



November 2, 2016

Lyndsay Waller, B.Sc., EP
Regional Municipality of Durham
605 Rossland Road East
P.O. Box 623
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L1N 6A3

**Re: Soil Testing Plan Results and Summary
Durham York Energy Centre – 2016 Soil Sampling Program
Project No. 111-26648-00-100-1624011**

Dear Ms. Waller:

WSP Canada Inc. (WSP) was retained by the Regional Municipality of Durham (Durham) to conduct soil sampling as detailed in The *Durham York Energy Centre Soils Testing Plan* (Soil Testing Plan) document which was approved by the Ministry of the Environment and Climate Change (MOECC) after a second revision on February 8, 2013. The Soil Testing Plan was prepared to satisfy Conditions 7(10), 13(4) and 15(4) of Certificate of Approval #7306-8FDKNX (CofA). The preparation of this report has been completed within one (1) month of receipt of the laboratory results, in accordance with Condition 15(4) of the CofA.

1. BACKGROUND

The Durham York Energy Centre (DYEC) is an energy from municipal solid waste facility, currently operating in the Municipality of Clarington, Ontario. The DYEC property is located on the west side of Osborne Road, southeast of the Courtice Road and Highway 401 interchange, and north of the Courtice Water Pollution Control Plant (CWPCP) and the CN Railway, as shown in **Figure 1**. Approval for the operation of the DYEC was received from the MOECC under the *Environmental Assessment Act* (EPA) on November 3, 2010. Three (3) applications for CofA under the EPA for waste; air and noise; and stormwater were approved as a multi-media CofA (#7306-8FDKNX) by the MOECC on June 28, 2011.

During the baseline study undertaken in the Environmental Assessment (EA) for the DYEC, 23 soil samples were collected at 17 sampling locations from areas surrounding the site. The results for the parameters analyzed during the baseline study satisfied the Soil, Ground Water and Sediment Standards (SGSS) Table 1 Standards, where applicable; and the results of the baseline study determined the appropriate analysis suite that should be included in the Soil Testing Plan.

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The first stage of the Soil Testing Plan was undertaken in August 2013 by WSP (then GENIVAR) to quantify background (baseline) contaminant concentrations prior to the operation of the DYEC. The DYEC was under construction during the 2013 soil sampling event and, in accordance with the Soil Testing Plan, only the upwind and downwind locations were sampled.

A soil sampling event was completed in August 2015 which was representative of the Year 1 operation of the facility, as defined in the Soil Testing Plan, and incorporated a third soil plot area near the property boundary, designated as the DYEC location. The soil sampling event completed in August 2016 is representative of the Year 2 operation of the facility, as defined in the Soil Testing Plan.

The principal objective of the soil sampling conducted during this portion of the Soil Testing Plan is to determine if the operation at the DYEC has altered parameter concentrations within the surficial soils in comparison to: i) the baseline data collected in 2013 and the Year 1 data collected in 2015, ii) the SGSS Table 1 Standards, and iii) between upwind, property line, and downwind locations.

2. METHODOLOGY

2.1 PLOT SET-UP PROCEDURES

Ambient air monitoring stations have already been established on the DYEC property and at the upwind and downwind sampling locations; and, in accordance with Section 13 (4) (a) of the CofA, the Soil Testing Plot locations were positioned in close proximity to the ambient monitoring stations.

The upwind plot is established on the CWPCP property, which is located approximately one (1) kilometer (km) south of the DYEC. The ambient air monitoring station and soil sampling plot are positioned near the western extent of the CWPCP property, as shown in **Figure 2**. The downwind ambient air monitoring station and sampling plot are located on the western extent of a parcel of private property leased by Durham. The downwind property is located on the southeast corner of Baseline and Rundle Roads in Clarington, approximately 2.5 kms from the DYEC, as shown in **Figure 3**. The DYEC sampling plot, established in 2015, is located along the eastern extent of the DYEC property fronting Osborne Road, north of the main staff entrance and south of Energy Drive, in a newly landscaped area. The DYEC sampling plot location can be seen on **Figure 4**.

Once the sample plot location on the DYEC property, the upwind plot, and the downwind plot, were re-established with the Durham representatives, WSP field staff began constructing the soil sampling plot layouts.

The sample grids were measured from previously referenced fixed points to ensure that reassembly can occur in the same location during subsequent sampling events, if the metal post used for reference is removed. This procedure permits a more accurate plot location reference, compared to a hand held GPS unit. UTM coordinates were previously established for the plot areas as a backup reference, if required.

The four corners of the grid were laid out using a cloth measuring tape, creating a ten (10) metre by ten (10) metre square. Metal posts were installed in the ground at each of the four corners to mark the outer parameters of the grid. Nine squares, 3.3 m by 3.3 m, were then created within the ten meter squared box, which were then marked with twelve wooden stakes that were pounded into the ground for reference. At the DYEC and upwind sample locations, string was then wrapped around the four corner posts and the twelve inner stakes, to define the exact boundaries of the grid segments. Tall grasses and shrubs restricted string from being used at the downwind location, so extra attention was paid to the grid boundaries to ensure accurate sampling. The entire grid setup was located and again left in place at the downwind location because it is positioned in an area that was hidden from the public and is not likely to be disturbed.

2.2 SOIL SAMPLING

Collection of the soil samples was initiated once the plot and subplot grids were established. WSP field staff used a stainless steel sampling probe to collect an equal quantity of soil at each of the nine subplots (segments) within the respective grids. The probe was decontaminated with a specialized inert detergent mixed with water, and was rinsed with de-ionized water, between sampling at each of the nine segments of the three plots. The soil from each grid was placed into a bucket which had been decontaminated before use and was cleaned again between the plot locations. Nitrile gloves were replaced after each plot sample was collected to reduce the potential for cross-contamination of the samples.

An equivalent quantity of soil was collected from each segment of the three plot grids, from a depth of zero (0) to two (2) centimetres below ground surface, for a total of approximately 1740 millilitres of sample per plot location. The soil contents of the bucket were gently mixed to create a composite sample and then placed into the laboratory supplied glass jars. The sample jars were stored at a temperature of less than 10 °C and handled under chain of custody procedures until received at the laboratory. The laboratory supplied four, amber coloured, glass jars (three 250 ml jars and one 120 ml jar) to submit for analysis. A total of three soil samples were submitted for analysis to AGAT Laboratories (AGAT), located in Mississauga, Ontario. AGAT is a Canadian Association for Laboratory Accreditation (CALA) certified laboratory as required in the Soil Testing Plan. The samples were analysed for select metal parameters, PAHs, and PCDDs/PCDFs as outlined in the approved

Soil Testing Plan. It is noted the required methyl mercury analysis was subcontracted by AGAT to Flett Research Ltd (Flett) of Winnipeg, Manitoba. Flett is accredited to complete methyl mercury analysis. AGAT is accredited to complete the remaining analyses.

2.3 QUALITY ASSURANCE AND QUALITY CONTROL

2.3.1 2016 PROGRAM

Prior to sampling, the sample jars were inspected to ensure that the Teflon liners under the lids were in place and that the jars were clean and unused. The sample containers were labelled with the sample identification, the project number, and the sampling date and time. A laboratory supplied chain of custody was completed. One copy of the chain of custody was submitted with the samples to the laboratory, and one copy was retained for the project file.

As part of the quality assurance/quality control (QA/QC) program for the project, one field-prepared duplicate sample was collected by WSP at each of the three sample plot grids. As instructed by the MOECC in the Soil Testing Plan document, Region of Durham representatives retained the three duplicate samples and have stored them in a cool, dark, dry place. It is noted that lengthy storage periods of the soil samples in excess of the storage times specified in the applicable MOECC reference document will affect the laboratory results for some parameters, if analysis of the duplicate samples is carried out in the future.

In accordance with Section 3.5 of the Soils Testing Plan, sample handling, container requirements for parameter analysis, storage, and preservation requirements were carried out in accordance with the reference document Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act by MOECC Laboratory Services Branch July 1, 2011. Sample handling and storage requirements are described in the reference document in Table A: Soil and Sediment Sample Handling and Storage Requirements (Table A). AGAT has also established its own recommended holding times for the various parameter suites. Table 2-1, below, was prepared to outline and compare the recommended sample hold times from Table A of the reference document, and the AGAT sample holding times related to soil.

Table 2-1: Sample Holding Times

PARAMETER/GROUP	AGAT LABORATORIES HOLDING TIME	PROTOCOL - MOECC LAB SERVICES BRANCH HOLDING TIME
Metals	180 days	180 days
Hexavalent Chromium	28 days	30 days
Mercury/Methyl Mercury	28 days	28 days
PAHs	14 days	60 days
Dioxins/Furans	90 days	Indefinite

The test results, with the exception of dioxins and furans, will be affected if/when tested after the prescribed holding times.

AGAT completed QA/QC protocols as outlined in their CALA procedures. These procedures included, but were not limited to, analysis of laboratory duplicates and blanks, along with analysis of surrogate recovery, as outlined in the Certificates of Analysis provided.

2.3.2 HISTORICAL ROUTINE SAMPLING RESULTS

Based on an additional QA/QC review of the historical dioxin & furans results, slight variances were identified for the chemical results and the Toxic Equivalency (TEQ) calculations reported by the laboratory for the routine sampling events completed in 2013 and 2015. Revised values were provided by AGAT in 2016 to reflect these corrections, and the revised values are included in Table A-3 of this report. The revised Certificates of Analysis for the routine sampling events in 2013 and 2015 are included in Appendix C, along with a copy of the Action Report from the laboratory which outlines the calculation discrepancy.

Table C-1, in Appendix C, provides a comparison summary of the concentrations and calculated values which were revised, compared to the original Certificates of Analysis. The adjusted values represent minor revisions compared to the initial results, with the values continuing to satisfy SGSS Table 1 Standards for residential, parkland, and industrial property uses; and there was no concern for adverse environmental influences or potential effects on human health due to the revised values.

2.4 FIELD DOCUMENTATION

In accordance with the Soil Testing Plan, field notes were recorded by WSP field staff during the execution of the 2016 sampling event. A summary of the field notes is provided in Table 2-2, below.

