreholes were advanced on the northeastern portion of the subject property to determine if the presence of USTs (and a possible fuel outlet property) on the neighbouring property at 801A Chelsea Street has impacted the groundwater on the subject site.
- Both boreholes were instrumented as monitoring wells and groundwater samples were collected and analyzed for petroleum hydrocarbons (PHCs) in the F1 to F4 ranges and volatile organic compounds (VOCs).
- A domestic well water sample was collected from 3076 Parkedale Avenue to determine whether bacteriological problems identified by the resident of the home persisted.
- 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 Ministry¹) was consulted in the assessment of groundwater quality on the subject property. MOE Table 2 standards were used to evaluate groundwater quality. The domestic well water results were compared to

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).



the Ontario Drinking Water Quality Standards published in Schedule 1 of O. Reg. 169/03.

- No exceedances of the MOE Table 2 standards for PHCs (F1 – F4) or VOCs were found in the groundwater samples from the monitoring wells, and no exceedances of the Ontario Drinking Water Quality Standards for bacteriological parameters were found in the domestic well water sample.

The overall conclusion of this Phase II ESA of the subject property located at 3064 and 3076 Parkedale Avenue, Brockville, Ontario, is that no evidence was found of environmental impacts either from the neighbouring property to the northeast, or from bacteriological contamination in domestic well water at 3076 Parkedale Avenue.

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.



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1. INTRODUCTION

1.1 Site Description

XCG Consulting Limited (XCG) was retained by Mr. Jake Krzyzanowski on behalf of Wellings 2019 Inc. (the client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 3064 and 3076 Parkedale Avenue, Brockville, Ontario (subject property or site).

The subject site consists of two residential homes comprising a total footprint of 236 m² (2,540 ft²) (3064 Parkedale Avenue – 109 m² and 3076 Parkedale Avenue – 127 m²) located on a 5.32-hectare (13.15-acre) parcel of land north of Parkedale Avenue and west of Stewart Boulevard. The subject property is zoned as a holding zone and commercial zone and is used for residential purposes.

The two on-site residential dwellings are located on the southeastern side of the subject property. The residential dwellings each have landscaped areas to the north, west, and south of residential homes. The areas north and west of the residential dwellings and their landscaped areas is heavily vegetated.

1.2 Background

Based on the results of the 2020 Phase I ESA completed by XCG (September 8, 2020), including the site visit, information provided by persons knowledgeable about the subject property, records reviewed, the historical review of the subject property, and pending receipt and review of the response from the Ministry of the Environment, Conservation and Parks (MECP, or the Ministry²) 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 Previous Investigations and Assessment Reports

As part of the 2020 Phase I ESA, XCG reviewed the following report previously prepared for the subject site:

XCG Consultants Ltd., "Enhanced Phase I/ Phase II Environmental Site Assessment, 3064 Parkedale Avenue and 3076 Parkedale Avenue, Brockville, Ontario," dated June 12, 2003.

The 2003 Enhanced Phase I/ Phase II ESA was completed for Mr. Donald Perrin, the former owner of the subject site, for the purposes of facilitating the redevelopment of the subject site for commercial purposes. The Enhanced Phase I/ II ESA identified two former landfills 1-kilometre (City of Brockville landfill – closed in 1968) and 1.5-kilometres (closed in 1968) to the southwest (cross-gradient) of the subject site. The landfill located 1.5-kilometres to the southwest of the subject site was known to have impacted the local groundwater quality. As such, as a precautionary measure, the groundwater quality on the subject site was investigated as part of the 2003 Enhanced Phase I/II ESA. In addition, several areas of fill of unknown quality were identified

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).



by the property owner in 2003 on the western portion of the subject property. The property owner in 2003 also indicated that some gravel fill was brought on-site to pave the gravel driveways. The 2003 Enhanced Phase I/Phase II ESA also investigated the quality of the fill placed on the subject site.

As part of the 2003 Enhanced Phase I/Phase II ESA, seven test pits were advanced on the subject property. Three representative soil samples were submitted to the laboratory for analysis of metals and polycyclic aromatic hydrocarbons (PAHs) since these were considered indicators of imported contaminated fill. Three potable groundwater wells were also sampled for volatile organic compounds (VOCs) since they are considered indicators of landfill impacts. The 2003 Enhanced Phase I ESA did not sample or analyze the groundwater for the presence of bacteria.

The 2003 Enhanced Phase I/II ESA identified no exceedances of the MOE 1997 Guideline for use at contaminated sites in Ontario, Table A site condition standards (SCS) or the Ontario Drinking Water Standards (ODWS). Table A SCS represent criteria for properties located in a potable groundwater setting. For the purpose of the 2020 Phase I ESA, the 2003 analytical results for soil and groundwater samples were compared to the MOE Table 2 SCS for residential/ parkland/ institutional property use in potable groundwater conditions, published by the MOE in the “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,” dated April 15, 2011 (2011 MOE Standards), and the current ODWS. As stated above, the water samples collected from the on-site potable water supply wells were not sampled for bacteria.

The 2003 Enhanced Phase I/II ESA also identified several USTs on the following nearby properties:

Location	Distance and location	TSSA Response
801 A Chelsea Street	Approximately 90 m northeast of subject site (up/cross gradient)	Fuel outlet – USTs present
335 Stewart Boulevard	Approximately 350 m southeast of subject site (down gradient)	Fuel outlet – USTs present
340 Stewart Boulevard	Approximately 250 m southeast of subject site (down gradient)	Fuel outlet – USTs present
355 Stewart Boulevard	Approximately 300 m east of subject site (cross gradient)	USTs Present

Several USTs, including at least one fuel outlet, were identified to be present on the nearby up/cross-gradient properties in 2003. Releases from these USTs to the subsurface could impact the groundwater quality on the subject site. Impacts to the on-site groundwater, if any, could affect the use of the subject site for residential purposes.

