Hollinger Park Soil Survey

Algonquin Boulevard East, Timmins, Ontario

Submitted to:
The Corporation of the City of Timmins
220 Algonquin Boulevard East
Timmins, Ontario
P4N 1B3

Prepared by:
Amec Foster Wheeler Environment & Infrastructure
a Division of Amec Americas Limited
131 Fielding Road
Lively, Ontario P3Y 1L7
www.amecfw.com

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1.0 INTRODUCTION / BACKGROUND

Amec Foster Wheeler Environment & Infrastructure (Amec Foster Wheeler) was retained by The Corporation of the City of Timmins (COT) to conduct a Soil Sampling Survey of Hollinger Park located at the intersection of Brunette Road and Algonquin Boulevard, in Timmins, Ontario (the Site).

Hollinger Park is a municipal park located in the eastern part of Timmins. The area was once a lake (Miller Lake) that was subsequently filled with tailings from the adjacent Hollinger Mine and converted to a park. The park was renovated in 1999 and now includes a regulation size baseball diamond, two soccer fields, two volleyball courts, a small pavilion, a splash pad and a children's play area.

The Ministry of the Environment and Climate Change (MOECC) conducted a soil sampling program at the Site in 2012. The MOECC collected composite soil samples (0-5 cm depth) from nine areas in the park and submitted the samples for analysis of metals and metalloids. The concentrations were compared to Tables 1 and 3 of the MOECC *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. Soil concentrations of arsenic were elevated at seven of the nine areas sampled. Mercury concentrations were elevated in the baseball diamond and bandstand areas. Cadmium, cobalt, copper, silver and zinc also had elevated concentrations with respect to Table 1 and 3 standards at several of the sampled areas. The MOECC had suggested that the COT conduct additional sampling to supplement the existing sampling program.

The COT subsequently retained Amec Foster Wheeler to conduct a soil sampling program to help further characterize the soil and to capture potentially overlooked areas. The additional sampling will aid in determining the thickness of the soil material covering the buried mine tailings and to potentially identify high exposure areas and potential impacts to human health.

Amec Foster Wheeler has provided herein, the results and interpretation of the soil sampling program conducted at Hollinger Park, in Timmins, Ontario.

1.1 Site Description

Hollinger Park is intersected by Algonquin Boulevard to the north, Brunette Road to the west and Water Tower Road to the south. The Park is surrounded by light industrial and commercial properties. The Site is relatively flat, with a slight slope towards the drainage ditches located along the northern, western and southern perimeter of the Site. There is a paved parking area located on the central portion of the Site and the remaining portion of the Site is grass covered.

A map indicating the location of the Site and surrounding area is provided on Figure 1.

2.0 SCOPE OF WORK

The objective of the soil survey is to assess the thickness of the "cap" material covering the buried mine tailings. Also, to determine the concentration levels for metals and metalloids in the surface soils (0-5 cm depth) across the Site, as well as throughout the depth of the soil profile. The scope of work included the collection of twenty four surface samples and the advancement of seven boreholes on the Site.

The scope of work included the following tasks:

- Arranging for the location of underground and overhead utilities including natural gas pipelines, water services and telephone and electrical conduits marked by the local utility companies and/or their representative agents to clear the planned borehole locations in advance of drilling operations;
- A surface soil sampling program including the collection of 24 composite samples from a depth of 0-5 cm;
- A subsurface soil sampling program including the drilling of seven boreholes, to facilitate the collection of soil samples for field screening and submission for laboratory analysis. A comprehensive sampling program including the collection and submission of samples from continuous depths on three of the seven boreholes;
- Submitting soil samples for analysis of specific metals and metalloids;
- Comparing the analytical results reported for the soil samples to the appropriate Site Conditions Standards (SCS) established under Ontario Regulation (O.Reg.) 153, as amended by O.Reg. 511/09, and provided in *Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act* dated 15 April 2011; and,
- Preparing a report documenting the findings of the survey, including an outline of the methodologies used, stratigraphic and instrumentation logs, analytical results for all samples and an interpretation of the findings.

3.0 SOIL SAMPLING PROGRAM AND METHODOLOGY

The soil survey was carried out in accordance with the Amec Foster Wheeler Standard Operating Procedures and our proposal dated 31 August 2015. Details of the investigation activities are provided in the following sections.

3.1 Field Preparation

3.1.1 Subsurface Utility Locates

The locations of all buried and overhead services were obtained prior to the initiation of any of the subsurface investigations. All on-Site underground utilities were marked by the public utility locating services, in order to clear the individual borehole locations prior to their advancement.

3.1.2 Quality Assurance/Quality Control Program

A strict Quality Assurance/Quality Control (QA/QC) program was implemented and maintained throughout the project to ensure the Site data is representative of the actual Site conditions. The QA/QC program provides a method of documented checks to assess the precision and accuracy of collected data. The QA/QC program includes a set of standard procedures or protocols to be followed throughout the investigation. To this end, Amec Foster Wheeler field and QA/QC protocols have been developed to meet or exceed those defined in the MOE documents entitled *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04* (June 2011) and *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (9 March 2004, amended as of 1 July 2011).* The field QA/QC program included the following components:

1) The use of personal protective equipment (PPE) including hard hats, safety glasses, safety work boots, and chemically resistant latex/nitrile gloves for sample handling;
2) Thorough documentation of all field activities and sample handling practices including field notes, chain of custody forms, memos to file, etc.;
3) Thorough decontamination of all sampling equipment employed in all investigation phases;
4) The incorporation of blind duplicate samples into the sampling and analytical programs to assess the validity of the data received from the analytical laboratory; and,
5) The use of laboratory analytical protocols and method detection limits that have been established in accordance with regulatory requirements for the province of Ontario.

3.2 Subsurface Investigation and Surface Soil Sampling

The subsurface conditions and representative samples of soil were obtained through the completion of a multi-faceted investigation and sampling program that included the drilling of boreholes and collection of surface soil samples. The subsurface geological conditions were established from visual observations and soil samples collected. Soil quality data was obtained from visual and olfactory observations, field screening methods and laboratory analytical data.

3.2.1 Borehole Drilling

A total of seven (7) boreholes (BH-01 to BH-07) were advanced on the Site on 29 September 2015. The borehole locations are indicated on Figure 2. The borehole locations were selected to be representative of all areas across the Site. Boreholes were not advanced in the children's play area and splash pad area as the preliminary investigation conducted by the MOECC did not report any elevated concentrations in this area.

The drilling was completed by Tatry Drilling Ltd. of Timmins, Ontario. The boreholes were advanced to the maximum depth of 2.4 m below surface grade using a track-mounted CAT 247 portable beaver drill. Sixty centimetre (cm) long soil samples were collected in the overburden (where useable) using standard split spoon sampling techniques at regular intervals throughout

borehole advancement within the overburden. All drilling activities were completed under the supervision of Amec Foster Wheeler field staff.

The soil samples collected during the borehole investigations were examined, classified, and logged according to soil type, moisture content, colour, consistency, and presence of visual and/or olfactory indicators of negative impact. The soil stratigraphic and instrumentation logs can be found in Appendix A. A comprehensive sampling program was completed on three of the seven boreholes (BH03 bandstand area, BH04 baseball diamond and BH06 west soccer field), whereby, soil samples from each split spoon were placed into laboratory prepared glass jars and submitted to the laboratory for chemical analysis in an effort to provide an assessment of the vertical contaminant distributions within the soil profile.

3.2.2 Surface Soil Sampling

Surface soil samples (0-5cm in depth) were collected from the following locations: park sign area, north central area, bandstand area, volleyball courts, west soccer field, south soccer field and baseball diamond. The location of the surface samples collected is outlined on Figure 2. The UTM coordinates for the sample locations are included in Table1 below. The MOECC identified in their preliminary investigation that the children's play area and splash pad area did not report any elevated concentrations and subsequently these areas were excluded from the surface sampling program.

Sampling followed the Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04 (MOECC 2011). The sampling was conducted in a 4X4 grid pattern and combined to create one composite sample (composite of 16 samples). A stainless steel soil corer was pushed vertically into the soil to a depth of 5 cm and the core was collected in a new polyethylene sample bag. This process was repeated to collect 3-5 composite samples from each location. The number of composite samples collected, along with their UTM coordinates are outlined below in Table 1.

Table 1: Sample Locations

Location	Zone	Easting	Northing	Sample Name
Park Sign Area	17	476304	5369251	GS1
Park Sign Area	17	476323	5369296	GS2
Park Sign Area	17	476283	5369324	GS3
North Central Area	17	476348	5369320	GS4
North Central Area	17	476361	5369271	GS5
North Central Area	17	476347	5369259	GS6
Bandstand area	17	476404	5369251	GS7
Bandstand area	17	476399	5369274	GS8

Location	Zone	Easting	Northing	Sample Name
Bandstand area	17	476409	5369302	GS9
Baseball Diamond	17	476351	5369075	GS10
Baseball Diamond	17	476353	5369093	GS11
Baseball Diamond	17	476321	5369090	GS12
Baseball Diamond	17	476294	5369118	GS13
Baseball Diamond	17	476313	5369129	GS14
Volleyball Courts	17	476292	5369166	GS15
Volleyball Courts	17	476263	5369156	GS16
Volleyball Courts	17	476231	5369173	GS17
West Soccer field	17	476217	5369142	GS18
West Soccer field	17	476229	5369103	GS19
West Soccer field	17	476233	5369070	GS20
South Soccer Field	17	476228	5369041	GS21
South Soccer Field	17	476258	5369038	GS22
South Soccer Field	17	476279	5369010	GS23
South Soccer Field	17	476343	5369038	GS24

A subsample of each composite sample was jarred and sent to the laboratory for chemical analysis.

3.2.3 Soil Sample Analyses

All soil samples were collected in accordance with strict environmental sampling protocols to ensure reliable and representative results. Disposable nitrile gloves were used and replaced between the handling of successive samples. All soil sampling equipment (stainless steel trowels, spatulas, etc.) was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination. Decontamination activities included:

- Physical removal of any adhered debris;
- Wash/scrub in “Alconox” soap solution;
- Distilled water rinse;
- Methanol rinse; and,
- Air dry.