Table 2-2: Field Note Summary

NOTE CATEGORIES (AS PER MOECC)	NOTES
Site name and photograph	Durham York Energy Center, site photographs are included in the attached Photo log .
UTM coordinates for sample plot locations (NAD 83)	DYEC (centre of grid) – 17 680639, 4860535 Upwind (center of grid) – 17 680038, 4860021 Downwind (center of grid) – 17 681966, 4861859
Field personnel's name	Trevor Swift, C.E.T. and Stephen Heikkila, P.Eng.
Date, time and location of sample collection	August 17, 2016, 8:30 am to 2:30 pm, DYEC, upwind and downwind plot locations
Sample number/ID	DYEC grid – 'DYEC', Upwind grid – 'UPWIND', Downwind grid – 'DOWNWIND'
Whether QA/QC samples were collected	QA/QC samples were collected from the sample locations and are being held by the Region of Durham in accordance with the Soil Testing Plan.
Type of containers used for collection	Soil samples were submitted in three (3) 250 ml amber, glass jars and one (1) 120 ml amber, glass jar for each sample location. The sample containers were provided by AGAT.
Whether samples were preserved	No preservative was used, as specified by AGAT.
Sampling method and composite collection pattern/map of test plot area	See Sections 2.1 and 2.2 and Figures 2, 3 and 4 .
Unusual site conditions	The DYEC sample location was completed within 0.3 m of Osbourne Road. The Downwind sample location was covered with waist high grasses and shrubs.
Weather conditions	Sun with some cloud cover, 22 degrees Celsius.

The field notes summarized above are maintained on file by WSP, if further reference is required.

3. REVIEW AND EVALUATION

The final laboratory Certificates of Analysis presenting the laboratory results were received by WSP and the Regional Municipality of Durham on October 7, 2016, and copies of these certificates are included in Appendix B of this report, for reference.

As stated in the Soil Testing Plan, the soil samples are to be evaluated against the SGSS Table 1 Background Standards for Residential, Parkland, Institutional, Industrial, Commercial, and Community property uses. The SGSS Table 1 Standards are considered to be representative of the upper limits of typical, province-wide, background concentrations in soils that are not contaminated by point sources and are the most conservative standards for comparing soil quality data. The chemical results for the three (3) sampling plots are also to be compared against the baseline data.

3.1 METALS

The metal parameters analyzed for the DYEC, upwind, and downwind sample locations as part of the routine soil testing program are summarized in the attached **Table A-1**, Appendix A. As shown in the table, the concentrations of the analysed metal parameters during the August 2016 sampling event satisfied the SGSS Table 1 Standards for residential, parkland, and industrial property uses. The parameter concentrations for the routine sampling event in 2016 are generally similar to the baseline data although slight increases are observed for select parameters at the three soil plots in 2016 (including the upwind location), compared to the previous results.

3.2 POLYCYCLIC AROMATIC HYDROCARBONS

The PAH parameters analyzed for the DYEC, upwind, and downwind sample locations as part of the routine monitoring program are summarized in the attached **Table A-2**, Appendix A. As shown in the table, the concentrations of the analysed PAH parameters during the August 2016 sampling event satisfied the SGSS Table 1 Standards for residential, parkland, and industrial property uses. The PAH concentrations for the routine sampling event in 2016 were below the reported detection limit, which are similar to the historical baseline data. It is noted that the baseline data includes a detectable concentration for benzo(a)pyrene at the downwind location in 2013, but this sampling event was completed prior to the startup/operation of the facility.

3.3 TOTAL DIOXINS AND FURANS

The Total PCDD/PCDF results for the DYEC, upwind, and downwind sample locations as part of the routine monitoring program are summarized in the attached **Table A-3**, Appendix A. As shown in the table, the concentrations of the analysed dioxins and furans during the August 2016 sampling event satisfied the SGSS Table 1 Standards for residential, parkland, and industrial property uses; with the calculated total TEQ values for the soil samples being lower than the Standard of 7. The parameter concentrations in 2016 are similar to the historical baseline data, prior to the start of operations, with some variability.

3.4 GENERAL REVIEW AND EVALUATION

The soil sampling results at the three sample plots in 2016 were generally similar to one another, and to the historical sampling results; including results obtained prior to the start of operations. Although the concentrations for some metals and total PCDDs/PCDFs during the sampling event in 2016 increased slightly, compared to the historical concentrations (including parameters at the upwind location), other parameter concentrations decreased compared to the historical concentrations. The parameter concentrations at the DYEC and Downwind plot locations are similar to the upwind and EA background levels; therefore, the concentration changes between the sampling locations and the sampling events are likely associated to natural variability of the soil, and to potential alternate off-site sources, and the concentration changes are not attributed to the DYEC facility.

As shown in **Figure 5**, the recent and historical Total PCDD/PCDF values for the routine soil sampling events at the three soil plot areas are comparable to the baseline soil samples collected during the EA process, prior to the approval and construction of the facility, and are similar to the geometric mean of the EA baseline samples. This pattern indicates the characteristics of the soil plot samples obtained during the routine soil sampling events are similar to the background soil quality of the area, and the DYEC has no measurable influence on the levels of dioxins and furans within the surficial soils adjacent to the facility. As shown in Figure 5, the concentration of dioxins and furans at the Downwind location, during the routine sampling events, have remained lower than the EA background geometric mean since the start of operations at the facility.

These patterns will continue to be assessed with future monitoring. The parameter concentrations for the soil samples analyzed satisfied the SGSS Table 1 Standards for residential, parkland, and industrial property uses.

A contingency plan is presented within the Soil Testing Plan in the event a parameter concentration exceeds a baseline sampling value and if a parameter concentration exceeds the SGSS Table 1 Standards. Since the variations in the parameter

concentration for 2016 are not attributed to the DYEC facility, and the parameter concentrations satisfied the SGSS Table 1 Standards, the contingency plan does not need to be implemented at the present time.

4. FUTURE MONITORING

In accordance with the testing period outlined in the Soil Testing Plan, the next soil sampling event is expected to be completed in 2017, once the DYEC has been operating for three years. The sampling event in 2017 will be the third sampling event as part of a three year evaluation program.

5. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the findings presented in the report:

- The soil sampling plot grids have been established as outlined in the Soil Testing Plan. UTM coordinates are available, and at least one steel post remains securely installed at each sampling location, for reassembly during future sampling events.
- The composite samples collected from the DYEC, Upwind, and Downwind soil plot locations in 2016 satisfied the SGSS Table 1 Standards for residential, parkland, and industrial property uses, for the parameters analysed.
- The parameter concentrations for the 2016 sampling event are similar to the historical baseline data, with minor increases and decreases observed for select parameters. These parameter variations are attributed to natural variation of the soil, or to other potential off-site sources, and are not due to the operation of the facility.
- The Regional Municipality of Durham has retained a duplicate sample, collected by WSP, from each sample plot location as outlined in the Soil Testing Plan.

We respectfully submit the following recommendations based on the study, for your consideration:

- The contingency plan does not need to be implemented at the present time.
- The next soil sampling event should be carried out during the summer season, within the third year of operation (2017) at the DYEC, as part of the evaluation program.

Lyndsay Waller
Regional Municipality of Durham



We trust that this letter report satisfies the requirements of the Soil Sampling Plan at this time. Should you have any questions, please feel free to contact the undersigned.

Yours truly,
WSP Canada Inc.

A handwritten signature in black ink that reads "Trevor Swift".

Trevor Swift, C.E.T.
Environmental Consultant

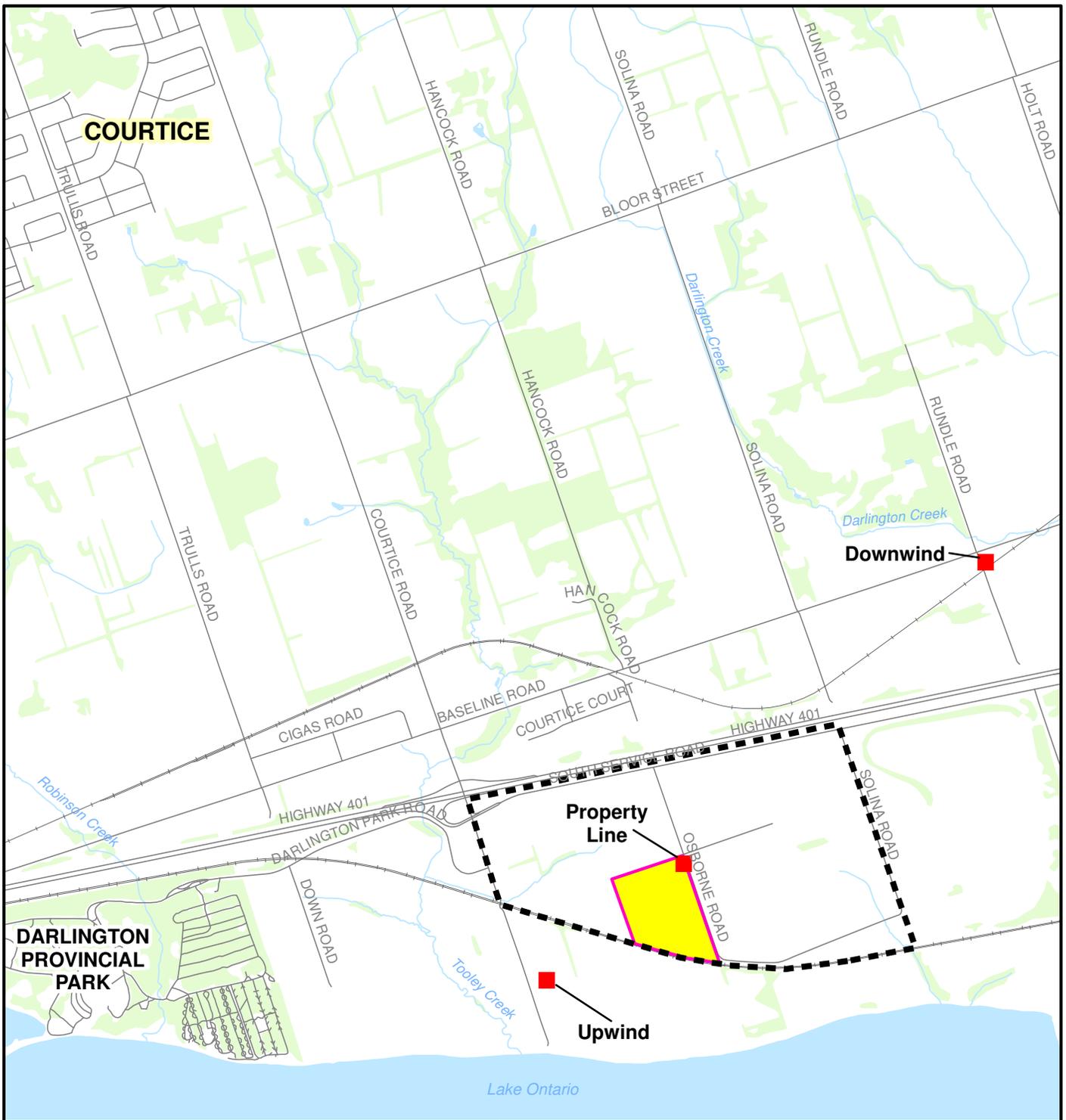
A handwritten signature in blue ink that reads "Stephen J. Taziar".