Additional information from the 2003 Enhanced Phase I/Phase II ESA pertinent to this Phase I EA are referenced throughout this report, as applicable.



1.2.2 2020 Phase I ESA – Additional Findings

The 2020 Phase I ESA investigation confirmed the above potential sources of environmental impacts, and also identified the following additional potential sources of environmental impacts:

Utility Services

According to information provided by the tenant of 3076 Parkedale Avenue at the time of the 2020 Phase I ESA, the on-site potable water was reported to have bacterial contamination.

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.
- Two boreholes, each extending to below the water table [approximately 0.6 m below ground surface (bgs) based on field observations] were advanced on the northeastern portion of the property.
- Soil samples were collected from each borehole and field screened for evidence of impacts, including staining, chemical odours, and the presence of total organic vapours (TOVs), which were measured using a handheld gas meter (e.g. photoionization detector).
- The two boreholes were instrumented as monitoring wells and the well screens were installed to attempt to straddle the water table. Due to the shallow nature of the groundwater in this location, as well as the mandatory minimum depth of bentonite required for proper well construction, the water in the wells was observed to be above the well screens.
- Prior to sampling the monitoring wells, water levels were measured in them using a Slope Indicator water level tape.
- The monitoring wells were developed, purged, and then sampled using the low flow sampling method. One sample from each of the two monitoring wells was submitted to a laboratory for analyses of VOCs and petroleum hydrocarbons (PHCs) in the F1 to F4 ranges. One blind duplicate and one trip blank were also collected by XCG for quality assurance/quality control (QA/QC) purposes. The blind duplicate was analyzed for VOCs and PHCs (F1 to F4), and the trip blank was analyzed for VOCs.



- One sample was obtained from the domestic well servicing 3076 Parkedale Avenue. The sample was obtained before any water treatment system that may be present at the home. The water was run for approximately five minutes prior to sampling, in order to obtain a sample that was representative of the water in the well. The sample was submitted for analyses of bacteriological parameters including total coliforms, fecal coliforms, and *e. coli*.



2. FIELD INVESTIGATION METHODOLOGY

The field investigation activities for this Phase II ESA were conducted by Ms. Kamin Paul of XCG as follows:

- Borehole drilling and monitoring well installation – November 16, 2020;
- Monitoring well development – November 17, 2020; and
- Groundwater and domestic well sampling – November 19, 2020.

The Phase II ESA work was conducted under the supervision of 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 QA/QC program.

2.1 Summary of Sampling and Analytical Program

The specific locations investigated, rationale, and analyses performed on groundwater and domestic well samples collected during the environmental investigation activities are summarized in Table 1 below. 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
DW 3076	Residential home at 3076 Parkedale Avenue	According to information provided by the tenant of 3076 Parkedale Avenue during the 2020 Phase I ESA, the on-site potable water has been reported to have bacterial contamination	- E.Coli - Fecal Coliforms - Total Coliforms
MW20-1	Northeastern corner of the subject site	Underground storage tanks (USTs) and possible a fuel outlet has been identified in the nearby up/cross-gradient property located at 801A Chelsea Street. Releases from these USTs to the subsurface, if any, could affect the groundwater quality on the subject site. Impacts to the on-site groundwater could affect the use of the subject site for residential purposes.	- VOCs - PHCs F1 – F4
MW20-2	Northeastern portion of the subject site	Underground storage tanks (USTs) and possible a fuel outlet has been identified in the nearby up/cross-gradient property located at 801A Chelsea Street. Releases from these USTs to the subsurface, if any, could affect the groundwater quality on the subject site. Impacts to the on-site groundwater could affect the use of the subject site for residential purposes.	- VOCs - PHCs F1 – F4



Sample ID	Location	Rationale	Analytical
Notes:			
VOCs		Volatile organic compounds	
PHCs F1 - F4		Petroleum hydrocarbon fractions F1 to F4	

2.2 **Monitoring Well Installation**

The borehole drilling and monitoring well installation was completed on November 16, 2020, under XCG's direction, by Strata Drilling Group, of Ottawa, Ontario. The boreholes were drilled using a manual handheld auger based on information provided by the driller indicating that a machine drill might not be able to access the investigation area. During drilling, soil samples were collected from soil that was removed from the auger and field screened for evidence of impacts, including staining, chemical odours, and the presence of TOVs, which were measured using a photoionization detector (PID). The borehole/monitoring well locations are shown on Figure 1 at the end of text.

A total of two boreholes were advanced to depths ranging between 1.37 and 1.45 metres bgs with monitoring wells installed in both. Groundwater was encountered at a depth of approximately 0.61 metres bgs during the drilling activities. After the monitoring wells had been installed, groundwater was observed at depths ranging from 1.19 to 1.27 metres below top of pipe (m btop). Based on information provided by the driller, an impenetrable surface was encountered at the base depth of each of the boreholes advanced on the subject site. It is likely that the impenetrable surface encountered during drilling is bedrock. The boreholes could not be advanced past this impenetrable layer with a handheld auger and were therefore completed at these depths. The boreholes were developed as monitoring wells after confirmation of the presence of groundwater in the advanced boreholes.

The well installation details are included on the borehole logs in Appendix B. Monitoring well construction details are summarised in Table 2 at the end of text.

2.3 **Monitoring Well Development**

The monitoring wells were developed by purging both wells dry about six times. The wells were developed using Waterra inertial pumps (with foot valves). Both the monitoring wells exhibited a slow recovery time. No sheen or odour was detected during well development or sampling.