All laboratory samples were stored in a cooler and kept cool during transport to the laboratory. Continuous Chain of Custody documentation was maintained.

The original agreed upon scope of work included four samples submitted from each of the three designated boreholes, however, an additional sample was submitted from BH-04 in an effort to better characterize the soil within the upper profile.

Fifteen (15) samples (including duplicates) from the borehole drilling program and twenty seven (27) samples (including duplicates) from the surficial sampling program were submitted for the following analysis: antimony, arsenic, cadmium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium and zinc using the MOECC approved analytical method under O.Reg. 153/04.

3.3 Laboratory Analyses

Soil samples collected during the investigation were submitted for laboratory analysis of the suspect parameters of concern. The soil laboratory chemical analysis was conducted by AGAT Laboratories of Mississauga, Ontario. AGAT is a Standards Council of Canada certified laboratory in accordance with ISO/IEC 17025:1999 – "*General Requirements for the Competence of Testing and Calibration Laboratories*" for the tested parameters set out in the Soil, Ground Water and Sediment Standards.

4.0 RESULTS OF THE FIELD INVESTIGATION

4.1 Site Geology

The subsurface conditions encountered at the Site are described in the stratigraphic and instrumentation logs provided in Appendix A. In general, the subsurface conditions at the Site were observed to be 7-14 cm of brown organic sandy loam topsoil overlying brown fine sand with trace silt, likely historically deposited tailings from Hollinger Mine. Oxidation was present in the sand above the water table (<2.5m). Below the water table, the sand was a uniform grey in colour. The soil across the Site is considered to be coarse-textured for the purpose of this assessment. A contour plan showing the thickness of the surficial organic layer has been included as Figure 3.

5.0 REGULATORY FRAMEWORK

The legislative and regulatory requirements for contaminated sites in Ontario are established by *Ontario Regulation 153/04 - Records of Site Condition, Part XV.1 of the Environmental Protection Act (O. Reg. 153/04, as amended by O.Reg. 511/09, O.Reg.179/11 and O.Reg. 269/11)*. *O. Reg. 153/04 (as amended)* provides two approaches for cleaning up contaminated sites including: 1) restoration to generic site condition standards (SCS) comprised of background standards and effects-based standards; and 2) preparation of a risk assessment. The generic SCS are set out in the document entitled "*Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act"* dated 15 April 2011

(the "EPA Standards"). For the most part, the generic SCS are identical to their predecessor generic criteria, the only difference being the incorporation of the Canada Wide Standards (CWS) for petroleum hydrocarbons. The generic effects-based SCS have been developed using a risk-based approach and are provided in Tables 2 through 9 of the EPA Standards. The application of the appropriate generic effects-based SCS is dependent upon several site-specific conditions including: 1) the existing/proposed property use; 2) the existing/potential ground water use; 3) depth of clean-up; 4) soil texture; 5) depth to bedrock; and 6) proximity to a water body or Areas of Natural Significance.

The SCS applicable to the Site have been evaluated on the basis of the following rationale:

- The intended future use of the property is parkland;
- A search of the Natural Heritage Areas Map produced by the Ministry of Natural Resources and Forestry (MNRF) produced a record of a sitting of the Black Tern (Chlidonias niger), denoted as a species of concern, on the Site in 1988. According to Regulation 153/04, as amended, the habitat must be for an endangered or threatened species (not species of concern) to qualify as an area of natural significance, which would cause the Site to be classified as potentially sensitive;
- Based on the results of the borehole drilling, the depth of the soil on the Site is greater than 2 mbgs for more than two-thirds of the property, and therefore, the Site would not be classified as sensitive, under *O.Reg. 153/04*, as amended.
- Ground water is not used as a source of potable water on the Site, as the area is municipally serviced. The Site is not located within a designated Ground Water Protection Zone, as per the COT official plan.
- The Site does not include land that is within 30 m of a "water body"; and,
- Based on the soil conditions observed in the field and upon examination of the soil samples by the Qualified Person, the predominant subsurface soil conditions across the Site are considered coarse textured for the purposes of assessment.

Based on the above site characteristics, the Site would not be classified as being Environmentally Sensitive per O. Reg. 153/04 (as amended), and the appropriate property use classification would be parkland. The Site is not within a ground water source protection zone; therefore, the appropriate SCS for the Site are the Table 3, full depth, non-potable ground water standards for parkland/residential/institutional property use and coarse-textured soils ("EPA Table 3 SCS").

For ease of comparison, the soil concentrations of metals and metalloids were compared to Table 1 Full Depth Background SCS, as conducted in the 2012 MOECC soil survey report.

6.0 LABORATORY ANALYSES

The results of the soil sample analyses carried out as part of the investigation are summarized in Tables 2, and 3 A discussion of the results of the laboratory analyses in the context of the

applicable generic SCS is provided in the following sections. Copies of the laboratory Certificates of Analysis are provided in Appendix B.

6.1 Soil Sample Analyses

6.1.1 Borehole Sampling Program

A total of fifteen (15) (including the duplicates collected from BH03-4 and BH04-1-2) soil samples collected during the borehole sampling program were submitted for analysis of metals and metalloids. The results of the laboratory analysis compared to the provincial SCS have been included in Table 2. Samples were collected from the areas with the highest historic levels of metals, the bandstand, baseball diamond and west soccer field areas. Exceedances for both Table 1 and Table 3 SCS were evident for the following parameters: arsenic, cobalt, copper, mercury, selenium, silver and zinc. Concentrations of antimony and silver exceeded Table 1 standards only. The elevated concentration of antimony was only evident within the surface organic layer of BH03. All of the samples submitted as part of the borehole sampling program had exceedances of arsenic and mercury.

Exceedances for one or more parameters were noted throughout the profile at each borehole location. The surface organic layer shows lower concentrations than the underlying layers, as the metal levels appear to increase with depth for the majority of parameters. The maximum concentration of arsenic (458 ug/g) collected from BH03-4 was twenty five times the Table 3 SCS. Additionally, the maximum level of mercury in the soil collected from BH03-2 (1.07 ug/g) was four times greater than the provincial Table 3 standard.

6.1.2 Surface Soil Sampling Program

A total of twenty seven (27) (including the duplicates collected from GS8, GS12 and GS16) soil samples collected during the surficial sampling program were submitted for analysis of metals and metalloids. The results of the laboratory analysis compared to the provincial SCS have been included in Table 3. Exceedances for both Table 1 and 3 SCS were noted for antimony, arsenic, cadmium, cobalt, copper, lead, mercury and zinc. Silver showed exceedances of Table 1 SCS only. The areas which showed the highest concentrations included the north central area, bandstand, baseball diamond, volleyball courts and west soccer field. All of the grid samples showed exceedances for arsenic and twenty out of twenty four showed exceedances for mercury.

The maximum concentration of arsenic (240 ug/g) collected from GS24 was thirteen times the Table 3 SCS. The highest levels of lead (417 ug/g) and zinc (1090 ug/g) present in the surface soils exceed the Table 3 standard by three fold. Lastly, the maximum concentration of mercury 1.19 (ug/g) collected from GS1 exceeds the Table 3 standard by four times. It should be noted that several elements namely lead, antimony and cadmium are present in the surface organic fill layer in amounts exceeding Table 3 SCS but do not appear to be present in similar amounts in the underlying tailings. According to COT representatives the source of the organic fill is unknown.

6.2 Quality Assurance Program

6.2.1 Accreditation

The analytical laboratory employed to perform the laboratory analyses is accredited by the Standards Council of Canada in accordance with ISO/IEC 17025:1999 – "*General Requirements for the Competence of Testing and Calibration Laboratories*" for the tested parameters.

6.2.2 Criteria

The "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act*" (the "Analytical Protocol"), March 2004, establishes performance criteria for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for calibration purposes), Reporting Detection Limits (RDLs) and specified precision required when analyzing laboratory duplicate and spike/controlled reference material samples.

6.2.3 Data Validation

All samples/sample extracts were analyzed within their applicable hold times using approved analytical methods. The RDLs were met for all tested parameters. No tested parameter was present in a detectable concentration in any laboratory Method Blank. Surrogate recoveries were within acceptable ranges in all cases for all samples. Agreement between the corresponding datasets for the reference material samples where applicable and recoveries reported for spiked samples/blanks, where applicable, is acceptable. Agreement between the corresponding datasets for the laboratory duplicate samples is considered acceptable. In summary, the analytical results reported for samples collected during this investigation are considered to have met the performance criteria of the Analytical Protocol.

6.2.4 Field QA/QC Samples

The results of the field duplicate sample analyses indicate that the sampling results are generally reproducible with relative percent differences (RPD) for the primary and duplicate samples reporting within acceptable ranges.

7.0 SUMMARY AND CONCLUSIONS

Based on the results of the soil sampling survey and laboratory analytical programs, Amec Foster Wheeler offers the following conclusions regarding the environmental Site conditions:

1. In general, the subsurface conditions at the Site were observed to be 7-14 cm of brown organic sandy loam topsoil overlying brown fine sand with trace silt, likely historically deposited tailings from Hollinger Mine;

2. In accordance with *Ontario Regulation 153/04 - Records of Site Condition, Part XV.1 of the Environmental Protection Act (EPA*) (O. Reg. 153/04), as amended by O. Reg. 511-09, the appropriate generic SCS are the Table 3 standards for full depth, non-potable ground water condition, for residential/parkland/institutional property use and coarse-textured soils as provided in the supporting document "*Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*," dated 15 April 2011 (EPA Table 3 SCS);
3. For reference purposes, the sample results were compared to Table 1, as well as Table 3 SCS;
4. The children's play area and splash pad area were excluded from survey as the preliminary investigation conducted by the MOECC did not report any elevated concentrations in these areas;
5. Consistent with the MOECC sampling program in 2012 the most contaminated areas appear to be the grassed area of the baseball diamond, the volleyball courts, the west soccer field, the bandstand and the north central area;
6. The surface organic layer showed widespread elevated concentrations of metals above provincial standards namely, antimony, arsenic, cadmium, cobalt, copper, lead, mercury and zinc. All of the surface samples had exceedances for arsenic and twenty out of twenty four samples had mercury exceedances;
7. The subsurface sand/tailings layer identified exceedances for Table 3 SCS for the following parameters: arsenic, cobalt, copper, mercury, selenium, silver and zinc throughout the soil profile. Concentrations of antimony and silver exceeded Table 1 standards only. All of the borehole samples submitted had elevated concentrations of arsenic and mercury above Table 3 SCS. The elevated concentration of antimony was only evident within the surface organic layer of BH03. The surface organic layer shows lower concentrations than the underlying sand layers. Metal levels appear to increase with depth for the majority of parameters.
8. It should be noted that several elements (lead, antimony and cadmium) are present in the surface organic fill layer in amounts exceeding Table 3 SCS but do not appear to be present in similar concentrations in the underlying sand/tailings.