Stephen J. Taziar, P.Eng., DCE
Senior Project Engineer

TAS:nah

A large teal graphic element occupies the bottom right portion of the page. It consists of a solid teal rectangle with a diagonal line cutting through it from the bottom-left corner towards the top-right. The line is a slightly darker shade of teal than the rectangle itself. The word "FIGURES" is printed in white, uppercase letters in the bottom right corner of the teal area.

FIGURES



LEGEND

-  CLARINGTON ENERGY PARK
-  DURHAM YORK ENERGY CENTRE
-  SOIL PLOT LOCATION



200 100 0 200 Metres

Data Source: Ministry of Natural Resources, Ontario Base Mapping, March 2014.

LOCATION MAP

2016 SOIL TESTING PROGRAM
 DURHAM YORK ENERGY CENTRE
 For Regional Municipalities of Durham and York

DATE: SEPTEMBER 2016

SCALE: 1:25000

PROJECT: 111-26648-00 100-11

FILE. NO.:111-26648-00 100-11 F1



FIGURE

1



LEGEND

-  DURHAM YORK ENERGY CENTRE
-  UPWIND SAMPLING GRID
-  UPWIND AMBIENT AIR MONITORING STATION
-  FENCE



Data Source: Ministry of Natural Resources, Ontario Base Mapping, March 2014. Imagery, Region of Durham, 2015.



UPWIND SAMPLE LOCATION MAP

2016 SOIL TESTING PROGRAM
 DURHAM YORK ENERGY CENTRE
 For Regional Municipalities of Durham and York

DATE: SEPTEMBER 2016

SCALE: 1:8000

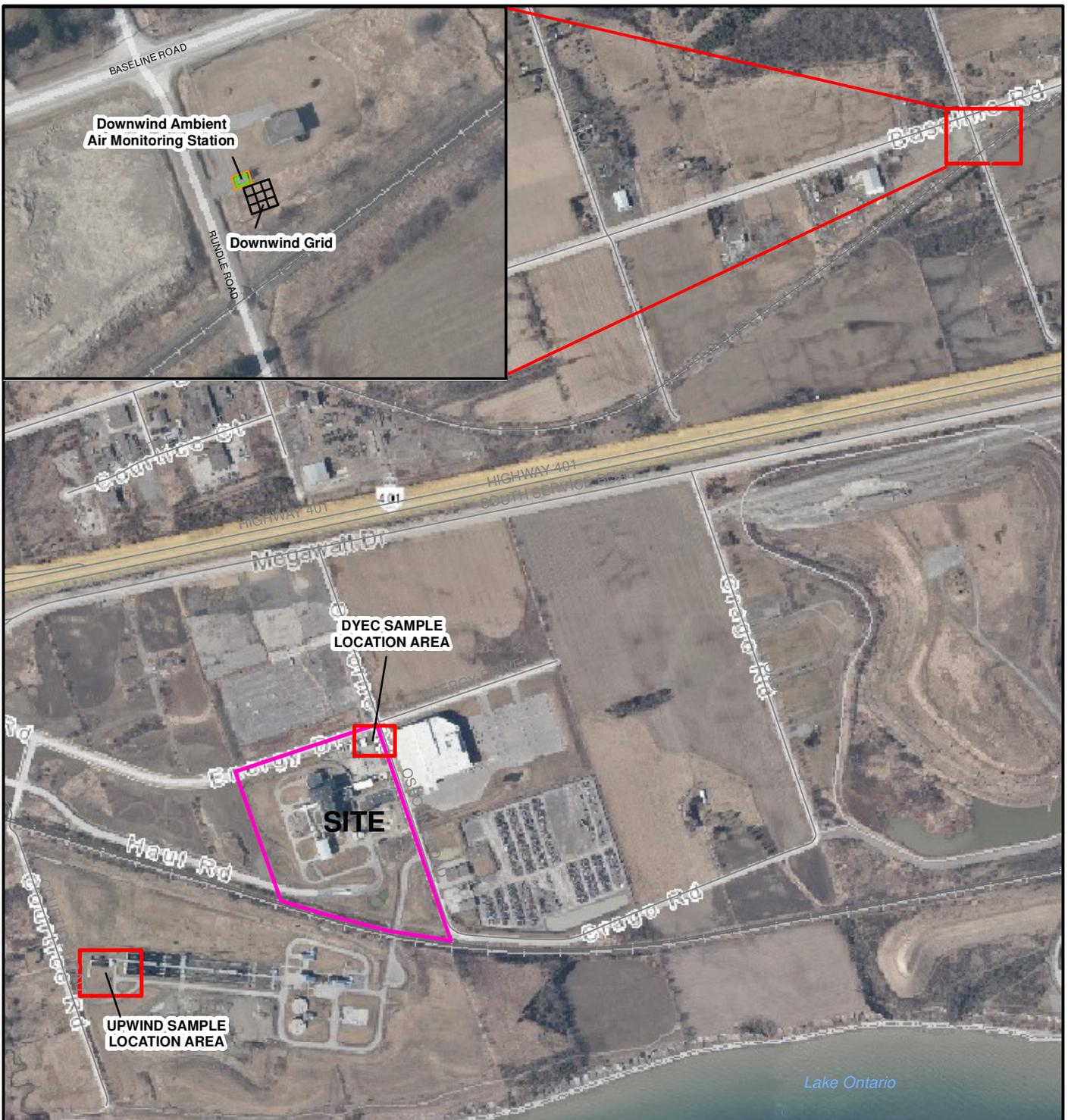
PROJECT: 111-26648-00 100-11

FILE. NO.:111-26648-00 100-11 F2



FIGURE

2



LEGEND

- DURHAM YORK ENERGY CENTRE
- DOWNWIND SAMPLING GRID
- DOWNWIND AMBIENT AIR MONITORING STATION
- FENCE



Data Source: Ministry of Natural Resources, Ontario Base Mapping, March 2014. Imagery, Region of Durham, 2015.



DOWNWIND SAMPLE LOCATION MAP

2016 SOIL TESTING PROGRAM
 DURHAM YORK ENERGY CENTRE
 For Regional Municipalities of Durham and York

DATE: SEPTEMBER 2016

SCALE: 1:12500

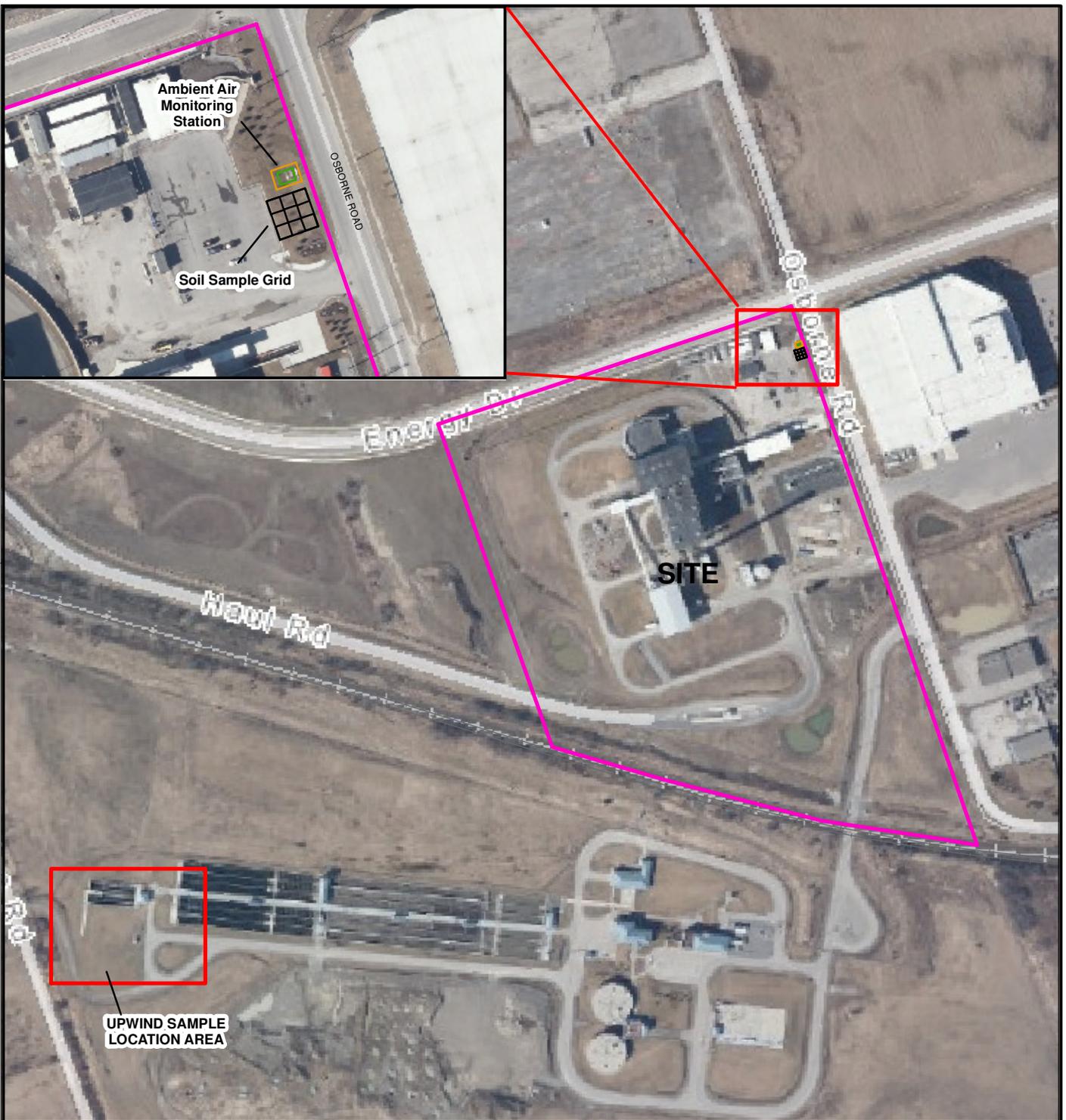
PROJECT: 111-26648-00 100-11

FILE. NO.:111-26648-00 100-11 F3



FIGURE

3



LEGEND

- DURHAM YORK ENERGY CENTRE
- SAMPLING GRID
- AMBIENT AIR MONITORING STATION
- FENCE



Data Source: Ministry of Natural Resources, Ontario Base Mapping, March 2014. Imagery, Region of Durham, 2015.