2.4 **Groundwater Sampling**

Groundwater sampling was conducted on November 19, 2020. The depth to static water level (SWL) was measured using a slope Indicator water level tape meter prior to and during monitoring well sampling. An oil/water interface meter was also used to check for the presence of a separate phase free product layer (if any) in both 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 Paracel for analyses of the following: PHCs (F1-F4) and VOCs.



2.5 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. A blind duplicate sample was collected and submitted as part of the groundwater investigation. A trip blank was also submitted for analysis of VOCs as part of the groundwater investigation.

All samples were submitted for analysis to Paracel, which follows strict QA/QC measures. Paracel'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 Paracel.



3. FIELD OBSERVATIONS

3.1 Soil Quality

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

Based on the soil quality observations made during the borehole advancement, the overburden at the subject site consists of fine to medium grained sand with trace clay and some stones underlain by an impenetrable layer that is inferred to be bedrock. 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. The turbidity was cleared through the purging.



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 groundwater quality on the subject property. Table 2 Full Depth Generic Site Conditions Standards in a Potable Ground Water Condition for residential/parkland/institutional land use (MOE Table 2), were used to evaluate groundwater quality. The domestic well water results for bacteriological parameters were compared to the Ontario Drinking Water Quality Standards published in Schedule 1 of O. Reg. 169/03.

The residential dwellings are supplied with potable water from on-site groundwater wells. The nearest surface water body based on information available during the 2020 Phase One ESA is Grant’s creek and is located approximately 250 m north of the subject site.

The analytical results were compared to the MOE Table 2 standards for coarse textured soil, based on observations of the presence of sandy based soils, the inferred depth to bedrock across the site (the 2003 enhanced Phase I/II ESA did not identify bedrock up to depths of 3.75 metres bgs), and potable water conditions.

4.2 Analytical Results for Groundwater

The analytical results for PHC (F1-F4) (Table 4) and VOCs (Table 5) in groundwater are presented at the end of text. Laboratory Certificates of analyses are included in Appendix C.

4.3 Discussion of Analytical Results

As previously mentioned in Section 4.1, the groundwater results were compared to the MOE Table 2 standards.

Below is a summary of all the analytical results for groundwater and domestic well sampling conducted in 2020. The analytical results are also presented in tabulated form at the end of text in Tables 3 to 5.

Bacteriological Parameters

All concentrations of the bacteriological parameters (*E. Coli*, Fecal Coliforms, and Total coliforms) were lower than the laboratory method detection limits (MDLs) and were therefore considered to meet the Ontario Drinking Water Quality Standards.

PHCs

No exceedances of PHCs (F1 – F4) in groundwater were identified during the 2020 Phase II ESA.

VOCs

No exceedances of VOCs were identified in groundwater during the 2020 sampling round.



5. LIMITATIONS AND CONCLUSIONS

5.1 Limitations

This Phase II ESA focussed on identifying actual contamination on the subject property located at 3064 and 3076 Parkedale Avenue in Brockville, 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 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 Wellings 2019 Inc. 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 Wellings 2019 Inc. is at the sole risk of those parties.

5.2 Conclusions

The key findings of the Phase II ESA conducted at 3064 and 3076 Parkedale Avenue in Brockville, Ontario, are summarized below:

- Two boreholes were advanced on the northeastern portion of the subject property to determine if the presence of USTs (and a possible fuel outlet property) on the neighbouring property at 801A Chelsea Street has impacted the groundwater on the subject site.
- Both boreholes were instrumented as monitoring wells and groundwater samples were collected and analyzed for petroleum hydrocarbons (PHCs) in the F1 to F4 ranges and volatile organic compounds (VOCs).
- A domestic well water sample was collected from 3076 Parkedale Avenue to determine whether bacteriological problems identified by the resident of the home persisted.
- 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 groundwater quality on the subject property. MOE Table 2 standards were used to evaluate groundwater quality. The domestic well water results were compared to the Ontario Drinking Water Quality Standards published in Schedule 1 of O. Reg. 169/03.



- No exceedances of the MOE Table 2 standards for PHCs (F1 – F4) or VOCs were found in the groundwater samples from the monitoring wells, and no exceedances of the Ontario Drinking Water Quality Standards for bacteriological parameters were found in the domestic well water sample.

The overall conclusion of this Phase II ESA of the subject property located at 3064 and 3076 Parkedale Avenue, Brockville, Ontario, is that no evidence was found of environmental impacts either from the neighbouring property to the northeast, or from bacteriological contamination in domestic well water at 3076 Parkedale Avenue.



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, 3064 and 3076 Parkedale Avenue, Brockville, Ontario,” dated September 8, 2020.
5. O. Reg. 169/03 (last amended by O. Reg. 457/16) Ontario Drinking Water Quality Guidelines under Safe Drinking Water Act, 2002.



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) 19-Nov-2020	Sand Pack Interval (mbgs)	Screen Interval (mbgs)	Bentonite Interval (mbgs)	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)
XCG Well Installation 2020									
MW20-1	16-Nov-2020	-	2.14	1.23	0.61 - 1.37	0.76 - 1.37	0 - 0.76	-	-
MW20-2	16-Nov-2020	-	2.09	1.29	0.61 - 1.37	0.76 - 1.37	0 - 0.76	-	-
Notes:									
- Not available									

Table 3 Summary of Analytical Results for Bacteriological Parameters in Domestic Water

Parameter	Units	MDL	Ontario Drinking Water Standards	Sample
				DW 3076
				2047488-01
				11/19/2020 11:40 AM
E. Coli	CFU/100 mL	1	Not Detectable	ND (1)
Fecal Coliforms	CFU/100 mL	1	-	ND (1)
Total Coliforms	CFU/100 mL	1	Not Detectable	ND (1)
Notes:				
-	Not available			
ND	Concentration is not detectable - less than the laboratory Method Detection Limit (MDL)			
100	Concentration exceeds the Ontario Drinking Water standards			