In summary, the thickness of the "cap" materials appears to be 7-14 cm. The surface organic/fill layer contains elevated levels of metals with the highest concentrations centered around the grassed area of the baseball diamond, the volleyball courts, the west soccer field, the bandstand and the north central area. The organic layer contains elevated levels of metals that appear to be unrelated to the underlying tailings material namely, lead, cadmium and antimony.

8.0 CLOSURE

This report was prepared for the exclusive use of COT, and is intended to provide a soil assessment on the Site, being Hollinger Park in Timmins, Ontario, at the time of the Site visit. Any use which a third party makes of this report, or any reliance on or decisions to be made

based on it, is the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Amec Foster Wheeler will be required. With respect to third parties, Amec Foster Wheeler has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the soil survey of the property conducted by Amec Foster Wheeler. It is based solely on the conditions of the Site encountered at the time of the Site visit, supplemented by a review of historical information and data obtained by Amec Foster Wheeler as described in this report, and discussion with a representative of the owner/occupant, as reported herein. Except as otherwise maybe specified, Amec Foster Wheeler disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Amec Foster Wheeler after the time during which Amec Foster Wheeler conducted the soil survey.

Amec Foster Wheeler makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This report is also subject to the further Standard Limitations contained in Appendix C. We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

Amec Foster Wheeler Environment & Infrastructure,
a Division of Amec Foster Wheeler Americas Limited

Prepared by:

Shelley Wainio, H.B.Sc.
Environmental Specialist

Reviewed by:

Tim McBride, B.Sc., P.Geo., QP_{ESA}
Hydrogeologist

Table 2 - Summary of Metals Soil Analysis-Borehole Samples

Parameters	RDL	Analytical Results - µg/g															EPA Standards Table 1, Full Depth, Background	EPA Standards, Table 3, Full depth Generic, Non-Potable
		Bandstand Area				Baseball Diamond					West Soccer Field							
Laboratory ID		**7047904**	**7047906**	**7047907**	**7047908**	**7047909**	**7047910**	**7047911**	**7047912**	**7047913**	**7047914**	**7047921**	**7047915**	**7047916**	**7047917**	**7047919**	**Residential / Parkland / Institutional Property Use, Coarse-textured Soil**	**Residential / Parkland / Institutional Property Use, Coarse-textured Soil**
Sample Number		**BH03-1-1**	**BH03-1-2**	**BH03-2**	**BH03-4**	**BH04-1-1**	**BH04-1-2**	**BH04-2**	**BH04-4**	**BH04-5**	**BH06-1**	**BH06-2**	**BH06-3-1**	**BH06-3-3**	**DUP 1**	**DUP 2**		
Sample Depth (mbgs)		**0.00-0.08**	**0.08-0.35**	**0.69-1.29**	**1.89-2.31**	**0.00-0.09**	**0.09-0.48**	**0.61-0.95**	**1.83-2.21**	**2.43-2.86**	**0.13-0.57**	**0.61-0.88**	**1.22-1.31**	**1.49-1.59**	**(BH03-4)**	**(BH04-1-2)**		
Sample Date		**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**	**29-Sep-15**		
Antimony	0.8	**1.7**	<0.8	<0.8	<0.8	1.2	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1.3	7.5
Arsenic	1	**176**	**242**	**227**	**458**	**155**	**203**	**294**	**277**	**273**	**213**	**453**	**140**	**218**	**262**	**211**	18	18
Cadmium	0.5	1.2	0.8	0.7	0.6	1.0	<0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5	<0.5	<0.5	0.5	1.2	1.2
Cobalt	0.5	**23.1**	**28.2**	**28.5**	**45.5**	19.5	**25.7**	**29.9**	**28.8**	**31.3**	**25.4**	**43.8**	17.2	**26.2**	**28.0**	**26.8**	21	22
Copper	1	**285**	88	76	86	77	63	68	68	70	67	**101**	44	65	66	68	92	140
Lead	1	49	26	22	35	88	18	26	39	18	21	33	23	61	26	18	120	120
Mercury	0.1	**0.53**	**1.06**	**1.07**	**1.07**	**0.66**	**0.66**	**0.60**	**0.37**	**0.57**	**0.91**	**0.94**	**1.17**	**0.34**	**0.76**	**0.68**	0.27	0.27
Nickel	1	49	52	50	72	37	44	49	44	46	46	68	28	39	45	46	82	100
Selenium	0.4	**1.6**	**1.7**	1.4	**2.9**	1.2	1.2	**1.6**	**1.7**	**1.6**	1.3	**2.6**	1.0	1.4	**1.7**	1.1	1.5	2.4
Silver	0.2	**1.2**	0.4	0.4	0.5	**0.6**	0.3	0.4	0.4	0.3	0.3	**0.6**	<0.2	0.2	0.3	0.3	0.5	20
Thallium	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1	1
Vanadium	1	21	23	21	13	16	18	12	12	13	21	13	13	12	12	19	86	86
Zinc	5	**374**	**337**	**329**	259	**418**	240	217	164	199	**291**	270	**303**	177	235	248	290	340

Notes: 1) All units in micrograms per gram (µg/g) (parts per million).
2) RDL = reported detection limit.
3) < = less than laboratory analytical detection limit.
4) EPA Standards = *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , Ontario Ministry of Environment, 15 April 2011.
5) **Bolded** result indicates exceedance of provicial standard indicated inTable 1.
6) **Underlined** result indicates exceedance of provincial standard indicated inTable 3.

The Corporation of the City of Timmins
Hollinger Park Soil Survey
Algonquin Boulevard East
Timmins, Ontario
January 2016