DYEC SAMPLE LOCATION MAP

2016 SOIL TESTING PROGRAM
 DURHAM YORK ENERGY CENTRE
 For Regional Municipalities of Durham and York

DATE: SEPTEMBER 2016

SCALE: 1:5000

PROJECT: 111-26648-00 100-11

FILE. NO.: 111-26648-00 100-11 F4



FIGURE

4

Site Photographs
2016 Soil Sampling Program
Durham York Energy Center, Clarington, Ontario



Photograph-1: View of WSP field staff assembling the DYEC sampling location with the DYEC facility in the background.



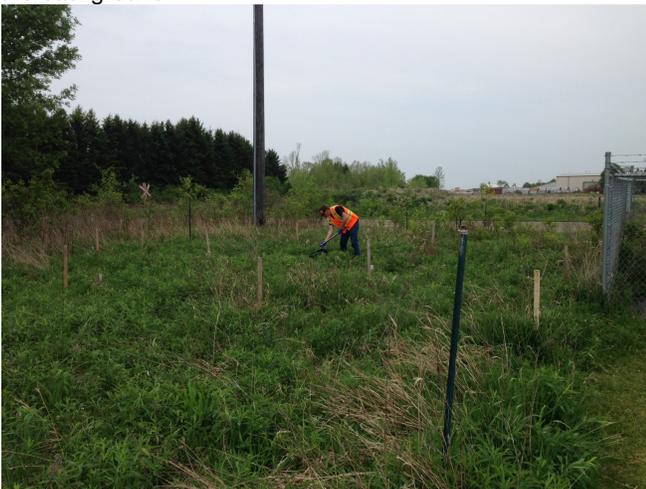
Photograph-2: View of WSP field staff cleaning the sampling probe between sample locations.



Photograph-3: View of WSP field staff collecting the sample from the upwind sampling location with the sampling grid in the background.



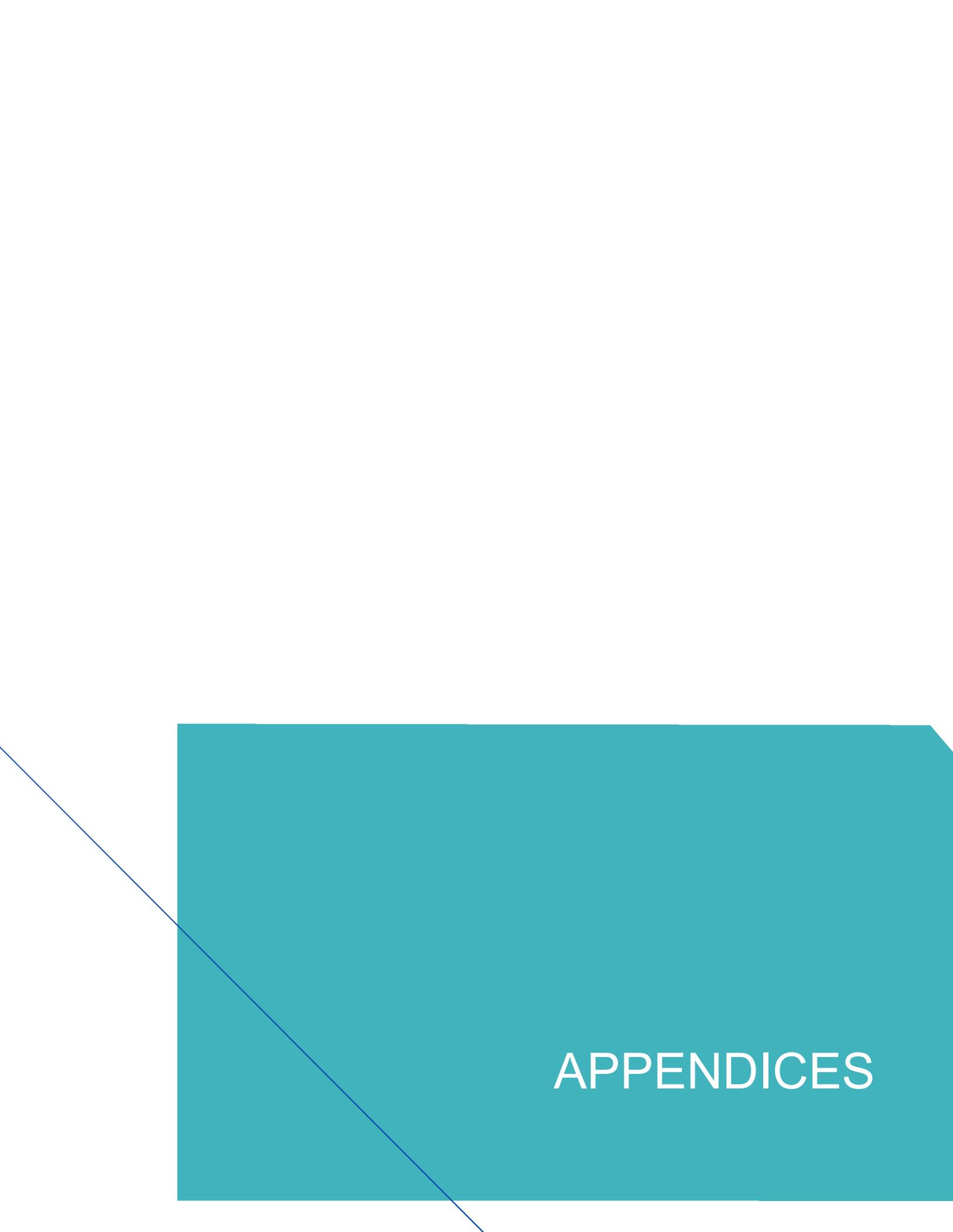
Photograph-4: View of the upwind sample location with CWPCP infrastructure in the background.



Photograph-5: View of WSP field staff collecting the composite sample from the downwind sampling location.



Photograph-6: View of WSP field staff collecting the composite sample from the downwind sampling location.

The image features a teal-colored background with a diagonal line running from the top-left towards the bottom-right. The word "APPENDICES" is written in white, uppercase letters in the bottom-right corner of the teal area.

APPENDICES

A

SOIL CHEMISTRY
RESULTS

TABLE A-1
SOIL CHEMICAL RESULTS - Metals
DURHAM YORK ENERGY CENTRE - 2016 SOIL TESTING PROGRAM

PARAMETER	SGSS TABLE 1	UNITS	UPWIND			DYEC		DOWNWIND		
			Aug-13	Aug-15	Aug-16	Aug-15	Aug-16	Aug-13	Aug-15	Aug-16
Antimony	1.3	µg/g	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	µg/g	2	2	3	2	3	3	3	3
Barium	220	µg/g	87	76	100	54	81	68	59	74
Beryllium	2.5	µg/g	0.5	0.6	0.6	0.5	0.6	<0.5	0.5	0.6
Boron	36	µg/g	6	7	9	5	7	5	7	8
Cadmium	1.2	µg/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	21	µg/g	6.8	7.1	7.7	4.5	5.6	4.8	4.9	5.6
Chromium - total	70	µg/g	18	20	23	16	20	14	15	18
Chromium - hexavalent	0.66	µg/g	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	92	µg/g	15	12	15	9	14	11	9	11
Lead	120	µg/g	10	9	10	10	13	13	12	14
Molybdenum	2	µg/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	82	µg/g	16	13	15	9	12	11	9	10
Phosphorus		µg/g	729	815	891	911	973	609	668	705
Selenium	1.5	µg/g	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	0.5	µg/g	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Thallium	1	µg/g	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tin		µg/g	<1	<1	<1	1.00	2.00	<1	<1	<1
Vanadium	86	µg/g	27	29	33	23	27	24	26	28
Zinc	290	µg/g	63	58	67	54	70	51	49	60
Mercury	0.27	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Methyl Mercury (as Hg)		ng/g	<1.3	<0.4	<0.4	0.75	<0.4	<1.3	<0.4	<0.4

NOTES: 1) SGSS Table 1 = Soil, Ground Water and Sediment Standards for Use Under Condition for Res/Park/Instit/Ind/Commercial/Community Property Uses, Part XV.1 of the Environmental Protection Act (April 2011) - Table 1: Full Depth Generic Site Condition Standards (Background).

2) Blank - Indicates a Standard does not exist in SGSS Table 1 for the parameter.

TABLE A-2
SOIL CHEMICAL RESULTS - Polycyclic Aromatic Hydrocarbons
DURHAM YORK ENERGY CENTRE - 2016 SOIL TESTING PROGRAM

PARAMETER	SGSS TABLE 1	UNITS	UPWIND			DYEC		DOWNWIND		
			Aug-13	Aug-15	Aug-16	Aug-15	Aug-16	Aug-13	Aug-15	Aug-16
1,2-Benzofluorene		µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,3-Benzofluorene		µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	0.12	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.16	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.05	<0.05

- NOTES: 1) SGSS Table 1 = Soil, Ground Water and Sediment Standards for Use Under Condition for Res/Park/Instit/Ind/Commercial/Community Property Uses, Part XV.1 of the Environmental Protection Act (April 2011) - Table 1: Full Depth Generic Site Condition Standards (Background).
- 2) PAH = Polycyclic Aromatic Hydrocarbons
- 3) Blank - Indicates a Standard does not exist in SGSS Table 1 for the parameter.
- 4) 1,2-Benzofluorene is a synonym for Benzo(a)Fluorene
- 5) 2,3-Benzofluorene is a synonym for Benzo(b)Fluorene