Table 4 Summary of Petroleum Hydrocarbons in Groundwater

Parameter	Units	MDL	MOE Table 2	Sample		
				MW 20-2 2047459-01	MW 20-1 2047459-02	MW A (Duplicate of MW20-1) 2047459-03
				11/19/2020 10:00 AM	11/19/2020 10:45 AM	11/19/2020 10:45 AM
F1 PHCs (C6-C10)	ug/L	25	750	ND (25)	ND (25)	ND (25)
F2 PHCs (C10-C16)	ug/L	100	150	ND (100)	ND (100)	ND (100)
F3 PHCs (C16-C34)	ug/L	100	500	ND (100)	ND (100)	ND (100)
F4 PHCs (C34-C50)	ug/L	100	500	ND (100)	ND (100)	ND (100)
Notes:						
-	Not available					
ND	Concentration is not detectable - less than the laboratory Method Detection Limit (MDL)					
100	Concentration exceeds MOE Table 2 Standards					

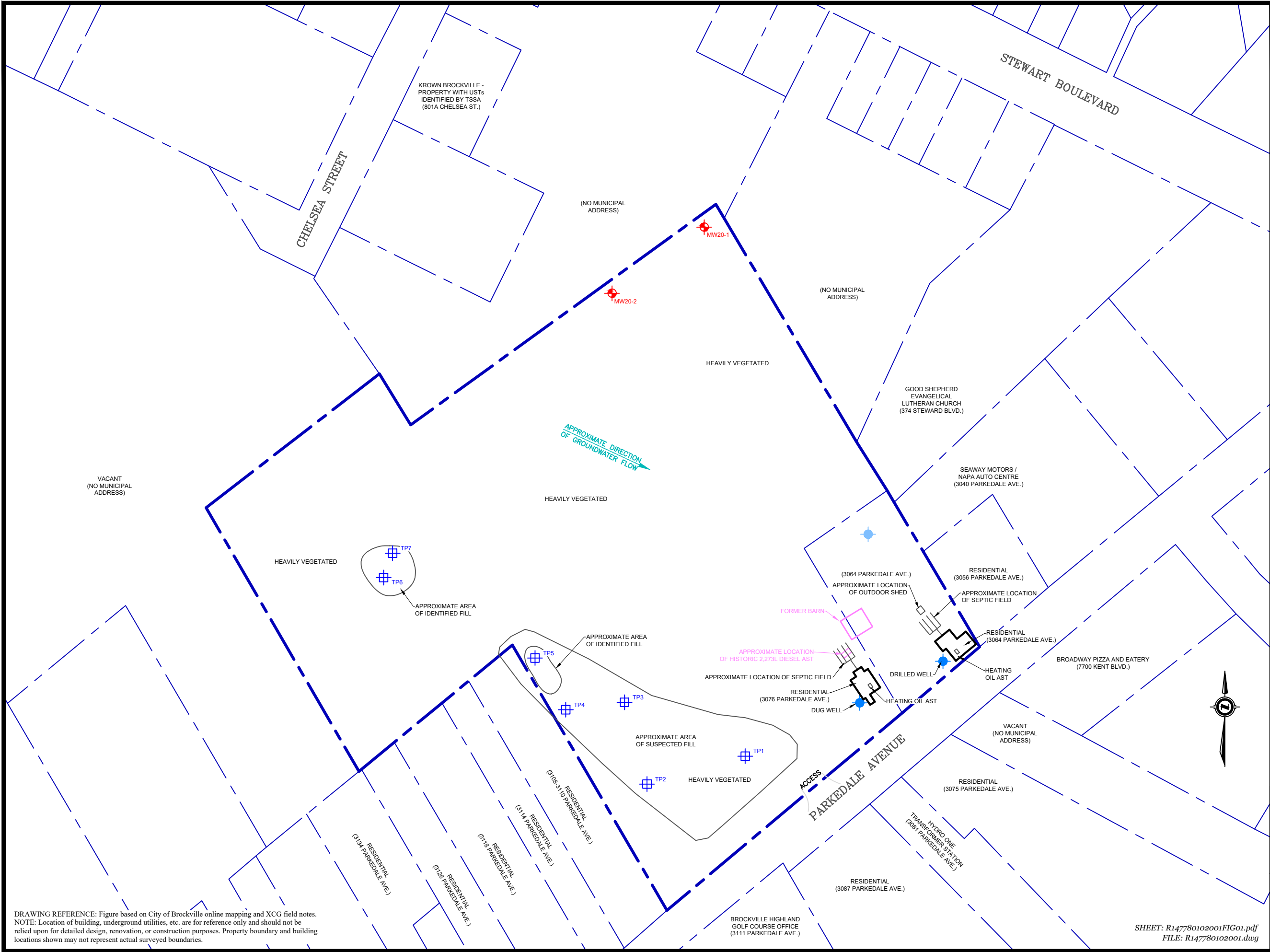
Table 5 Summary of Volatile Organic Compounds in Groundwater