Table 3 - Summary of Metals Soil Analysis from Grid Samples

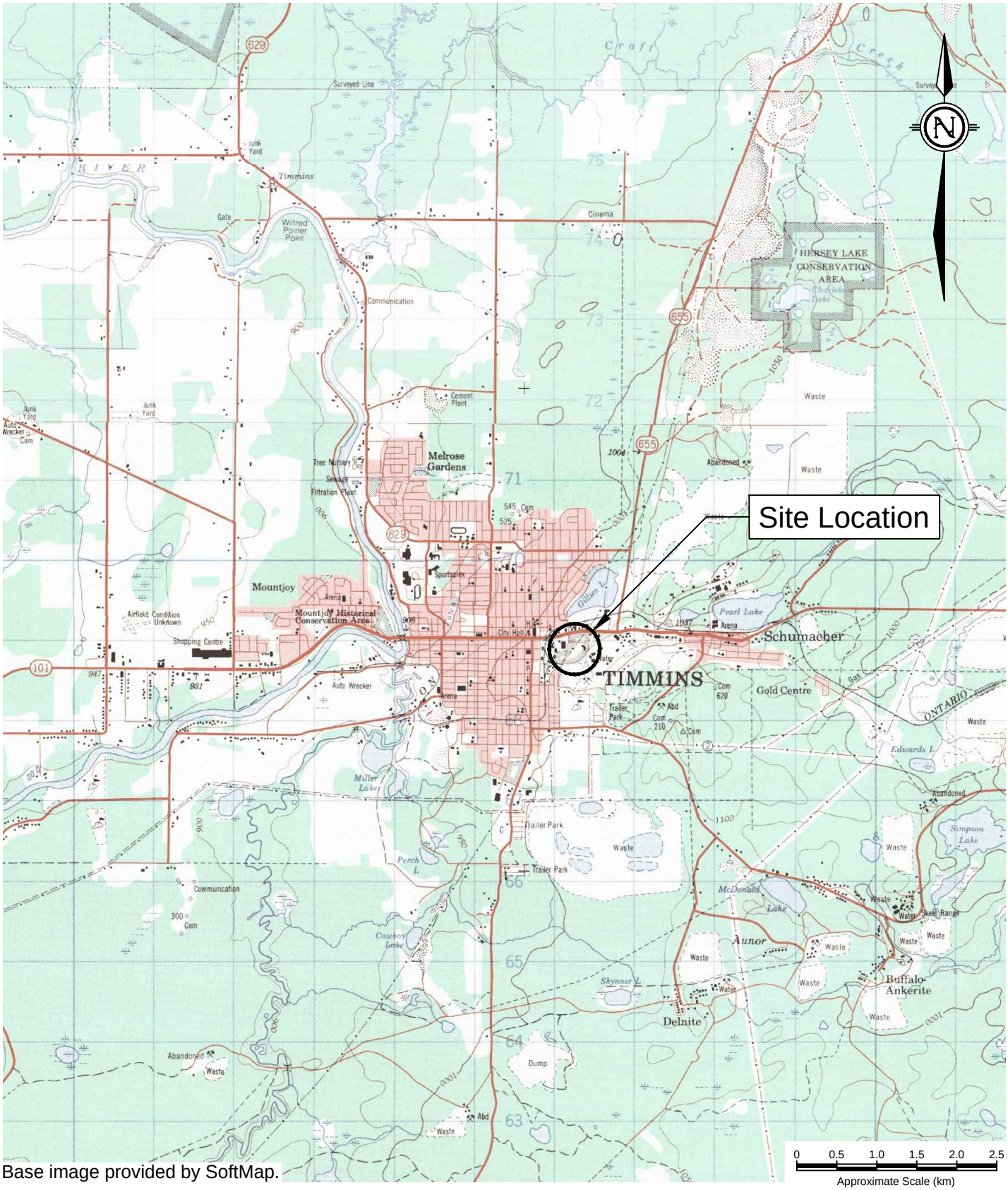
Parameters	RDL	Analytical Results - µg/g														EPA Standards Table 1, Full Depth, Background	EPA Standards, Table 3, Full Depth Generic, Non-Potable
		Park Sign Area		North Central Area			Bandstand Area				Baseball Diamond						
Laboratory ID		7047792	7047794	7047793	7047797	7047796	7047795	7047798	7047799	7047800	7047801	7047802	7047803	7047804	7047805	Residential / Parkland / Institutional Property Use, Coarse-textured Soil	Residential / Parkland / Institutional Property Use, Coarse-textured Soil
Sample Number		GS1	GS3	GS2	GS6	GS5	GS4	GS7	GS8	GS9	GS10	GS11	GS12	GS13	GS14		
Sample Depth (cm		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		
Sample Date		29-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15		
Antimony	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1.2	<0.8	1.0	<0.8	**1.8**	**2.9**	**1.6**	**20.2**	**3.9**	**1.3**	**7.5**
Arsenic	1	**192**	**62**	**211**	**169**	**170**	**231**	**121**	**203**	**132**	**129**	**176**	**179**	**160**	**136**	**18**	**18**
Cadmium	0.5	1.2	0.6	**1.3**	1.0	1.2	**1.9**	0.9	1.1	1.0	**1.4**	**1.3**	**1.3**	**1.8**	**1.5**	**1.2**	**1.2**
Cobalt	0.5	**23.5**	10.4	**26.0**	**22.5**	**21.8**	**31.3**	16.2	**25.0**	18.0	17.3	**21.3**	**22.2**	21	18.2	**21**	**22**
Copper	1	78	63	**118**	**203**	81	**135**	**163**	**111**	**100**	88	**102**	**117**	**335**	**109**	**92**	**140**
Lead	1	40	31	62	33	45	**149**	24	45	42	**134**	**202**	112	**417**	**267**	**120**	**120**
Mercury	0.1	**1.19**	**0.41**	**0.87**	**0.74**	**0.96**	**0.82**	**0.42**	**0.74**	**0.63**	**0.65**	**0.64**	**0.71**	**0.80**	**0.61**	**0.27**	**0.27**
Nickel	1	47	24	50	47	41	62	38	46	35	35	41	44	41	36	**82**	**100**
Selenium	0.4	1.4	0.5	1.4	1.3	1.2	1.3	1.3	1.5	1.0	1.1	1.4	1.2	1.3	1.1	**1.5**	**2.4**
Silver	0.2	0.5	0.2	**0.8**	**0.8**	**0.6**	**1.2**	0.5	**0.7**	**0.8**	**0.8**	**0.7**	**0.9**	**1.3**	**0.8**	**0.5**	**20**
Thallium	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	**1**	**1**
Vanadium	1	22	16	22	19	21	35	20	21	20	18	19	19	22	18	**86**	**86**
Zinc	5	**357**	172	**395**	273	**341**	**376**	222	**351**	271	**549**	**769**	**534**	**892**	**1090**	**290**	**340**

Notes: 1) All units in micrograms per gram (µg/g) (parts per million).
2) RDL = reported detection limit.
3) < = less than laboratory analytical detection limit.
4) EPA Standards = *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , Ontario Ministry of Environment, 15 April 2011.
5) **Bolded** result indicates exceedance of provincial standard indicated in table 1.
6) **Underlined** result indicates exceedance of provincial standard indicated in table 3.

Table 3 continued..

Parameters	RDL	Analytical Results - µg/g												EPA Standards Table 1, Full Depth, Background	EPA Standards, Table 3, Full Depth Generic, Non-Potable
		Volleyball Courts			West Soccer Field			South Soccer Field							
Laboratory ID		7047806	7047807	7047808	7047809	7047810	7047811	7047812	7047813	7047814	7047815	7047817	7047820	7047822	Residential / Parkland / Institutional Property Use, Coarse-textured Soil	Residential / Parkland / Institutional Property Use, Coarse-textured Soil
Sample Number		GS15	GS16	GS17	GS18	GS19	GS20	GS21	GS22	GS23	GS24	DUP 1	DUP 2	DUP 3		
Sample Depth (cm		0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	(GS8)	(GS12)	(GS16)		
Sample Date		30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15		
Antimony	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	**1.4**	0.9	**1.4**	<0.8	**1.3**	**7.5**
Arsenic	1	**29**	**137**	**178**	**156**	**173**	**140**	**168**	**33**	**74**	**240**	**189**	**161**	**160**	**18**	**18**
Cadmium	0.5	<0.5	1.2	1.0	0.9	1.2	1.2	1.1	<0.5	<0.5	1.2	1.0	1.2	**1.3**	**1.2**	**1.2**
Cobalt	0.5	5.0	17.8	**21.4**	16.3	**21.4**	17.9	**21.6**	7.3	10.1	**28.4**	**23.6**	20.3	19.5	**21**	**22**
Copper	1	26	**106**	79	**107**	**99**	**142**	**117**	28	51	**101**	**105**	**106**	**116**	**92**	**140**
Lead	1	17	100	33	28	45	51	35	13	15	103	41	103	108	**120**	**120**
Mercury	0.1	<0.10	**0.72**	**0.53**	**0.32**	**0.69**	**0.56**	**0.64**	0.13	0.25	**0.87**	**0.68**	**0.72**	**0.79**	**0.27**	**0.27**
Nickel	1	13	36	41	39	42	42	45	19	22	51	43	40	40	**82**	**100**
Selenium	0.4	<0.4	1.0	1.1	1.0	1.2	1.3	1.0	<0.4	0.6	1.4	1.3	1..2	0.9	**1.5**	**2.4**
Silver	0.2	<0.2	**1.0**	0.5	0.4	**0.6**	**0.7**	**0.7**	<0.2	0.2	**0.8**	**0.6**	**0.9**	**1.1**	**0.5**	**20**
Thallium	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	**1**	**1**
Vanadium	1	14	21	18	25	19	19	17	16	15	20	19	18.0	22	**86**	**86**
Zinc	5	91	**431**	281	267	**323**	281	**314**	86	130	**477**	**327**	**497**	**474**	**290**	**340**

Notes: 1) All units in micrograms per gram (µg/g) (parts per million).
2) RDL = reported detection limit.
3) < = less than laboratory analytical detection limit.
4) EPA Standards = *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , Ontario Ministry of Environment, 15 April 2011.
5) **Bolded** result indicates exceedance of provincial standard indicated in table 1.
6) **Underlined** result indicates exceedance of provincial standard indicated in table 3.

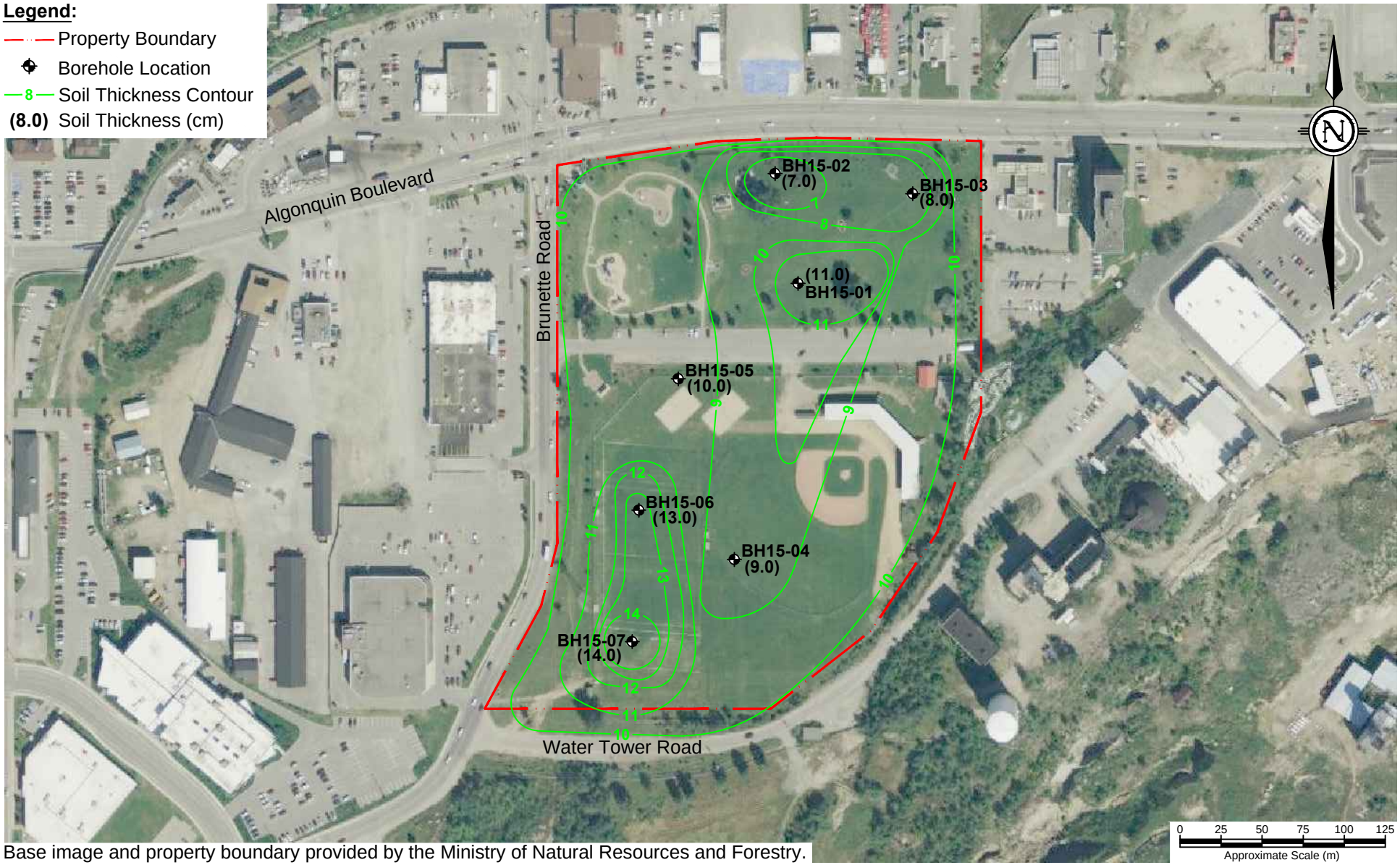


Base image provided by SoftMap.