TABLE A-3

**SOIL CHEMICAL RESULTS - Dioxins & Furans
DURHAM YORK ENERGY CENTRE - 2016 SOIL TESTING PROGRAM**

PARAMETER	SGSS TABLE 1	UNITS	UPWIND			DYEC		DOWNWIND		
			Aug-13	Aug-15	Aug-16	Aug-15	Aug-16	Aug-13	Aug-15	Aug-16
2,3,7,8-Tetra CDD		ng/kg	<0.5	0.2	<0.1	<0.2	<0.1	<0.4	<0.1	<0.1
1,2,3,7,8-Penta CDD		ng/kg	<0.6	0.5	<0.1	0.3	<0.1	<0.6	<0.2	<0.1
1,2,3,4,7,8-Hexa CDD		ng/kg	<0.6	0.6	<0.1	0.4	1.8	<0.5	0.2	<0.1
1,2,3,6,7,8-Hexa CDD		ng/kg	<0.6	0.5	<0.1	<0.3	2.0	<0.5	0.6	<0.1
1,2,3,7,8,9-Hexa CDD		ng/kg	<0.5	0.6	<0.1	0.9	2.2	0.5	0.5	<0.1
1,2,3,4,6,7,8-Hepta CDD		ng/kg	8.2	7.9	4.8	12.0	36.3	17	11	8
Octa CDD		ng/kg	57	60	32	95	303	118	86	75
2,3,7,8-Tetra CDF		ng/kg	<0.4	0.3	<0.1	<0.2	<0.1	<0.3	0.2	<0.1
1,2,3,7,8-Penta CDF		ng/kg	<0.4	0.4	<0.1	<0.2	<0.1	<0.8	0.2	<0.1
2,3,4,7,8-Penta CDF		ng/kg	<0.4	0.5	<0.1	0.2	<0.1	<0.6	0.3	<0.1
1,2,3,4,7,8-Hexa CDF		ng/kg	<0.6	0.6	1.7	0.5	<0.1	<0.4	0.6	1.6
1,2,3,6,7,8-Hexa CDF		ng/kg	<0.6	0.3	<0.1	0.3	<0.1	<0.4	0.4	<0.1
2,3,4,6,7,8-Hexa CDF		ng/kg	<0.6	0.4	2.3	0.4	<0.1	0.7	0.3	1.4
1,2,3,7,8,9-Hexa CDF		ng/kg	<0.8	0.4	<0.1	<0.3	<0.1	<0.5	<0.2	<0.1
1,2,3,4,6,7,8-Hepta CDF		ng/kg	2.1	2.2	1.2	2.7	7.8	4.9	2.6	7.9
1,2,3,4,7,8,9-Hepta CDF		ng/kg	<1	<0.3	<0.1	0.30	<0.1	<0.6	<0.2	<0.1
Octa CDF		ng/kg	3	6	7	9	32	9	8	9
Total Tetrachlorodibenzodioxins		ng/kg	1.3	0.7	<0.1	0.3	<0.1	1.4	0.4	<0.1
Total Pentachlorodibenzodioxins		ng/kg	<0.6	2.5	<0.1	2.3	8.1	2.3	1.8	<0.1
Total Hexachlorodibenzodioxins		ng/kg	3.6	3.7	<0.2	3.3	22.5	4.3	3.2	<0.2
Total Heptachlorodibenzodioxins		ng/kg	17.7	10.2	13.4	15	57.9	31.1	12.7	28.6
Total PCDDs		ng/kg	80	76.8	44.9	116	392	158	104	103
Total Tetrachlorodibenzofurans		ng/kg	3.1	2	<0.1	3.8	10.1	4.7	2.1	1.2
Total Pentachlorodibenzofurans		ng/kg	1.3	2.3	4.3	3.3	6.2	3.3	2.5	<0.1
Total Hexachlorodibenzofurans		ng/kg	2.4	1.8	103	1.2	173	6.5	1.3	2.9
Total Heptachlorodibenzofurans		ng/kg	5	3.3	56.9	4.9	36.4	12.3	4.8	15.1
Total PCDFs		ng/kg	14	15.5	171	21.7	258	36	19.1	28.3
2,3,7,8-Tetra CDD (TEF 1.0)		TEQ	0.25	0.195	0.05	0.1	0.05	0.2	0.05	0.05
1,2,3,7,8-Penta CDD (TEF 1.0)		TEQ	0.3	0.47	0.05	0.262	0.05	0.3	0.1	0.05
1,2,3,4,7,8-Hexa CDD (TEF 0.1)		TEQ	0.03	0.0628	0.005	0.0372	0.184	0.025	0.0203	0.005
1,2,3,6,7,8-Hexa CDD (TEF 0.1)		TEQ	0.03	0.0525	0.005	0.015	0.201	0.025	0.0605	0.005
1,2,3,7,8,9-Hexa CDD (TEF 0.1)		TEQ	0.025	0.0646	0.005	0.0871	0.22	0.0544	0.0535	0.005
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)		TEQ	0.0819	0.0788	0.0475	0.12	0.363	0.17	0.109	0.0807
Octa CDD (TEF 0.0003)		TEQ	0.0172	0.0179	0.00944	0.0285	0.091	0.0355	0.0259	0.0224
2,3,7,8-Tetra CDF (TEF 0.1)		TEQ	0.02	0.0265	0.005	0.01	0.005	0.015	0.0224	0.005
1,2,3,7,8-Penta CDF (TEF 0.03)		TEQ	0.006	0.012	0.0015	0.003	0.0015	0.012	0.006	0.0015
2,3,4,7,8-Penta CDF (TEF 0.3)		TEQ	0.06	0.15	0.015	0.06	0.015	0.09	0.09	0.015
1,2,3,4,7,8-Hexa CDF (TEF 0.1)		TEQ	0.03	0.0623	0.171	0.0499	0.005	0.02	0.0576	0.159
1,2,3,6,7,8-Hexa CDF (TEF 0.1)		TEQ	0.03	0.0302	0.005	0.03	0.005	0.02	0.0369	0.005
2,3,4,6,7,8-Hexa CDF (TEF 0.1)		TEQ	0.03	0.0372	0.233	0.0427	0.005	0.072	0.0286	0.136
1,2,3,7,8,9-Hexa CDF (TEF 0.1)		TEQ	0.04	0.0377	0.005	0.015	0.005	0.025	0.01	0.005
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)		TEQ	0.021	0.0219	0.012	0.027	0.0782	0.049	0.0261	0.0785
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)		TEQ	0.005	0.0015	0.0005	0.00266	0.0005	0.003	0.001	0.0005
Octa CDF (TEF 0.0003)		TEQ	0.00081	0.0018	0.00202	0.00256	0.00961	0.00284	0.00252	0.00271
Total PCDDs and PCDFs (TEQ)	7	TEQ ng/kg	0.977	1.32	0.622	0.9	1.29	1.12	0.7	0.626

NOTES: 1) SGSS Table 1 = Soil, Ground Water and Sediment Standards for Use Under Condition for Res/Park/Instlt/Ind/Commercial/Community Property Uses,

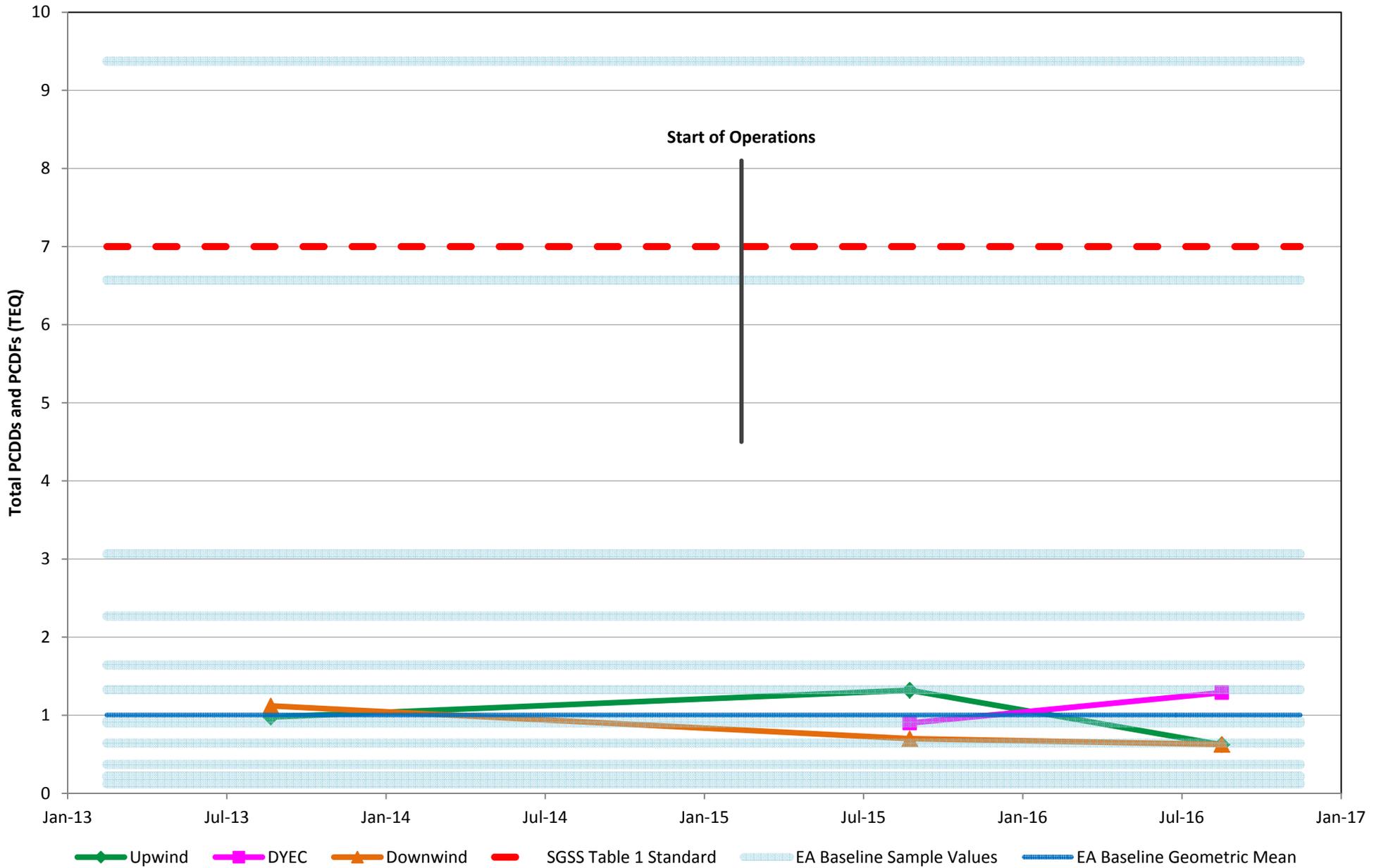
Part XV.1 of the Environmental Protection Act (April 2011) - Table 1: Full Depth Generic Site Condition Standards (Background).

2) Blank - Indicates a Standard does not exist in SGSS Table 1 for the parameter.

3) TEQ - Toxic Equivalency

4) The TEQ standard for total dioxins and furans in SGSS Table 1 is listed as 0.000007, for values in µg/g; which is equal to 7 for values in ng/kg.