Parameter	Units	MDL	MOE Table 2	Sample			
				MW 20-2 2047459-01	MW 20-1 2047459-02	MW A (Duplicate of MW20-1) 2047459-03	Trip Blank 2047459-04
				11/19/2020 10:00 AM	11/19/2020 10:45 AM	11/19/2020 10:45 AM	11/17/2020 01:00 PM
Acetone	ug/L	5.0	2700	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ug/L	0.5	16	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ug/L	0.5	25	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ug/L	0.5	0.89	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	ug/L	0.2	0.79	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	ug/L	0.5	30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ug/L	0.5	2.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ug/L	0.5	25	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ug/L	1.0	590	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	ug/L	0.5	3	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	ug/L	0.5	59	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ug/L	0.5	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	ug/L	0.5	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	ug/L	0.5	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	ug/L	0.5	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	0.5	2.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	ug/L	1.0	51	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	1800	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	ug/L	5.0	640	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	ug/L	2.0	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	ug/L	5.0	50	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	ug/L	0.5	5.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	ug/L	0.5	1.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ug/L	0.5	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	0.5	24	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ug/L	0.5	200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ug/L	0.5	4.7	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ug/L	1.0	150	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	ug/L	0.5	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	0.5	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	0.5	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	0.5	300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Notes:							
-	Not available						
ND	Concentration is not detectable - less than the laboratory Method Detection Limit (MDL)						
100	Concentration exceeds MOE Table 2 Standards						



FIGURE

FIGURE



- LEGEND:**
- APPROXIMATE SUBJECT PROPERTY BOUNDARIES
 - APPROXIMATE PROPERTY BOUNDARIES
 - STRUCTURE
 - FORMER FEATURES
 - GRASSED AREA
 - CATCH BASIN
 - APPROXIMATE TEST PIT LOCATION (2003, XCG)
 - WATER WELL
 - WATER WELL (NOT LOCATED)
 - APPROXIMATE MONITORING WELL LOCATION (NOV. 2020, XCG)



PHASE II ESA
SITE PLAN

3064-3076 PARKEDALE AVENUE
BROCKVILLE, ONTARIO



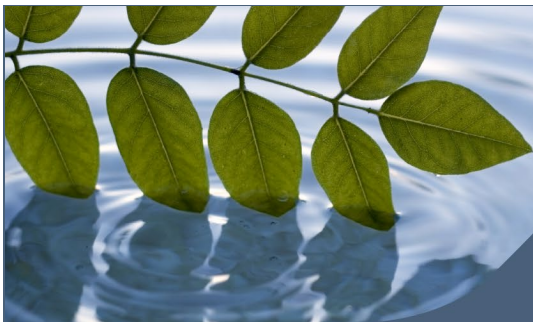
DATE	JOB NO.	FIGURE NO.
DEC. 2020	1-4778-01-02	1

DRAWING REFERENCE: Figure based on City of Brockville 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.

SHEET: R147780102001FIG01.pdf
FILE: R147780102001.dwg



APPENDIX A
QUALIFICATIONS OF XCG PROJECT PERSONNEL



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)

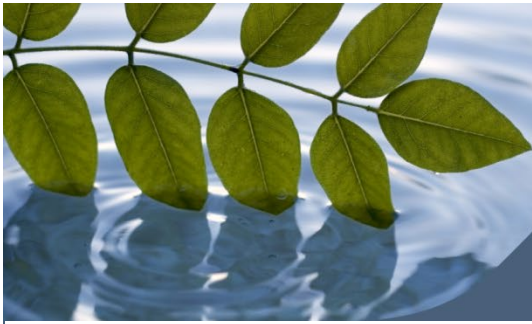
- Conducted several Phase I ESAs for commercial and residential properties including apartment buildings, recreational centers, and commercial office buildings. The Phase I ESAs included site visits, a review of historical information related to the site and neighbouring properties, contacting regulatory 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.



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

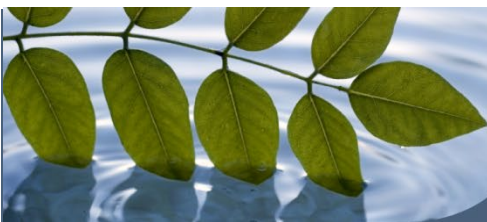
Professional Affiliations

- 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 QPRA 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 QPRA, 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
BOREHOLE LOGS



Project #: 1-4778-01-02

Project: Phase II ESA

Client: Wellings 2019 Inc.

Location: 3064 and 3076 Parkedale Avenue, Brockville, Ontario

Privileged and Confidential

LOG OF: MW20-1

Driller: Strata Drilling

Drill Method: Hand Auger

Sample Method: N/A

Monitoring Well Diameter: 0.03 m

Start Date: November 16, 2020

Completed: November 16, 2020

Checked By: KBS

Logged By: KPP

Depth	Sample No.	Recovery (%)	Vapour Conc (ppm)	Graphic Log	Geology Description	Elevation (masd)	Well Completion	Well Details
ft m								
-3.0								
-2.5								
-2.0								
-1.5								Stickup casing
-1.0								
-0.5								
0.0					Ground Surface			
0.5	SS1		0.6		SAND With stones and trace clay, medium dense, fine to medium grained, brown, moist, no odour, no staining.	98.65		Bentonite pellets
1.0								
1.5								
2.0								
2.5					SAND With stones and trace clay, medium dense, fine grained, brown, wet, no odour, no staining.			
3.0								
3.5					Encountered impenetrable (by hand auger) surface at 1.37 m.			
4.0	SS2		0.4			97.89		Sand pack 5 cm Dia. 10-Slot PVC Screen
4.5								
5.0					End of Borehole			
5.5								
6.0								

Groundwater Elevation: 98.93 masd (,)

T.O.P. Elevation: 100.16 masd

Ground Surface Elevation: 99.26 masd

FOR ENVIRONMENTAL PURPOSES ONLY

Screening Tool: MiniRAE 2000

Sheet: 1 of 1



Project #: 1-4778-01-02

Project: Phase II ESA

Client: Wellings 2019 Inc.