Amec Foster Wheeler Environment & Infrastructure 131 Fielding Road Lively, Ontario P3Y 1L7	amec foster wheeler		The Corporation of the City of Timmins
PROJECT: Hollinger Park Soil Survey Algonquin Boulevard East Timmins, Ontario		DWN BY: MAT	CHK'D BY: SEW DATE: January 2016 PROJECT NO: TY151027
TITLE: Site Location Map		REV. NO.: 1	SCALE: as shown FIGURE NO: 1

Base image and property boundary provided by the Ministry of Natural Resources and Forestry.

The Corporation of the City of Timmins	DWN BY: MAT	PROJECT: Hollinger Park Soil Survey Algonquin Boulevard East Timmins, Ontario	REV. NO.: 1	
	CHK'D BY: SEW		DATE: January 2016	
Amec Foster Wheeler Environment & Infrastructure 131 Fielding Road Lively, Ontario P3Y 1L7	SCALE: as shown	TITLE: Borehole and Grid Sample Location Plan	PROJECT NO: TY151027	FIGURE NO: 2



Base image and property boundary provided by the Ministry of Natural Resources and Forestry.

The Corporation of the City of Timmins	DWN BY: MAT	PROJECT: Hollinger Park Soil Survey Algonquin Boulevard East Timmins, Ontario	REV. NO.: 1	
	CHK'D BY: SEW		DATE: January 2016	
Amec Foster Wheeler Environment & Infrastructure 131 Fielding Road Lively, Ontario P3Y 1L7	SCALE: as shown	TITLE: Soil Thickness Contour Plan	PROJECT NO: TY151027	FIGURE NO: 3

APPENDIX A

BOREHOLE LOGS

RECORD OF BOREHOLE No. BH15-01 Co-Ord. 0476316 E, 5369251 N

Project Number:	TY151027	Drilling Location:	East of Play Area	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15 Date Completed: 29 Sep 15	Revision No.:	0, 18/01/16

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		COMMENTS
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60	Atterberg Limits: W_P W W_L; Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%); 20 40 60 80	INSTRUMENTATION INSTALLATION	no installation, only bentonite
	110 mm brown sandy loam topsoil over brown SILT & SAND (probable tailings) dry	SS	1	84	16	0.5					
	brown to grey 0.6 SAND (probable tailings) trace silt moist	SS	2	54	20	1.0					
		SS	3	67	6	1.5					
	wet	SS	4	51	6	2.0					
	END OF BOREHOLE 2.4 (no refusal)										

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Amec Foster Wheeler
Environment & Infrastructure
131 Fielding Road
Lively, Ontario
Canada P3Y 1L7
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

RECORD OF BOREHOLE No. BH15-02 Co-Ord. 0476326 E, 5369312 N

Project Number:	TY151027	Drilling Location:	North Part of Site	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15 Date Completed: 29 Sep 15	Revision No.:	0, 18/01/16

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		COMMENTS
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60	Atterberg Limits: W_P W W_L; Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80	INSTRUMENTATION INSTALLATION	no installation, only bentonite
	70 mm brown sandy loam topsoil over brown SILT & SAND (probable tailings) dry	SS	1	49	5	0.5		○			
	brown to grey 0.6 SAND (probable tailings) trace silt moist, oxidation	SS	2	54	7	1.0		○			
		SS	3	33	6	1.5		○			
	wet	SS	4	41	5	2.0		○			
	END OF BOREHOLE 2.4 (no refusal)										

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131 Fielding Road
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Canada P3Y 1L7
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

Scale: 1 : 30

RECORD OF BOREHOLE No. BH15-03 Co-Ord. 0476378 E, 5369315 N

Project Number:	TY151027	Drilling Location:	North East Part of Site	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15	Date Completed: 29 Sep 15	Revision No.: 0, 18/01/16

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		COMMENTS
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60	Atterberg Limits: W_P W W_L; Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80	INSTRUMENTATION INSTALLATION	no installation, only bentonite
	80 mm brown sandy loam topsoil over brown SAND (probable tailings) trace silt dry	SS	1	57	11	0.5		○			
		SS	2	98	11	1.0		○			
		SS	3	51	7	1.5		○			
	wet	SS	4	69	7	2.0		○			
	END OF BOREHOLE 2.4 (no refusal)										

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Environment & Infrastructure
131 Fielding Road
Lively, Ontario
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Tel +1(705) 682-2632
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

RECORD OF BOREHOLE No. BH15-04 Co-Ord. 0476297 E, 5369068 N

Project Number:	TY151027	Drilling Location:	East of Soccer Field	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15 Date Completed: 29 Sep 15	Revision No.:	0, 18/01/16

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		COMMENTS
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60	Atterberg Limits: W_P W W_L; Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80	INSTRUMENTATION INSTALLATION	no installation, only bentonite
	90 mm brown sandy loam topsoil over					0					
	brown to grey SAND (probable tailings) trace silt dry to moist, oxidation	SS	1	79	16	0.5		○			
		SS	2	56	16	1.0		○			
		SS	3	98	10	1.5		○			
		SS	4	62	15	2.0		○			
		SS	5	70	6	2.5		○			
						3.0					
	END OF BOREHOLE 3.1 (no refusal)										

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Amec Foster Wheeler
Environment & Infrastructure
131 Fielding Road
Lively, Ontario
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

RECORD OF BOREHOLE No. BH15-05 Co-Ord. 0476267 E, 5369187 N

Project Number:	TY151027	Drilling Location:	North of Volleyball Courts	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15 Date Completed: 29 Sep 15	Revision No.:	0, 18/01/16

Lithology Plot	DESCRIPTION Local Ground Surface Elevation:		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)
	100 mm brown sandy loam topsoil over brown SAND (probable tailings) trace silt moist		SS	1	85	15	0.5	
			SS	2	52	12	1.0	
	brown to grey SILT & SAND (probable tailings) moist	1.2	SS	3	66	5	1.5	
	grey SAND (probable tailings) trace silt moist	1.8	SS	4	25	3	2.0	
	END OF BOREHOLE (no refusal)	2.4						

FIELD TESTING: Penetration Testing — ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60

LAB TESTING: Atterberg Limits W_P W W_L Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS: no installation, only bentonite

Amec Foster Wheeler
Environment & Infrastructure
131 Fielding Road
Lively, Ontario
Canada P3Y 1L7
Tel +1(705) 682-2632
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RECORD OF BOREHOLE No. BH15-06 Co-Ord. 0476243 E, 5369107 N

Project Number:	TY151027	Drilling Location:	North Part of Soccer Field	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15	Date Completed: 29 Sep 15	Revision No.: 0, 18/01/16

Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)
	130 mm brown sandy loam topsoil over						
	brown to grey SAND (probable tailings) trace silt moist	SS	1	93	5	0.5	
		SS	2	44	17	1.0	
		SS	3	61	7	1.5	
		SS	4	43	8	2.0	
	END OF BOREHOLE 2.4 (no refusal)						

FIELD TESTING: Penetration Testing — ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60

LAB TESTING: Atterberg Limits W_P W W_L Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS: no installation, only bentonite

Amec Foster Wheeler
Environment & Infrastructure
131 Fielding Road
Lively, Ontario
Canada P3Y 1L7
Tel +1(705) 682-2632
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

Scale: 1 : 30

RECORD OF BOREHOLE No. BH15-07 Co-Ord. 0476239 E, 5369027 N

Project Number:	TY151027	Drilling Location:	South Part of Soccer Field	Logged by:	KAT
Project Client:	City of Timmins	Drilling Method:	200 mm Hollow Stem Augers	Compiled by:	MAT
Project Name:	Hollinger Park Soil Survey	Drilling Machine:	Skidder Mounted Drill	Reviewed by:	SEW
Project Location:	Timmins, Ontario	Date Started:	29 Sep 15	Date Completed: 29 Sep 15	Revision No.: 0, 18/01/16

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		COMMENTS
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 15 30 45 60	Atterberg Limits: W_P W W_L Plastic Liquid; ✳ Passing 75 um (%); ○ Moisture Content (%) 20 40 60 80	INSTRUMENTATION INSTALLATION	no installation, only bentonite
	140 mm brown sandy loam topsoil over brown to grey SAND (probable tailings) trace silt moist	SS	1	49	10	0.5					
		SS	2	41	15	1.0					
		SS	3	98	11	1.5					
		SS	4	41	17	2.0					
	grey 2.4 SILT & SAND (probable tailings) wet	SS	5	56	2						
	END OF BOREHOLE 3.1 (no refusal)										

Amec Foster Wheeler
Environment & Infrastructure
131 Fielding Road
Lively, Ontario
Canada P3Y 1L7
Tel +1(705) 682-2632
Fax +1(705) 682-2260
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▽ No freestanding groundwater measured in open borehole on completion. ■ Open to full depth on completion.