FIGURE 5
TIME CONCENTRATION GRAPH - Total PCDDs and PCDFs



B

LABORATORY
CERTIFICATES OF
ANALYSIS - 2016



**CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM
605 ROSSLAND ROAD EAST, PO BOX 710
WHITBY, ON L1N0A9
(905) 668-7711**

ATTENTION TO: Lyndsay Waller

PROJECT: 111-26648-00

AGAT WORK ORDER: 16T127475

SOIL ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

TRACE ORGANICS REVIEWED BY: Inga Kuzmina, Trace Organics Lab Manager

ULTRA TRACE REVIEWED BY: Philippe Morneau, chimiste

DATE REPORTED: Oct 07, 2016

PAGES (INCLUDING COVER): 14

VERSION*: 3

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

***NOTES**

VERSION 3: Revised report sent on October 7, 2016.

Revised report sent on September 15, 2016.

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



Certificate of Analysis

AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

5835 COOPERS AVENUE
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CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

Metals Scan + Hg & CrVI (Soil)

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Parameter	Unit	SAMPLE DESCRIPTION:		DYEC	UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		8/17/2016	8/17/2016	8/17/2016
		G / S	RDL	7786056	7786064	7786068
Antimony	µg/g		0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	3	3	3
Barium	µg/g		2	81	100	74
Beryllium	µg/g		0.5	0.6	0.6	0.6
Boron	µg/g		5	7	9	8
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	20	23	18
Chromium, Hexavalent	µg/g		0.2	<0.2	<0.2	<0.2
Cobalt	µg/g		0.5	5.6	7.7	5.6
Copper	µg/g		1	14	15	11
Lead	µg/g		1	13	10	14
Mercury	µg/g		0.10	<0.10	<0.10	<0.10
Molybdenum	µg/g		0.5	<0.5	<0.5	<0.5
Nickel	µg/g		1	12	15	10
Phosphorus	µg/g		5	973	891	705
Selenium	µg/g		0.8	<0.8	<0.8	<0.8
Silver	µg/g		0.4	<0.4	<0.4	<0.4
Thallium	µg/g		0.4	<0.4	<0.4	<0.4
Tin	µg/g		1	2	<1	<1
Vanadium	µg/g		1	27	33	28
Zinc	µg/g		5	70	67	60

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7786056-7786068

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

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CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

1,2- and 2,3-Benzofluorene [soil]

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Parameter	Unit	SAMPLE DESCRIPTION:		DYEC	UPWIND	DOWNWIND
		G / S	RDL	7786056	7786064	7786068
1,2-Benzofluorene (Toronto)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
2,3-Benzofluorene (Toronto)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%	0.1	21.4	22.0	23.3	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7786056-7786068 Results are based on the dry weight of the soil.

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AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

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CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Parameter	Unit	SAMPLE DESCRIPTION:		DYEC	UPWIND	DOWNWIND
		G / S	RDL	7786056	7786064	7786068
Fluorene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%	0.1	21.4	22.0	23.3	
Surrogate	Unit	Acceptable Limits				
Chrysene-d12	%	50-140	113	101	106	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7786056-7786068 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

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AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

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<http://www.agatlabs.com>

CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Parameter	Unit	SAMPLE DESCRIPTION:		DYEC	UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		8/17/2016	8/17/2016	8/17/2016
		G / S	RDL	7786056	7786064	7786068
2,3,7,8-Tetra CDD	ng/kg		0.1	<0.1	<0.1	<0.1
1,2,3,7,8-Penta CDD	ng/kg		0.1	<0.1	<0.1	<0.1
1,2,3,4,7,8-Hexa CDD	ng/kg		0.1	1.8	<0.1	<0.1
1,2,3,6,7,8-Hexa CDD	ng/kg		0.1	2.0	<0.1	<0.1
1,2,3,7,8,9-Hexa CDD	ng/kg		0.1	2.2	<0.1	<0.1
1,2,3,4,6,7,8-Hepta CDD	ng/kg		0.2	36.3	4.8	8.1
Octa CDD	ng/kg		0.2	303	31.5	74.7
2,3,7,8-Tetra CDF	ng/kg		0.1	<0.1	<0.1	<0.1
1,2,3,7,8-Penta CDF	ng/kg		0.1	<0.1	<0.1	<0.1
2,3,4,7,8-Penta CDF	ng/kg		0.1	<0.1	<0.1	<0.1
1,2,3,4,7,8-Hexa CDF	ng/kg		0.1	<0.1	1.7	1.6
1,2,3,6,7,8-Hexa CDF	ng/kg		0.1	<0.1	<0.1	<0.1
2,3,4,6,7,8-Hexa CDF	ng/kg		0.1	<0.1	2.3	1.4
1,2,3,7,8,9-Hexa CDF	ng/kg		0.1	<0.1	<0.1	<0.1
1,2,3,4,6,7,8-Hepta CDF	ng/kg		0.2	7.8	1.2	7.9
1,2,3,4,7,8,9-Hepta CDF	ng/kg		0.1	<0.1	<0.1	<0.1
Octa CDF	ng/kg		0.2	32.0	6.7	9
Total Tetrachlorodibenzodioxins	ng/kg		0.1	<0.1	<0.1	<0.1
Total Pentachlorodibenzodioxins	ng/kg		0.1	8.1	<0.1	<0.1
Total Hexachlorodibenzodioxins	ng/kg		0.2	22.5	<0.2	<0.2
Total Heptachlorodibenzodioxins	ng/kg		0.2	57.9	13.4	28.6
Total PCDDs	ng/kg		0.2	392	44.9	103
Total Tetrachlorodibenzofurans	ng/kg		0.1	10.1	<0.1	1.2
Total Pentachlorodibenzofurans	ng/kg		0.1	6.2	4.3	<0.1
Total Hexachlorodibenzofurans	ng/kg		0.2	173	103	2.9
Total Heptachlorodibenzofurans	ng/kg		0.2	36.4	56.9	15.1
Total PCDFs	ng/kg		0.2	258	171	28.3
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ			0.05	0.05	0.05
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ			0.05	0.05	0.05
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ			0.184	0.005	0.005

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PROJECT: 111-26648-00

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CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Parameter	Unit	SAMPLE DESCRIPTION:		DYEC	UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		8/17/2016	8/17/2016	8/17/2016
		G / S	RDL	7786056	7786064	7786068
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ			0.201	0.005	0.005
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ			0.220	0.005	0.005
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ			0.363	0.0475	0.0807
Octa CDD (TEF 0.0003)	TEQ			0.0910	0.00944	0.0224
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ			0.005	0.005	0.005
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ			0.0015	0.0015	0.0015
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ			0.015	0.015	0.015
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ			0.005	0.171	0.159
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ			0.005	0.005	0.005
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ			0.005	0.233	0.136
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ			0.005	0.005	0.005
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ			0.0782	0.0120	0.0785
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ			0.0005	0.0005	0.0005
Octa CDF (TEF 0.0003)	TEQ			0.00961	0.00202	0.00271
Total PCDDs and PCDFs (TEQ)	TEQ			1.29	0.622	0.626

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

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CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2016-08-17

DATE REPORTED: 2016-10-07

Surrogate	Unit	SAMPLE DESCRIPTION: SAMPLE TYPE: DATE SAMPLED: Acceptable Limits	DYEC	UPWIND	DOWNWIND
			Soil 8/17/2016 7786056	Soil 8/17/2016 7786064	Soil 8/17/2016 7786068
13C-2378-TCDF	%	30-130	50	32	35
13C-12378-PeCDF	%	30-130	63	39	41
13C-23478-PeCDF	%	30-130	69	38	51
13C-123478-HxCDF	%	30-130	83	90	59
13C-123678-HxCDF	%	30-130	99	89	73
13C-234678-HxCDF	%	30-130	89	63	53
13C-123789-HxCDF	%	30-130	60	38	31
13C-1234678-HpCDF	%	30-130	85	67	49
13C-1234789-HpCDF	%	30-130	71	50	49
13C-2378-TCDD	%	30-130	55	43	54
13C-12378-PeCDD	%	30-130	62	49	51
13C-123478-HxCDD	%	30-130	77	76	68
13C-123678-HxCDD	%	30-130	90	99	89
13C-1234678-HpCDD	%	30-130	75	74	67
13C-OCDD	%	30-130	56	56	49

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7786056-7786068 The results were corrected based on the surrogate percent recoveries.

Certified By:

Quality Assurance

CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

Soil Analysis

RPT Date: Oct 07, 2016

DUPLICATE

REFERENCE MATERIAL

METHOD BLANK SPIKE

MATRIX SPIKE

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value			Recovery			Acceptable Limits		
							Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan + Hg & CrVI (Soil)															
Antimony	7791201		<0.8	<0.8	NA	< 0.8	116%	70%	130%	109%	80%	120%	114%	70%	130%
Arsenic	7791201		1	1	NA	< 1	118%	70%	130%	102%	80%	120%	106%	70%	130%
Barium	7791201		13	14	7.4%	< 2	103%	70%	130%	100%	80%	120%	104%	70%	130%
Beryllium	7791201		<0.5	<0.5	NA	< 0.5	109%	70%	130%	107%	80%	120%	115%	70%	130%
Boron	7791201		<5	<5	NA	< 5	85%	70%	130%	104%	80%	120%	111%	70%	130%
Cadmium	7791201		<0.5	<0.5	NA	< 0.5	104%	70%	130%	108%	80%	120%	109%	70%	130%
Chromium	7791201		5	5	NA	< 2	101%	70%	130%	101%	80%	120%	111%	70%	130%
Chromium, Hexavalent	7786056	7786056	<0.2	<0.2	NA	< 0.2	93%	90%	110%	94%	90%	110%	96%	70%	130%
Cobalt	7791201		2.1	2.2	NA	< 0.5	109%	70%	130%	102%	80%	120%	110%	70%	130%
Copper	7791201		3	3	NA	< 1	100%	70%	130%	103%	80%	120%	104%	70%	130%
Lead	7791201		4	4	NA	< 1	105%	70%	130%	102%	80%	120%	101%	70%	130%
Mercury	7791201		<0.10	<0.10	NA	< 0.10	123%	70%	130%	101%	80%	120%	100%	70%	130%
Molybdenum	7791201		<0.5	<0.5	NA	< 0.5	107%	70%	130%	104%	80%	120%	112%	70%	130%
Nickel	7791201		3	3	NA	< 1	112%	70%	130%	107%	80%	120%	110%	70%	130%
Phosphorus	7791201		473	477	0.8%	< 5	108%	80%	120%	104%	80%	120%	109%	70%	130%
Selenium	7791201		<0.8	<0.8	NA	< 0.8	116%	70%	130%	108%	80%	120%	111%	70%	130%
Silver	7791201		<0.4	<0.4	NA	< 0.4	104%	70%	130%	104%	80%	120%	108%	70%	130%
Thallium	7791201		<0.4	<0.4	NA	< 0.4	111%	70%	130%	104%	80%	120%	107%	70%	130%
Tin	7791201		< 1	< 1	NA	< 1	116%	70%	130%	112%	80%	120%	108%	70%	130%
Vanadium	7791201		8	8	0.0%	< 1	102%	70%	130%	100%	80%	120%	109%	70%	130%
Zinc	7791201		10	11	NA	< 5	100%	70%	130%	104%	80%	120%	108%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