Location: 3064 and 3076 Parkedale Avenue, Brockville, Ontario

Privileged and Confidential

LOG OF: MW20-2

Driller: Strata Drilling

Drill Method: Hand Auger

Sample Method: N/A

Monitoring Well Diameter: 0.03 m

Start Date: November 16, 2020

Checked By: KBS

Completed: November 16, 2020

Logged By: KPP

Depth	Sample No.	Recovery (%)	Vapour Conc (ppm)	Graphic Log	Geology Description	Elevation (masd)	Well Completion	Well Details
ft m -3.0 -2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0					Ground Surface			
	SS1		0.4		SAND With stones and trace clay, medium dense, fine to medium grained, brown, moist, no odour, no staining.	98.67		Stickup casing
	SS2		1.6		SAND With stones and trace clay, medium dense, fine grained, brown, wet, no odour, no staining. Encountered impenetrable (by hand auger) surface at 1.45 m.			Bentonite pellets
	SS3		1.1			97.83		Sand pack 5 cm Dia. 10-Slot PVC Screen
					End of Borehole			Fall Back

Groundwater Elevation: 98.71 masd (,)

Screening Tool: MiniRAE 2000

T.O.P. Elevation: 100.00 masd

FOR ENVIRONMENTAL PURPOSES ONLY

Ground Surface Elevation: 99.28 masd

Sheet: 1 of 1



APPENDIX C
LABORATORY CERTIFICATES OF ANALYSIS

Certificate of Analysis

XCG Consulting Limited (Kingston)

4 Cataraqui Street, Woolen Mill, East Wing, Suite 100
Kingston, ON K7K 1Z7
Attn: Kamin Paul

Client PO:
Project: 1-4778-01-02
Custody: 130314

Report Date: 25-Nov-2020
Order Date: 19-Nov-2020

Order #: 2047459

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047459-01	MW 20-2
2047459-02	MW 20-1
2047459-03	MW A
2047459-04	Trip Blank

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: XCG Consulting Limited (Kingston)

Client PO:

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 1-4778-01-02

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	20-Nov-20	20-Nov-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	24-Nov-20	24-Nov-20
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	20-Nov-20	20-Nov-20

Certificate of Analysis

Client: XCG Consulting Limited (Kingston)

Client PO:

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 1-4778-01-02

Summary of Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances. Regulatory limits displayed in brackets, (), applies to medium and fine textured soils.

Criteria:

Client ID	Analyte	MDL / Units	Result	Reg 153/04 (2011)-Table 2 Potable Groundwater
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Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

	Client ID:	MW 20-2	MW 20-1	MW A	Trip Blank	Criteria:	
	Sample Date:	19-Nov-2020	19-Nov-2020	19-Nov-2020	17-Nov-2020		
	Sample ID:	2047459-01	2047459-02	2047459-03	2047459-04		
Matrix:	Water	Water	Water	Water			
	MDL/Units					Reg 153/04 (2011)-Table 2 Potable Groundwater	
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	(2,700) 2,700	ug/L
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(5) 5	ug/L
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(16) 16	ug/L
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(25) 25	ug/L
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(0.89) 0.89	ug/L
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	(5) 0.79	ug/L
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(30) 30	ug/L
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(22) 2.4	ug/L
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(25) 25	ug/L
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	(590) 590	ug/L
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(3) 3	ug/L
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(59) 59	ug/L
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(1) 1	ug/L
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(5) 5	ug/L
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(5) 1.6	ug/L
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(14) 1.6	ug/L
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(17) 1.6	ug/L
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(5) 5	ug/L
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5		
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5		
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(0.5) 0.5	ug/L
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	(2.4) 2.4	ug/L

Certificate of Analysis

Client: XCG Consulting Limited (Kingston)

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

	MDL/Units	Client ID:	MW 20-2	MW 20-1	MW A	Trip Blank	Criteria: Reg 153/04 (2011)-Table 2 Potable Groundwater
		Sample Date:	19-Nov-2020	19-Nov-2020	19-Nov-2020	17-Nov-2020	
		Sample ID:	2047459-01	2047459-02	2047459-03	2047459-04	
		Matrix:	Water	Water	Water	Water	
Ethylene dibromide (dibromoethane)	0.2 ug/L		<0.2	<0.2	<0.2	<0.2	(0.2) 0.2 ug/L
Hexane	1.0 ug/L		<1.0	<1.0	<1.0	<1.0	(520) 51 ug/L
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L		<5.0	<5.0	<5.0	<5.0	(1,800) 1,800 ug/L
Methyl Isobutyl Ketone	5.0 ug/L		<5.0	<5.0	<5.0	<5.0	(640) 640 ug/L
Methyl tert-butyl ether	2.0 ug/L		<2.0	<2.0	<2.0	<2.0	(15) 15 ug/L
Methylene Chloride	5.0 ug/L		<5.0	<5.0	<5.0	<5.0	(50) 50 ug/L
Styrene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(5.4) 5.4 ug/L
1,1,1,2-Tetrachloroethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(1.1) 1.1 ug/L
1,1,2,2-Tetrachloroethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(1) 1 ug/L
Tetrachloroethylene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(17) 1.6 ug/L
Toluene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(24) 24 ug/L
1,1,1-Trichloroethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(200) 200 ug/L
1,1,2-Trichloroethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(5) 4.7 ug/L
Trichloroethylene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(5) 1.6 ug/L
Trichlorofluoromethane	1.0 ug/L		<1.0	<1.0	<1.0	<1.0	(150) 150 ug/L
Vinyl chloride	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(1.7) 0.5 ug/L
m,p-Xylenes	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	
o-Xylene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	
Xylenes, total	0.5 ug/L		<0.5	<0.5	<0.5	<0.5	(300) 300 ug/L
4-Bromofluorobenzene	Surrogate		111%	116%	111%	122%	
Dibromofluoromethane	Surrogate		85.8%	83.6%	88.3%	87.0%	
Toluene-d8	Surrogate		108%	106%	108%	106%	
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L		<25	<25	<25	-	(750) 750 ug/L