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR
131 FIELDING ROAD
LIVELY, ON P3Y1L7
(705) 682-2632

ATTENTION TO: Shelley Wainio

PROJECT: TY151027

AGAT WORK ORDER: 15T026074

SOIL ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 09, 2015

PAGES (INCLUDING COVER): 10

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2015-10-02

DATE REPORTED: 2015-10-09

		SAMPLE DESCRIPTION:		BH03-1-1	BH03-1-2	BH03-2	BH03-4	BH04-1-1	BH04-1-2	BH04-2	BH04-4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015
Parameter	Unit	G / S	RDL	7047904	7047906	7047907	7047908	7047909	7047910	7047911	7047912
Antimony	µg/g	1.3	0.8	**1.7**	<0.8	<0.8	<0.8	1.2	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	**176**	**242**	**227**	**458**	**155**	**203**	**294**	**277**
Cadmium	µg/g	1.2	0.5	1.2	0.8	0.7	0.6	1.0	<0.5	<0.5	<0.5
Cobalt	µg/g	21	0.5	**23.1**	**28.2**	**28.5**	**45.5**	19.5	**25.7**	**29.9**	**28.8**
Copper	µg/g	92	1	**285**	88	76	86	77	63	68	68
Lead	µg/g	120	1	49	26	22	35	88	18	26	39
Nickel	µg/g	82	1	49	52	50	72	37	44	49	44
Selenium	µg/g	1.5	0.4	**1.6**	**1.7**	1.4	**2.9**	1.2	1.2	**1.6**	**1.7**
Silver	µg/g	0.5	0.2	**1.2**	0.4	0.4	0.5	**0.6**	0.3	0.4	0.4
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	21	23	21	13	16	18	12	12
Zinc	µg/g	290	5	**374**	**337**	**329**	259	**418**	240	217	164

		SAMPLE DESCRIPTION:		BH04-5	BH06-1	BH06-3-1	BH06-3-3	DUP 1	DUP 2	BH06-2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015
Parameter	Unit	G / S	RDL	7047913	7047914	7047915	7047916	7047917	7047919	7047921
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	**273**	**213**	**140**	**218**	**262**	**211**	**453**
Cadmium	µg/g	1.2	0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.5	0.6
Cobalt	µg/g	21	0.5	**31.3**	**25.4**	17.2	**26.2**	**28.0**	**26.8**	**43.8**
Copper	µg/g	92	1	70	67	44	65	66	68	**101**
Lead	µg/g	120	1	18	21	23	61	26	18	33
Nickel	µg/g	82	1	46	46	28	39	45	46	68
Selenium	µg/g	1.5	0.4	**1.6**	1.3	1.0	1.4	**1.7**	1.1	**2.6**
Silver	µg/g	0.5	0.2	0.3	0.3	<0.2	0.2	0.3	0.3	**0.6**
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	13	21	13	12	12	19	13
Zinc	µg/g	290	5	199	**291**	**303**	177	235	248	270

Certified By:

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2015-10-02

DATE REPORTED: 2015-10-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - ORPs (Soil) - Hg

DATE RECEIVED: 2015-10-02 **DATE REPORTED: 2015-10-09**

				SAMPLE DESCRIPTION:	BH03-1-1	BH03-1-2	BH03-2	BH03-4	BH04-1-1	BH04-1-2	BH04-2	BH04-4
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015
Parameter	Unit	G / S	RDL		7047904	7047906	7047907	7047908	7047909	7047910	7047911	7047912
Mercury	µg/g	0.27	0.10		0.53	1.06	1.07	1.07	0.66	0.66	0.60	0.37

				SAMPLE DESCRIPTION:	BH04-5	BH06-1	BH06-3-1	BH06-3-3	DUP 1	DUP 2	BH06-2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015	9/29/2015
Parameter	Unit	G / S	RDL		7047913	7047914	7047915	7047916	7047917	7047919	7047921
Mercury	µg/g	0.27	0.10		0.57	0.91	1.17	0.34	0.76	0.68	0.94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	1.7
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	176
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	23.1
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	285
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.6
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	1.2
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	374
7047904	BH03-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.53
7047906	BH03-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	242
7047906	BH03-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	28.2
7047906	BH03-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.7
7047906	BH03-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	337
7047906	BH03-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	1.06
7047907	BH03-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	227
7047907	BH03-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	28.5
7047907	BH03-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	329
7047907	BH03-2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	1.07
7047908	BH03-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	458
7047908	BH03-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	45.5
7047908	BH03-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	2.9
7047908	BH03-4	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	1.07
7047909	BH04-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	155
7047909	BH04-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.6
7047909	BH04-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	418
7047909	BH04-1-1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.66
7047910	BH04-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	203
7047910	BH04-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	25.7
7047910	BH04-1-2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.66
7047911	BH04-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	294
7047911	BH04-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	29.9
7047911	BH04-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.6
7047911	BH04-2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.60
7047912	BH04-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	277
7047912	BH04-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	28.8
7047912	BH04-4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.7
7047912	BH04-4	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.37
7047913	BH04-5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	273
7047913	BH04-5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	31.3
7047913	BH04-5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.6
7047913	BH04-5	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.57
7047914	BH06-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	213
7047914	BH06-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	25.4
7047914	BH06-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	291

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047914	BH06-1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.91
7047915	BH06-3-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	140
7047915	BH06-3-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	303
7047915	BH06-3-1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	1.17
7047916	BH06-3-3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	218
7047916	BH06-3-3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	26.2
7047916	BH06-3-3	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.34
7047917	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	262
7047917	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	28.0
7047917	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	1.7
7047917	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.76
7047919	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	211
7047919	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	26.8
7047919	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.68
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	453
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	43.8
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	101
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	1.5	2.6
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.6
7047921	BH06-2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.94

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CANADA L4Z 1Y2
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Quality Assurance

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Oct 09, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Comprehensive) (Soil)															
Antimony	7047904	7047904	1.7	2.3	30.0%	< 0.8	95%	70%	130%	105%	80%	120%	105%	70%	130%
Arsenic	7047904	7047904	176	173	1.7%	< 1	113%	70%	130%	97%	80%	120%	100%	70%	130%
Cadmium	7047904	7047904	1.2	1.1	8.7%	< 0.5	95%	70%	130%	106%	80%	120%	91%	70%	130%
Cobalt	7047904	7047904	23.1	22.3	3.5%	< 0.5	88%	70%	130%	93%	80%	120%	83%	70%	130%
Copper	7047904	7047904	285	275	3.6%	< 1	81%	70%	130%	97%	80%	120%	92%	70%	130%
Lead	7047904	7047904	49	48	2.1%	< 1	96%	70%	130%	90%	80%	120%	89%	70%	130%
Nickel	7047904	7047904	49	48	2.1%	< 1	88%	70%	130%	92%	80%	120%	82%	70%	130%
Selenium	7047904	7047904	1.6	1.7	6.1%	< 0.4	105%	70%	130%	93%	80%	120%	96%	70%	130%
Silver	7047904	7047904	1.2	1.1	8.7%	< 0.2	99%	70%	130%	98%	80%	120%	99%	70%	130%
Thallium	7047904	7047904	<0.4	<0.4	0.0%	< 0.4	97%	70%	130%	95%	80%	120%	92%	70%	130%
Vanadium	7047904	7047904	21	21	0.0%	< 1	96%	70%	130%	95%	80%	120%	88%	70%	130%
Zinc	7047904	7047904	374	369	1.3%	< 5	92%	70%	130%	98%	80%	120%	94%	70%	130%
O. Reg. 153(511) - ORPs (Soil) - Hg															
Mercury	7047904	7047904	0.53	0.53	0.0%	< 0.10	102%	70%	130%	93%	80%	120%	91%	70%	130%

Certified By:

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Method Summary

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

AGAT WORK ORDER: 15T026074

PROJECT: TY151027

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only
Work Order #: 1ST 026074
Cooler Quantity: 2bh
Arrival Temperatures: 6.9 | 5.2 | 5.0 / 4.7 | 5.3 | 5.9
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: Amec Foster Wheeler
Contact: Shelley Wainio
Address: 131 Fielding Road, Lively, ON, P3Y 1L7
Phone: 705-682-2632 Fax: 705-682-2260
Reports to be sent to:
1. Email: shelley.wainio@amecfw.com
2. Email: tim.mcbride@amecfw.com

Regulatory Requirements:
☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04 Table 1 *Indicate One*
☐ Ind/Com ☑ Res/Park ☐ Agriculture
Soil Texture *(Check One)* ☑ Coarse ☐ Fine

☐ Sewer Use ☐ Sanitary ☐ Storm
Region _____ *Indicate One*

☐ Regulation 558 ☐ CCME ☐ Prov. Water Quality Objectives (PWQO) ☐ Other _____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply): _____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:
Project: TY151027
Site Location:
Sampled By: Kyle Theriault
AGAT Quote #: 6 7652 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address: same
Email:

Sample Matrix Legend
B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr^{6+} ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	metals as per quote #67652
BH03-1-1	Sep29/15		1	S																	X
BH03-1-2			1																		X
BH03-2			1																		X
~~BH03-3-1~~			1																		
~~BH03-3-2~~			1																		
BH03-4			1																		X
BH04-1-1			1																		X
BH04-1-2			1																		X
BH04-2			1																		X
~~BH04-3~~			1																		
BH04-4			1																		X

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
S. Wainio	Oct 1/15	3:00pm	Shanmin	Oct 2/15	11:20a
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 2
N°: T 011708

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: Amec Foster Wheeler
Contact: Shelley Wainio
Address: 131 Fielding Road
Lively, ON, P3Y 1L7
Phone: 705-682-2632 Fax: 705-682-2260
Reports to be sent to:
1. Email: shelley.wainio@amecfw.com
2. Email: tim.mcbride@amecfw.com

Project Information:

Project: TY151027
Site Location:
Sampled By: Kyle Theriault
AGAT Quote #: 67652 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company:
Contact: same
Address:
Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04 Table 1 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Laboratory Use Only

Work Order #:
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions
BH04-5	Sep 29/15		1	S	
BH06-1			1		
~~BH06-2~~			1		
BH06-3-1			1		
~~BH06-3-2~~			1		
BH06-3-3			1		
~~BH06-4~~			2		
Dup1			2		
Dup2			2		
BH06-2			1		

(Check Applicable)

Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl⁻ ☐CN⁻ ☐Cr⁶⁺ ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	Metals as per Quote #67652
															X
															X
															X
															X
															X
															X
															X

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
S. Wainio / S. Wainio	Oct 1/2015	3:00pm			
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

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Nº: T 004189

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR
131 FIELDING ROAD
LIVELY, ON P3Y1L7
(705) 682-2632

ATTENTION TO: Shelley Wainio

PROJECT: TY151027

AGAT WORK ORDER: 15T026071

SOIL ANALYSIS REVIEWED BY: Sofka Pehlyova, Senior Analyst

DATE REPORTED: Oct 09, 2015

PAGES (INCLUDING COVER): 14

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2015-10-02

DATE REPORTED: 2015-10-09

		SAMPLE DESCRIPTION:		GS1	GS2	GS3	GS4	GS5	GS6	GS7	GS8
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/29/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter	Unit	G / S	RDL	7047792	7047793	7047794	7047795	7047796	7047797	7047798	7047799
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	1.2	<0.8	<0.8	<0.8	1.0
Arsenic	µg/g	18	1	**192**	**211**	**62**	**231**	**170**	**169**	**121**	**203**
Cadmium	µg/g	1.2	0.5	1.2	**1.3**	0.6	**1.9**	1.2	1.0	0.9	1.1
Cobalt	µg/g	21	0.5	**23.5**	**26.0**	10.4	**31.3**	**21.8**	**22.5**	16.2	**25.0**
Copper	µg/g	92	1	78	**118**	63	**135**	81	**203**	**163**	**111**
Lead	µg/g	120	1	40	62	31	**149**	45	33	24	45
Nickel	µg/g	82	1	47	50	24	62	41	47	38	46
Selenium	µg/g	1.5	0.4	1.4	1.4	0.5	1.3	1.2	1.3	1.3	1.5
Silver	µg/g	0.5	0.2	0.5	**0.8**	0.2	**1.2**	**0.6**	**0.8**	0.5	**0.7**
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	22	22	16	35	21	19	20	21
Zinc	µg/g	290	5	**357**	**395**	172	**376**	**341**	273	222	**351**

		SAMPLE DESCRIPTION:		GS9	GS10	GS11	GS12	GS13	GS14	GS15	GS16
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter	Unit	G / S	RDL	7047800	7047801	7047802	7047803	7047804	7047805	7047806	7047807
Antimony	µg/g	1.3	0.8	<0.8	**1.8**	**2.9**	**1.6**	**20.2**	**3.9**	<0.8	<0.8
Arsenic	µg/g	18	1	**132**	**129**	**176**	**179**	**160**	**136**	**29**	**137**
Cadmium	µg/g	1.2	0.5	1.0	**1.4**	**1.3**	**1.3**	**1.8**	**1.5**	<0.5	1.2
Cobalt	µg/g	21	0.5	18.0	17.3	**21.3**	**22.2**	21.0	18.2	5.0	17.8
Copper	µg/g	92	1	**100**	88	**102**	**117**	**335**	**109**	26	**106**
Lead	µg/g	120	1	42	**134**	**202**	112	**417**	**267**	17	100
Nickel	µg/g	82	1	35	35	41	44	41	36	13	36
Selenium	µg/g	1.5	0.4	1.0	1.1	1.4	1.2	1.3	1.1	<0.4	1.0
Silver	µg/g	0.5	0.2	**0.8**	**0.8**	**0.7**	**0.9**	**1.3**	**0.8**	<0.2	**1.0**
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	20	18	19	19	22	18	14	21
Zinc	µg/g	290	5	271	**549**	**769**	**534**	**892**	**1090**	91	**431**

Certified By: Sofiya Pehlyova

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CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2015-10-02

DATE REPORTED: 2015-10-09

		SAMPLE DESCRIPTION:		GS17	GS18	GS19	GS20	GS21	GS22	GS23	GS24
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter	Unit	G / S	RDL	7047808	7047809	7047810	7047811	7047812	7047813	7047814	7047815
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	**1.4**
Arsenic	µg/g	18	1	**178**	**156**	**173**	**140**	**168**	**33**	**74**	**240**
Cadmium	µg/g	1.2	0.5	1.0	0.9	1.2	1.2	1.1	<0.5	<0.5	1.2
Cobalt	µg/g	21	0.5	**21.4**	16.3	**21.4**	17.9	**21.6**	7.3	10.1	**28.4**
Copper	µg/g	92	1	79	**107**	**99**	**142**	**117**	28	51	**101**
Lead	µg/g	120	1	33	28	45	51	35	13	15	103
Nickel	µg/g	82	1	41	39	42	42	45	19	22	51
Selenium	µg/g	1.5	0.4	1.1	1.0	1.2	1.3	1.0	<0.4	0.6	1.4
Silver	µg/g	0.5	0.2	0.5	0.4	**0.6**	**0.7**	**0.7**	<0.2	0.2	**0.8**
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	18	25	19	19	17	16	15	20
Zinc	µg/g	290	5	281	267	**323**	281	**314**	86	130	**477**

		SAMPLE DESCRIPTION:		DUP 1	DUP 2	DUP 3
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015
Parameter	Unit	G / S	RDL	7047817	7047820	7047822
Antimony	µg/g	1.3	0.8	0.9	**1.4**	<0.8
Arsenic	µg/g	18	1	**189**	**161**	**160**
Cadmium	µg/g	1.2	0.5	1.0	1.2	**1.3**
Cobalt	µg/g	21	0.5	**23.6**	20.3	19.5
Copper	µg/g	92	1	**105**	**106**	**116**
Lead	µg/g	120	1	41	103	108
Nickel	µg/g	82	1	43	40	40
Selenium	µg/g	1.5	0.4	1.3	1.2	0.9
Silver	µg/g	0.5	0.2	**0.6**	**0.9**	**1.1**
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4
Vanadium	µg/g	86	1	19	18	22
Zinc	µg/g	290	5	**327**	**497**	**474**

Certified By: Sofiya Pehlyova

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2015-10-02

DATE REPORTED: 2015-10-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

Certified By: Sofiya Pehlyova

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - ORPs (Soil) - Hg

DATE RECEIVED: 2015-10-02 **DATE REPORTED: 2015-10-09**

			SAMPLE DESCRIPTION:		GS1	GS2	GS3	GS4	GS5	GS6	GS7	GS8
			SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			DATE SAMPLED:		9/29/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter		Unit	G / S	RDL	7047792	7047793	7047794	7047795	7047796	7047797	7047798	7047799
Mercury		µg/g	0.27	0.10	**1.19**	**0.87**	**0.41**	**0.82**	**0.96**	**0.74**	**0.42**	**0.74**

			SAMPLE DESCRIPTION:		GS9	GS10	GS11	GS12	GS13	GS14	GS15	GS16
			SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter		Unit	G / S	RDL	7047800	7047801	7047802	7047803	7047804	7047805	7047806	7047807
Mercury		µg/g	0.27	0.10	**0.63**	**0.65**	**0.64**	**0.71**	**0.80**	**0.61**	<0.10	**0.72**

			SAMPLE DESCRIPTION:		GS17	GS18	GS19	GS20	GS21	GS22	GS23	GS24
			SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015	9/30/2015
Parameter		Unit	G / S	RDL	7047808	7047809	7047810	7047811	7047812	7047813	7047814	7047815
Mercury		µg/g	0.27	0.10	**0.53**	**0.32**	**0.69**	**0.56**	**0.64**	0.13	0.25	**0.87**

			SAMPLE DESCRIPTION:		DUP 1	DUP 2	DUP 3
			SAMPLE TYPE:		Soil	Soil	Soil
			DATE SAMPLED:		9/30/2015	9/30/2015	9/30/2015
Parameter		Unit	G / S	RDL	7047817	7047820	7047822
Mercury		µg/g	0.27	0.10	**0.68**	**0.72**	**0.79**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

Certified By: Sofiya Pehlyova

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047792	GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	192
7047792	GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	23.5
7047792	GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	357
7047792	GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	1.19
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	211
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.3
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	26.0
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	118
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	395
7047793	GS2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.87
7047794	GS3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	62
7047794	GS3	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.41
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	231
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.9
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	31.3
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	135
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	149
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	1.2
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	376
7047795	GS4	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.82
7047796	GS5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	170
7047796	GS5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	21.8
7047796	GS5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.6
7047796	GS5	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	341
7047796	GS5	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.96
7047797	GS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	169
7047797	GS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	22.5
7047797	GS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	203
7047797	GS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8
7047797	GS6	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.74
7047798	GS7	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	121
7047798	GS7	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	163
7047798	GS7	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.42
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	203
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	25.0
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	111
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.7
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	351
7047799	GS8	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.74
7047800	GS9	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	132
7047800	GS9	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	100
7047800	GS9	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8

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Guideline Violation

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047800	GS9	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.63
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	1.8
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	129
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.4
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	134
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	549
7047801	GS10	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.65
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	2.9
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	176
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.3
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	21.3
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	102
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	202
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.7
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	769
7047802	GS11	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.64
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	1.6
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	179
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.3
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	22.2
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	117
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.9
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	534
7047803	GS12	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.71
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	20.2
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	160
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.8
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	335
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	417
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	1.3
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	892
7047804	GS13	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.80
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	3.9
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	136
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.5
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	109
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	267
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	1090
7047805	GS14	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.61
7047806	GS15	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	29
7047807	GS16	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	137

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047807	GS16	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	106
7047807	GS16	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	1.0
7047807	GS16	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	431
7047807	GS16	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.72
7047808	GS17	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	178
7047808	GS17	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	21.4
7047808	GS17	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.53
7047809	GS18	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	156
7047809	GS18	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	107
7047809	GS18	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.32
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	173
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	21.4
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	99
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.6
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	323
7047810	GS19	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.69
7047811	GS20	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	140
7047811	GS20	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	142
7047811	GS20	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.7
7047811	GS20	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.56
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	168
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	21.6
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	117
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.7
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	314
7047812	GS21	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.64
7047813	GS22	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	33
7047814	GS23	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	74
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	1.4
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	240
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	28.4
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	101
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.8
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	477
7047815	GS24	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.87
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	189
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cobalt	21	23.6
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	105
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.6
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	327
7047817	DUP 1	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.68
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Antimony	1.3	1.4
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	161