Quality Assurance

CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM

AGAT WORK ORDER: 16T127475

PROJECT: 111-26648-00

ATTENTION TO: Lyndsay Waller

SAMPLING SITE:

SAMPLED BY: Trevor Swift

Trace Organics Analysis

RPT Date: Oct 07, 2016

DUPLICATE

REFERENCE MATERIAL

METHOD BLANK SPIKE

MATRIX SPIKE

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value			Recovery	Acceptable Limits		Recovery	Acceptable Limits	
							Measured Value	Acceptable Limits			Recovery	Acceptable Limits			
								Lower	Upper			Lower		Upper	

1,2- and 2,3-Benzofluorene [soil]

1,2-Benzofluorene (Toronto)	7821961		< 0.05	< 0.05	NA	< 0.05	NA	60%	130%	86%	60%	130%	NA	60%	130%
2,3-Benzofluorene (Toronto)	7821961		< 0.05	< 0.05	NA	< 0.05	NA	60%	130%	92%	60%	130%	NA	60%	130%

O. Reg. 153(511) - PAHs (Soil)

Fluorene	7821961		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	93%	50%	140%	83%	50%	140%
Anthracene	7821961		0.07	0.07	NA	< 0.05	106%	50%	140%	63%	50%	140%	71%	50%	140%
Benzo(a)pyrene	7821961		0.12	0.11	NA	< 0.05	116%	50%	140%	95%	50%	140%	92%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



Quality Assurance

CLIENT NAME: THE REGIONAL MUNICIPALITY OF DURHAM
AGAT WORK ORDER: 16T127475
PROJECT: 111-26648-00
ATTENTION TO: Lyndsay Waller
SAMPLING SITE:
SAMPLED BY: Trevor Swift

Ultra Trace Analysis

RPT Date: Oct 07, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
O. Reg 153 Dioxins & Furans (Soil, WHO 2005)																
2,3,7,8-Tetra CDD	1	7780892	0.5	0.5	0.0%	< 0.1	81%	40%	130%	NA	40%	130%	82%	40%	130%	
1,2,3,7,8-Penta CDD	1	7780892	1.1	1.1	0.0%	< 0.1	95%	40%	130%	NA	40%	130%	99%	40%	130%	
1,2,3,4,7,8-Hexa CDD	1	7780892	1.2	1.2	0.0%	< 0.1	119%	40%	130%	NA	40%	130%	106%	40%	130%	
1,2,3,6,7,8-Hexa CDD	1	7780892	1.4	1.4	0.0%	< 0.1	101%	40%	130%	NA	40%	130%	99%	40%	130%	
1,2,3,7,8,9-Hexa CDD	1	7780892	1.9	1.9	0.0%	< 0.1	114%	40%	130%	NA	40%	130%	108%	40%	130%	
1,2,3,4,6,7,8-Hepta CDD	1	7780892	2.4	2.4	0.0%	< 0.2	117%	40%	130%	NA	40%	130%	118%	40%	130%	
Octa CDD	1	7780892	3.1	3.1	0.0%	< 0.2	114%	40%	130%	NA	40%	130%	101%	40%	130%	
2,3,7,8-Tetra CDF	1	7780892	0.7	0.7	0.0%	< 0.1	98%	40%	130%	NA	40%	130%	105%	40%	130%	
1,2,3,7,8-Penta CDF	1	7780892	1.1	1.2	8.7%	< 0.1	112%	40%	130%	NA	40%	130%	107%	40%	130%	
2,3,4,7,8-Penta CDF	1	7780892	1.2	1.3	8.0%	< 0.1	117%	40%	130%	NA	40%	130%	109%	40%	130%	
1,2,3,4,7,8-Hexa CDF	1	7780892	1.4	1.4	0.0%	< 0.1	114%	40%	130%	NA	40%	130%	111%	40%	130%	
1,2,3,6,7,8-Hexa CDF	1	7780892	1.1	1.1	0.0%	< 0.1	116%	40%	130%	NA	40%	130%	112%	40%	130%	
2,3,4,6,7,8-Hexa CDF	1	7780892	2.1	2.3	9.1%	< 0.1	117%	40%	130%	NA	40%	130%	113%	40%	130%	
1,2,3,7,8,9-Hexa CDF	1	7780892	< 0.4	< 0.4	NA	< 0.1	126%	40%	130%	NA	40%	130%	97%	40%	130%	
1,2,3,4,6,7,8-Hepta CDF	1	7780892	0.6	0.6	0.0%	< 0.2	129%	40%	130%	NA	40%	130%	111%	40%	130%	
1,2,3,4,7,8,9-Hepta CDF	1	7780892	< 0.5	< 0.5	NA	< 0.1	125%	40%	130%	NA	40%	130%	129%	40%	130%	
Octa CDF	1	7780892	2.2	2.2	0.0%	< 0.2	111%	40%	130%	NA	40%	130%	102%	40%	130%	

Certified By:



C

REVISED
LABORATORY
CERTIFICATES
OF ANALYSIS
– 2013 & 2015

TABLE C-1
HISTORICAL SOIL CHEMICAL COMPARISON - Dioxins & Furans
DURHAM YORK ENERGY CENTRE - 2016 SOIL TESTING PROGRAM

PARAMETER	SGSS TABLE 1	UNITS	UPWIND				DYEC		DOWNWIND	
			Aug-13		Aug-15		Aug-15		Aug-15	
			REVISED	ORIGINAL	REVISED	ORIGINAL	REVISED	ORIGINAL	REVISED	ORIGINAL
1,2,3,4,6,7,8-Hepta CDD		ng/kg						11	10.9	
Octa CDD		ng/kg			60	59.7	95	95.1	86	86.3
Octa CDF		ng/kg			6	6.1	9	8.5	8	8.4
2,3,7,8-Tetra CDD (TEF 1.0)		TEQ					0.1	0.116	0.05	0.0456
1,2,3,7,8-Penta CDD (TEF 1.0)		TEQ							0.1	0.0767
1,2,3,6,7,8-Hexa CDD (TEF 0.1)		TEQ					0.015	0.0129		
2,3,7,8-Tetra CDF (TEF 0.1)		TEQ					0.01	0.0106		
1,2,3,7,8-Penta CDF (TEF 0.03)		TEQ			0.012	0.0405	0.003	0.0118	0.006	0.017
2,3,4,7,8-Penta CDF (TEF 0.3)		TEQ			0.15	0.0135	0.06	0.00697	0.09	0.0097
1,2,3,7,8,9-Hexa CDF (TEF 0.1)		TEQ					0.015	0.0154	0.01	0.0122
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)		TEQ	0.021	0.0508						
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)		TEQ			0.0015	0.00156			0.001	0.00116
Octa CDF (TEF 0.0003)		TEQ			0.0018	0.00184				
Total PCDDs and PCDFs (TEQ)	7	TEQ ng/kg			1.32	1.21	0.9	0.864	0.7	0.606

- NOTES: 1) SGSS Table 1 = Soil, Ground Water and Sediment Standards for Use Under Condition for Res/Park/Instit/Ind/Commercial/Community Property Uses, Part XV.1 of the Environmental Protection Act (April 2011) - Table 1: Full Depth Generic Site Condition Standards (Background).
2) Blank - Indicates a Standard does not exist in SGSS Table 1 for the parameter.
3) TEQ - Toxic Equivalency
4) The TEQ standard for total dioxins and furans in SGSS Table 1 is listed as 0.000007, for values in µg/g; which is equal to 7 for values in ng/kg.



ACTION REPORT

Date of Report: 2016/10/04

Report Number: CAF2016-413

Client Name: Region of Durham

Reported By: Sandra Consulta, Senior Client Project Manager

Reported On: 2016/09/19

Investigated By: Phil Morneau

Work Orders #: 13T750521, 15T012038

Nonconformance: TEQ values for Dioxins/Furans results for Region of Durham projects 13T750521 and 15T012038 were miscalculated .

1.0 Nonconformance Description:

Upon review of the historical soil sampling events for Region of Durham work orders 13T750521 and 15T012038 it was requested that the TEQ values for some parameters be verified for soil samples submitted in 2013 and 2015.

2.0 Investigation Summary:

The verification of the raw data and the reported values for the work orders 13T750521 and 15T012038 revealed that certain results for TEQ had been miscalculated in the reports. There were errors in the values manually entered into the TEQ calculation template.

The results were recalculated and resubmitted to the customer.

3.0 Root Cause(s) of Nonconformance(s):

A deficiency was identified in the use of the TEQ template. The template does not perform calculations on values less than the detection limits. These values are manually entered as half the detection limit as per the regulation. There were errors made in the manual calculation and transcription of these values.

4.0 Corrective Actions:

AGAT has revised the results from the affected work orders from 2013 and 2015.

The calculation template used to calculate the TEQ values will be reworked and validated to automatically calculate the TEQ values based on $\frac{1}{2}$ the detection limits when results below the detection limit are reported. This will address the issue of manual calculation and transcription errors.

5.0 Authorizing Signatures:

This report has been read and agreed upon by the following persons.

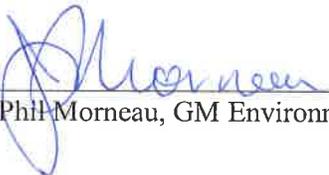
Signatures:

QA Division:


Peter Corbiere; Quality Assurance Manager

Date: 2016/10/04

General Manager:


Phil Morneau, GM Environmental

Date: 2016/10/04



CLIENT NAME: GENIVAR INC
126 DON HILLOCK DRIVE
AURORA, ON L4G0G9
(905) 750-3080

ATTENTION TO: Steve Taziar

PROJECT: 111-26648-00

AGAT WORK ORDER: 13T750521

SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

TRACE ORGANICS REVIEWED BY: Inga Kuzmina, Trace Organics Lab Manager

ULTRA TRACE REVIEWED BY: Philippe Morneau, chimiste

DATE REPORTED: Sep 23, 2016

PAGES (INCLUDING COVER): 15

VERSION*: 2

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

*NOTES

VERSION 2: Revised report sent on September 23, 2016.