Certificate of Analysis

Client: XCG Consulting Limited (Kingston)

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

		Client ID:	MW 20-2	MW 20-1	MW A	Trip Blank	Criteria:	
		Sample Date:	19-Nov-2020	19-Nov-2020	19-Nov-2020	17-Nov-2020		
		Sample ID:	2047459-01	2047459-02	2047459-03	2047459-04		
		Matrix:	Water	Water	Water	Water	Reg 153/04 (2011)-Table 2 Potable Groundwater	
		MDL/Units						
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-	(150) 150 ug/L		
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-	(500) 500 ug/L		
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-	(500) 500 ug/L		

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	---------------	------	------------	-----	-----------	-------

Hydrocarbons

F1 PHCs (C6-C10)	ND	25	ug/L
F2 PHCs (C10-C16)	ND	100	ug/L
F3 PHCs (C16-C34)	ND	100	ug/L
F4 PHCs (C34-C50)	ND	100	ug/L

Volatiles

Acetone	ND	5.0	ug/L
Benzene	ND	0.5	ug/L
Bromodichloromethane	ND	0.5	ug/L
Bromoform	ND	0.5	ug/L
Bromomethane	ND	0.5	ug/L
Carbon Tetrachloride	ND	0.2	ug/L
Chlorobenzene	ND	0.5	ug/L
Chloroform	ND	0.5	ug/L
Dibromochloromethane	ND	0.5	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	0.5	ug/L
1,3-Dichlorobenzene	ND	0.5	ug/L
1,4-Dichlorobenzene	ND	0.5	ug/L
1,1-Dichloroethane	ND	0.5	ug/L
1,2-Dichloroethane	ND	0.5	ug/L
1,1-Dichloroethylene	ND	0.5	ug/L
cis-1,2-Dichloroethylene	ND	0.5	ug/L
trans-1,2-Dichloroethylene	ND	0.5	ug/L
1,2-Dichloropropane	ND	0.5	ug/L
cis-1,3-Dichloropropylene	ND	0.5	ug/L
trans-1,3-Dichloropropylene	ND	0.5	ug/L
1,3-Dichloropropene, total	ND	0.5	ug/L
Ethylbenzene	ND	0.5	ug/L
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L
Hexane	ND	1.0	ug/L
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L
Methyl Isobutyl Ketone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
Methylene Chloride	ND	5.0	ug/L
Styrene	ND	0.5	ug/L
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L
Tetrachloroethylene	ND	0.5	ug/L
Toluene	ND	0.5	ug/L
1,1,1-Trichloroethane	ND	0.5	ug/L
1,1,2-Trichloroethane	ND	0.5	ug/L

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	94.8		ug/L		119	50-140			
Surrogate: Dibromofluoromethane	65.6		ug/L		82.0	50-140			
Surrogate: Toluene-d8	86.3		ug/L		108	50-140			

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	95.2		ug/L		119	50-140			
Surrogate: Dibromofluoromethane	76.3		ug/L		95.4	50-140			
Surrogate: Toluene-d8	85.2		ug/L		107	50-140			

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1840	25	ug/L	ND	92.2	68-117			
F2 PHCs (C10-C16)	1380	100	ug/L	ND	86.3	60-140			
F3 PHCs (C16-C34)	3220	100	ug/L	ND	82.2	60-140			
F4 PHCs (C34-C50)	1690	100	ug/L	ND	68.2	60-140			
Volatiles									
Acetone	56.2	5.0	ug/L	ND	56.2	50-140			
Benzene	42.8	0.5	ug/L	ND	107	60-130			
Bromodichloromethane	40.3	0.5	ug/L	ND	101	60-130			
Bromoform	44.6	0.5	ug/L	ND	112	60-130			
Bromomethane	46.9	0.5	ug/L	ND	117	50-140			
Carbon Tetrachloride	42.4	0.2	ug/L	ND	106	60-130			
Chlorobenzene	37.2	0.5	ug/L	ND	93.0	60-130			
Chloroform	39.5	0.5	ug/L	ND	98.8	60-130			
Dibromochloromethane	42.0	0.5	ug/L	ND	105	60-130			
Dichlorodifluoromethane	34.0	1.0	ug/L	ND	85.0	50-140			
1,2-Dichlorobenzene	40.0	0.5	ug/L	ND	100	60-130			
1,3-Dichlorobenzene	39.2	0.5	ug/L	ND	98.0	60-130			
1,4-Dichlorobenzene	41.2	0.5	ug/L	ND	103	60-130			
1,1-Dichloroethane	38.8	0.5	ug/L	ND	96.9	60-130			
1,2-Dichloroethane	40.3	0.5	ug/L	ND	101	60-130			
1,1-Dichloroethylene	46.6	0.5	ug/L	ND	116	60-130			
cis-1,2-Dichloroethylene	45.9	0.5	ug/L	ND	115	60-130			
trans-1,2-Dichloroethylene	40.9	0.5	ug/L	ND	102	60-130			
1,2-Dichloropropane	39.2	0.5	ug/L	ND	98.0	60-130			
cis-1,3-Dichloropropylene	37.6	0.5	ug/L	ND	94.1	60-130			
trans-1,3-Dichloropropylene	44.6	0.5	ug/L	ND	112	60-130			
Ethylbenzene	34.7	0.5	ug/L	ND	86.8	60-130			
Ethylene dibromide (dibromoethane, 1,2-	32.1	0.2	ug/L	ND	80.2	60-130			
Hexane	42.3	1.0	ug/L	ND	106	60-130			
Methyl Ethyl Ketone (2-Butanone)	69.2	5.0	ug/L	ND	69.2	50-140			
Methyl Isobutyl Ketone	71.1	5.0	ug/L	ND	71.1	50-140			
Methyl tert-butyl ether	81.6	2.0	ug/L	ND	81.6	50-140			
Methylene Chloride	44.6	5.0	ug/L	ND	112	60-130			
Styrene	32.9	0.5	ug/L	ND	82.2	60-130			