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Guideline Violation

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

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FAX (905)712-5122
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CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

ATTENTION TO: Shelley Wainio

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	106
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	0.9
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	497
7047820	DUP 2	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.72
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	160
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Cadmium	1.2	1.3
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Copper	92	116
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Silver	0.5	1.1
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Zinc	290	474
7047822	DUP 3	ON T1 S RPI/ICC	O. Reg. 153(511) - ORPs (Soil) - Hg	Mercury	0.27	0.79

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CANADA L4Z 1Y2
TEL (905)712-5100
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Quality Assurance

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Oct 09, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Comprehensive) (Soil)															
Antimony	7047792	7047792	<0.8	<0.8	0.0%	< 0.8	97%	70%	130%	107%	80%	120%	106%	70%	130%
Arsenic	7047792	7047792	192	191	0.5%	< 1	107%	70%	130%	97%	80%	120%	99%	70%	130%
Cadmium	7047792	7047792	1.2	1.3	0.5%	< 0.5	100%	70%	130%	103%	80%	120%	94%	70%	130%
Cobalt	7047792	7047792	23.5	24.4	3.8%	< 0.5	85%	70%	130%	92%	80%	120%	84%	70%	130%
Copper	7047792	7047792	78	82	5.0%	< 1	79%	70%	130%	97%	80%	120%	90%	70%	130%
Lead	7047792	7047792	40	42	4.9%	< 1	90%	70%	130%	93%	80%	120%	93%	70%	130%
Nickel	7047792	7047792	47	47	0.0%	< 1	83%	70%	130%	93%	80%	120%	83%	70%	130%
Selenium	7047792	7047792	1.4	1.5	6.9%	< 0.4	114%	70%	130%	89%	80%	120%	96%	70%	130%
Silver	7047792	7047792	0.5	0.5	0.0%	< 0.2	90%	70%	130%	101%	80%	120%	98%	70%	130%
Thallium	7047792	7047792	<0.4	<0.4	0.0%	< 0.4	87%	70%	130%	97%	80%	120%	94%	70%	130%
Vanadium	7047792	7047792	22	21	4.7%	< 1	87%	70%	130%	90%	80%	120%	86%	70%	130%
Zinc	7047792	7047792	357	357	0.0%	< 5	90%	70%	130%	98%	80%	120%	101%	70%	130%
O. Reg. 153(511) - Metals (Comprehensive) (Soil)															
Antimony	7047808	7047808	<0.8	<0.8	0.0%	< 0.8	85%	70%	130%	109%	80%	120%	103%	70%	130%
Arsenic	7047808	7047808	178	181	1.7%	< 1	110%	70%	130%	99%	80%	120%	95%	70%	130%
Cadmium	7047808	7047808	1.0	1.0	0.0%	< 0.5	96%	70%	130%	95%	80%	120%	91%	70%	130%
Cobalt	7047808	7047808	21.4	21.6	0.9%	< 0.5	85%	70%	130%	95%	80%	120%	81%	70%	130%
Copper	7047808	7047808	79	81	2.5%	< 1	81%	70%	130%	101%	80%	120%	82%	70%	130%
Lead	7047808	7047808	33	34	3.0%	< 1	94%	70%	130%	93%	80%	120%	86%	70%	130%
Nickel	7047808	7047808	41	42	2.4%	< 1	86%	70%	130%	97%	80%	120%	80%	70%	130%
Selenium	7047808	7047808	1.1	1.1	0.0%	< 0.4	126%	70%	130%	91%	80%	120%	94%	70%	130%
Silver	7047808	7047808	0.5	0.5	0.0%	< 0.2	99%	70%	130%	104%	80%	120%	98%	70%	130%
Thallium	7047808	7047808	<0.4	<0.4	0.0%	< 0.4	97%	70%	130%	98%	80%	120%	92%	70%	130%
Vanadium	7047808	7047808	18	18	0.0%	< 1	90%	70%	130%	98%	80%	120%	83%	70%	130%
Zinc	7047808	7047808	281	285	1.4%	< 5	91%	70%	130%	101%	80%	120%	85%	70%	130%
O. Reg. 153(511) - ORPs (Soil) - Hg															
Mercury	7047792	7047792	1.19	1.13	5.2%	< 0.10	107%	70%	130%	93%	80%	120%	96%	70%	130%
O. Reg. 153(511) - ORPs (Soil) - Hg															
Mercury	7047808	7047808	0.53	0.59	10.7%	< 0.10	100%	70%	130%	95%	80%	120%	91%	70%	130%

Certified By: Sofiya Pehlyova

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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Method Summary

CLIENT NAME: AMEC FOSTER WHEELER ENVIRO&INFRASTR

AGAT WORK ORDER: 15T026071

PROJECT: TY151027

ATTENTION TO: Shelley Wainio

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only

Work Order #: 1ST 026071

Cooler Quantity: 26k

Arrival Temperatures: 6.9 | 5.2 | 5.0
4.7 | 5.3 | 5.9

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: Amec Foster Wheeler
Contact: Shelley Wainio
Address: 131 Fielding Road
Lively, ON P3Y 1L7
Phone: 705-682-2632 Fax: 705-682-2260
Reports to be sent to:
1. Email: Shelley.Wainio@amecFW.com
2. Email: Tim.Mcbride@amecFW.com

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ (Indicate One)

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ____ (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply): ____

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:

Project: TY151027
Site Location:
Sampled By: Kyle Theriault
AGAT Quote #: 67652 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact: same
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN⁻ ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ NO_3/NO_2 ☐ Total N ☐ Hg ☐ pH ☐ SAR	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	metals as per quote 5976 #1
GS1	29/09/15	11am	1	S																X
GS2	30/09/15	11am	1	S																
GS3	1	1	1	S																
GS4			1	S																
GS5			1	S																
GS6			1	S																
GS7			1	S																
GS8			1	S																
GS9			1	S																
GS10			1	S																
GS11			1	S																

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
S. Wainio	Oct1/2015	3:00pm	Shazmin	Oct2/15	11:20am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

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N°: T 011709

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: Amec Foster Wheeler
Contact: Shelley Wainio
Address: 131 Fielding Road
Lively, ON, P3Y 1L7
Phone: 705-682-2632 Fax: 705-682-2260
Reports to be sent to:
1. Email: Shelley.wainio@amecfw.com
2. Email: tim.mcbride@amecfw.com

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other _____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Laboratory Use Only

Work Order #: _____
Cooler Quantity: _____
Arrival Temperatures: _____
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: _____

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply): _____

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:

Project: TY151027
Site Location:
Sampled By: Kyle Theriault
AGAT Quote #: 67652 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ NO_3/NO_2 ☐ Total N ☐ Hg ☐ pH ☐ SAR	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	metals as per quote # 67652
GS12	Sept 30/15	11am	1	S																X
GS13			1	S																
GS14			1	S																
GS15			1	S																
GS16			1	S																
GS17			1	S																
GS18			1	S																
GS19			1	S																
GS20			1	S																
GS21			1	S																
GS22			1	S																

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
S. Wainio S.W.	Oct 1/2015	3:00pm			
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

N°: T 011710

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only

Work Order #:

Cooler Quantity:

Arrival Temperatures:

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: Amec Foster Wheeler
Contact: Shelley Wainio
Address: 131 Fielding Road, Lively, ON, P3Y 1L7
Phone: 705-682-2632 Fax: 705-682-2260
Reports to be sent to:
1. Email: Shelley.wainio@amecfw.com
2. Email: tim.mcbride@amecfw.com

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04 Table 1 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ (Indicate One)

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ____ (Indicate One)

Is this submission for a Record of Site Condition? ☐ Yes ☑ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:

Project: TY151027
Site Location:
Sampled By: Kyle Theriault
AGAT Quote #: 67652 PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information: Bill To Same: Yes ☑ No ☐

Company: same
Contact:
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Analysis columns: Metals and Inorganics; Metal Scan; Hydride Forming Metals; Client Custom Metals; (Check Applicable) ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr^{6+} ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR; Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2; Volatiles: ☐VOC ☐BTEX ☐THM; CCME Fractions 1 to 4; ABNs; PAHs; Chlorophenols; PCBs; Organochlorine Pesticides; TCLP Metals/Inorganics; Sewer Use; metals as per quote #67652

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	metals as per quote #67652
GS23	30/09/15	11am	1	S		X
GS24	↓	↓	1	S		↓
GSDup1	↓	↓	2	S		↓
GSDup2	↓	↓	2	S		↓
GS Dup3	↓	↓	2	S		↓

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
S. Wainio [signature]	Oct 1/2015	3:00pm	[signature]		
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

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Nº: T 011703

APPENDIX C

LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
   (a) The Standard Terms and Conditions which form a part of our 31 August 2015 Professional Services Contract;
   (b) The Scope of Services;
   (c) Time and Budgetary limitations as described in our Contract; and,
   (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in Amec Foster Wheeler's opinion, for direct observation.
4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different of other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Amec Foster Wheeler must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Amec Foster Wheeler's services during the implementation of any remedial measures will allow Amec Foster Wheeler to observe compliance with the conclusions and recommendations contained in the report. Amec Foster Wheeler's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Amec Foster Wheeler accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Amec Foster Wheeler.
11. Provided that the report is still reliable, and less than 12 months old, Amec Foster Wheeler will issue a third-party reliance letter to parties client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Amec Foster Wheeler's report, by such reliance agree to be bound by our proposal and Amec Foster Wheeler's standard reliance letter. Amec Foster Wheeler's standard reliance letter indicates that in no event shall Amec Foster Wheeler be liable for any damages, howsoever arising, relating to third-party reliance on Amec Foster Wheeler's report. No reliance by any party is permitted without such agreement.