Certificate of Analysis

Report Date: 25-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	42.6	0.5	ug/L	ND	106	60-130			
1,1,2,2-Tetrachloroethane	36.2	0.5	ug/L	ND	90.4	60-130			
Tetrachloroethylene	40.0	0.5	ug/L	ND	100	60-130			
Toluene	35.1	0.5	ug/L	ND	87.7	60-130			
1,1,1-Trichloroethane	43.2	0.5	ug/L	ND	108	60-130			
1,1,2-Trichloroethane	38.4	0.5	ug/L	ND	96.1	60-130			
Trichloroethylene	42.1	0.5	ug/L	ND	105	60-130			
Trichlorofluoromethane	41.3	1.0	ug/L	ND	103	60-130			
Vinyl chloride	29.0	0.5	ug/L	ND	72.4	50-140			
m,p-Xylenes	77.3	0.5	ug/L	ND	96.6	60-130			
o-Xylene	35.0	0.5	ug/L	ND	87.4	60-130			
Surrogate: 4-Bromofluorobenzene	96.1		ug/L		120	50-140			
Surrogate: Dibromofluoromethane	94.5		ug/L		118	50-140			
Surrogate: Toluene-d8	72.4		ug/L		90.5	50-140			

Certificate of Analysis

Client: XCG Consulting Limited (Kingston)

Client PO:

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 1-4778-01-02

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Paracel ID: 2047459



Paracel Order Number
(Lab Use Only)

2047459
(GW)

Chain Of Custody

(Lab Use Only)

No 130314

Client Name: XCG Consulting Limited

Project Ref: 1-4778-01-02

Page 1 of 1

Contact Name: Karin Paul

Quote #:

Turnaround Time

Address: Kingston

PO #:

☐ 1 day

☐ 3 day

Telephone: (613) 417 7112

E-mail:

Karin.paul@xcg.com

☐ 2 day

☒ Regular

Date Required:

Regulation 153/04

Other Regulation

☐ Table 1 ☒ Res/Park ☐ Med/Fine

☐ REG 558

☐ PWQO

☒ Table 2 ☐ Ind/Comm ☒ Coarse

☐ CCME

☐ MISA

☐ Table 3 ☐ Agri/Other

☐ SU - Sani

☐ SU - Storm

☐ Table

Mun:

For RSC: ☐ Yes ☐ No

☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water)
SW (Surface Water) SS (Storm/Sanitary Sewer)
P (Paint) A (Air) O (Other)

Required Analysis

Sample ID/Location Name

1 MW 20-2

Matrix

Air Volume

of Containers

Date

Time

Sample Taken

PHCs F1-F4+BTEX

VOCs

PAHs

Metals by ICP

Hg

Cd

B (HWS)

Total Coliforms

Fecal Coliforms

E. Coli

2 MW 20-1

GW

3

Nov 19/2020

10:00

X

X

3 MW A

GW

3

Nov 17/2020

1:00

X

X

4 Trip blank

2

Nov 17/2020

1:00

X

5

6 DW 3076

O

2

Nov 19/2020

11:40

X X X

7

8

9

10

Comments:

Method of Delivery:

Relinquished By (Sign):

Received By Driver/Depot:

Received at Lab:

Verified By:

Relinquished By (Print):

Date/Time:

Date/Time:

Date/Time:

Date/Time: Nov 19/2020 13:00

Temperature:

Temperature:

pH Verified: ☐ By:

Chain of Custody (Env.) .xlsx

Revision 3.0

Certificate of Analysis

XCG Consulting Limited (Kingston)

4 Cataraqui Street, Woolen Mill, East Wing, Suite 100
Kingston, ON K7K 1Z7
Attn: Kamin Paul

Client PO:
Project: 1-4778-01-02
Custody: 130314

Report Date: 23-Nov-2020
Order Date: 19-Nov-2020

Order #: 2047488

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047488-01	DW 3076

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 23-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
E. coli	MOE E3407	20-Nov-20	20-Nov-20
Fecal Coliform	SM 9222D	20-Nov-20	20-Nov-20
Total Coliform	MOE E3407	20-Nov-20	20-Nov-20

Certificate of Analysis

Report Date: 23-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Client ID:	DW 3076	-	-	-
Sample Date:	19-Nov-20 11:40	-	-	-
Sample ID:	2047488-01	-	-	-
MDL/Units	Drinking Water	-	-	-

Microbiological Parameters

E. coli	1 CFU/100 mL	ND	-	-	-
Fecal Coliforms	1 CFU/100 mL	ND	-	-	-
Total Coliforms	1 CFU/100 mL	ND	-	-	-

Certificate of Analysis

Report Date: 23-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL						
Fecal Coliforms	ND	1	CFU/100 mL						
Total Coliforms	ND	1	CFU/100 mL						

Certificate of Analysis

Report Date: 23-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100 mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100 mL	ND			NC	30	

Certificate of Analysis

Report Date: 23-Nov-2020

Client: XCG Consulting Limited (Kingston)

Order Date: 19-Nov-2020

Client PO:

Project Description: 1-4778-01-02

Qualifier Notes:

Sample Qualifiers :

QC Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