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



Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

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

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

Metals Scan + Hg + CrVI (soil)

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		8/22/2013	8/22/2013
		G / S	RDL	4684346	4684347
Antimony	µg/g		0.8	<0.8	<0.8
Arsenic	µg/g		1	2	3
Barium	µg/g		2	87	68
Beryllium	µg/g		0.5	0.5	<0.5
Boron	µg/g		5	6	5
Cadmium	µg/g		0.5	<0.5	<0.5
Cobalt	µg/g		0.5	6.8	4.8
Chromium	µg/g		2	18	14
Copper	µg/g		1	15	11
Lead	µg/g		1	10	13
Molybdenum	µg/g		0.5	<0.5	<0.5
Nickel	µg/g		1	16	11
Phosphorus	µg/g		5	729	609
Selenium	µg/g		0.8	<0.8	<0.8
Silver	µg/g		0.4	<0.4	<0.4
Thallium	µg/g		0.4	<0.4	<0.4
Tin	µg/g		1	<1	<1
Vanadium	µg/g		1	27	24
Zinc	µg/g		5	63	51
Mercury	µg/g		0.10	<0.10	<0.10
Chromium, Hexavalent	µg/g		0.2	<0.2	<0.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 4684346-4684347

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

Methyl Mercury in Soil

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

		SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		8/22/2013	8/22/2013
Parameter	Unit	G / S	RDL	4684346	4684347
Methyl Mercury as Hg	ng/g	1.3	<1.3	<1.3	<1.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
4684346 Methyl Mercury analysis was subcontracted to Flett Research Ltd.

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

1,2- and 2,3-Benzofluorene [soil]

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		G / S	RDL	4684346	4684347
1,2-Benzofluorene (Toronto)	µg/g	0.05	<0.05	<0.05	<0.05
2,3-Benzofluorene (Toronto)	µg/g	0.05	<0.05	<0.05	<0.05
Moisture Content	%	0.1	10.1	14.8	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4684346-4684347 Results are based on the dry weight of the soil.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

5835 COOPERS AVENUE
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 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

PAHs (Soil)					
DATE RECEIVED: 2013-08-22			DATE REPORTED: 2016-09-23		
		SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		8/22/2013	8/22/2013
Parameter	Unit	G / S	RDL	4684346	4684347
Fluorene	µg/g		0.05	<0.05	<0.05
Anthracene	µg/g		0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g		0.05	<0.05	0.11
Moisture Content	%		0.1	10.1	14.8
Surrogate	Unit	Acceptable Limits			
Chrysene-d12	%	50-140		76	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4684346-4684347 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		UPWIND		DOWNWIND	
		G / S	RDL	RDL	RDL	RDL	RDL
				4684346		4684347	
2,3,7,8-Tetra CDD	ng/Kg	0.5	<0.5		0.4	<0.4	
1,2,3,7,8-Penta CDD	ng/Kg	0.6	<0.6		0.6	<0.6	
1,2,3,4,7,8-Hexa CDD	ng/Kg	0.6	<0.6		0.5	<0.5	
1,2,3,6,7,8-Hexa CDD	ng/Kg	0.6	<0.6		0.5	<0.5	
1,2,3,7,8,9-Hexa CDD	ng/Kg	0.5	<0.5		0.5	0.5	
1,2,3,4,6,7,8-Hepta CDD	ng/Kg	0.9	8.2		0.9	17.0	
Octa CDD	ng/Kg	1	57		1	118	
2,3,7,8-Tetra CDF	ng/Kg	0.4	<0.4		0.3	<0.3	
1,2,3,7,8-Penta CDF	ng/Kg	0.4	<0.4		0.8	<0.8	
2,3,4,7,8-Penta CDF	ng/Kg	0.4	<0.4		0.6	<0.6	
1,2,3,4,7,8-Hexa CDF	ng/Kg	0.6	<0.6		0.4	<0.4	
1,2,3,6,7,8-Hexa CDF	ng/Kg	0.6	<0.6		0.4	<0.4	
2,3,4,6,7,8-Hexa CDF	ng/Kg	0.6	<0.6		0.4	0.7	
1,2,3,7,8,9-Hexa CDF	ng/Kg	0.8	<0.8		0.5	<0.5	
1,2,3,4,6,7,8-Hepta CDF	ng/Kg	0.6	2.1		0.4	4.9	
1,2,3,4,7,8,9-Hepta CDF	ng/Kg	1	<1		0.6	<0.6	
Octa CDF	ng/Kg	1	3		1	9	
Total Tetrachlorodibenzodioxins	ng/Kg	0.5	1.3		0.4	1.4	
Total Pentachlorodibenzodioxins	ng/Kg	0.6	<0.6		0.6	2.3	
Total Hexachlorodibenzodioxins	ng/Kg	0.6	3.6		0.5	4.3	
Total Heptachlorodibenzodioxins	ng/Kg	0.9	17.7		0.9	31.1	
Total PCDDs	ng/Kg	1	80		1	158	
Total Tetrachlorodibenzofurans	ng/Kg	0.4	3.1		0.3	4.7	
Total Pentachlorodibenzofurans	ng/Kg	0.4	1.3		0.8	3.3	
Total Hexachlorodibenzofurans	ng/Kg	0.8	2.4		0.5	6.5	
Total Heptachlorodibenzofurans	ng/Kg	1	5		0.6	12.3	
Total PCDFs	ng/Kg	1	14		1	36	
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ		0.25			0.2	
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ		0.3			0.3	
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ		0.03			0.025	

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

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CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		G / S	RDL	RDL	RDL
				4684346	4684347
				8/22/2013	8/22/2013
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ			0.03	0.025
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ			0.025	0.0544
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ			0.0819	0.17
Octa CDD (TEF 0.0003)	TEQ			0.0172	0.0355
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ			0.02	0.015
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ			0.006	0.012
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ			0.06	0.09
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ			0.03	0.02
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ			0.03	0.02
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ			0.03	0.072
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ			0.04	0.025
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ			0.021	0.049
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ			0.005	0.003
Octa CDF (TEF 0.0003)	TEQ			0.00081	0.00284
Total PCDDs and PCDFs (TEQ)	TEQ ng/Kg	7.0		0.977	1.12

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T750521

PROJECT: 111-26648-00

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

CLIENT NAME: GENIVAR INC

ATTENTION TO: Steve Taziar

SAMPLING SITE:

SAMPLED BY:

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)

DATE RECEIVED: 2013-08-22

DATE REPORTED: 2016-09-23

Surrogate	Unit	SAMPLE DESCRIPTION:		UPWIND	DOWNWIND
		SAMPLE TYPE:	DATE SAMPLED:	Soil	Soil
Acceptable Limits		4684346	4684347		
13C-2378-TCDF	%	40-130	71	76	
13C-12378-PeCDF	%	40-130	79	79	
13C-23478-PeCDF	%	40-130	83	66	
13C-123478-HxCDF	%	40-130	87	94	
13C-123678-HxCDF	%	40-130	74	68	
13C-234678-HxCDF	%	40-130	81	75	
13C-123789-HxCDF	%	40-130	81	78	
13C-1234678-HpCDF	%	40-130	82	75	
13C-1234789-HpCDF	%	40-130	88	83	
13C-2378-TCDD	%	40-130	81	88	
13C-12378-PeCDD	%	40-130	99	86	
13C-123478-HxCDD	%	40-130	102	108	
13C-123678-HxCDD	%	40-130	88	81	
13C-1234678-HpCDD	%	40-130	102	99	
13C-OCDD	%	40-130	94	82	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1 (D&F)

4684346-4684347 The results have been corrected based on the surrogate percent recoveries.

Certified By:

Quality Assurance

 CLIENT NAME: GENIVAR INC
 PROJECT: 111-26648-00
 SAMPLING SITE:

 AGAT WORK ORDER: 13T750521
 ATTENTION TO: Steve Taziar
 SAMPLED BY:

Soil Analysis															
RPT Date: Sep 23, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Metals Scan + Hg + CrVI (soil)

Antimony	1		< 0.8	< 0.8	0.0%	< 0.8	105%	70%	130%	99%	80%	120%	96%	70%	130%
Arsenic	1		2	4	NA	< 1	103%	70%	130%	96%	80%	120%	96%	70%	130%
Barium	1		56	56	0.0%	< 2	94%	70%	130%	100%	80%	120%	96%	70%	130%
Beryllium	1		< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	96%	80%	120%	97%	70%	130%
Boron	1		< 5	< 5	0.0%	< 5	72%	70%	130%	97%	80%	120%	95%	70%	130%
Cadmium	1		< 0.5	< 0.5	0.0%	< 0.5	98%	70%	130%	112%	80%	120%	96%	70%	130%
Cobalt	1		6.8	7.1	4.3%	< 0.5	87%	70%	130%	91%	80%	120%	91%	70%	130%
Chromium	1		23	23	0.0%	< 2	86%	70%	130%	86%	80%	120%	86%	70%	130%
Copper	1		35	39	10.8%	< 1	84%	70%	130%	89%	80%	120%	88%	70%	130%
Lead	1		2	3	NA	< 1	91%	70%	130%	89%	80%	120%	89%	70%	130%
Molybdenum	1		0.5	0.6	18.2%	< 0.5	98%	70%	130%	97%	80%	120%	97%	70%	130%
Nickel	1		20	21	4.9%	< 1	96%	70%	130%	98%	80%	120%	97%	70%	130%
Phosphorus	1		420	454	7.8%	< 5	87%	80%	120%	100%	80%	120%	97%	70%	130%
Selenium	1		< 0.8	< 0.8	0.0%	< 0.8	80%	70%	130%	95%	80%	120%	100%	70%	130%
Silver	1		< 0.4	< 0.4	0.0%	< 0.4	78%	70%	130%	99%	80%	120%	102%	70%	130%
Thallium	1		< 0.4	< 0.4	0.0%	< 0.4	99%	70%	130%	100%	80%	120%	96%	70%	130%
Tin	1		< 1	< 1	0.0%	< 1	115%	70%	130%	101%	80%	120%	99%	70%	130%
Vanadium	1		25	25	0.0%	< 1	88%	70%	130%	91%	80%	120%	90%	70%	130%
Zinc	1		25	26	3.9%	< 5	92%	70%	130%	100%	80%	120%	102%	70%	130%
Mercury	1		< 0.10	< 0.10	0.0%	< 0.10	101%	70%	130%	95%	80%	120%	93%	70%	130%
Chromium, Hexavalent	1	4684346	< 0.2	< 0.2	0.0%	< 0.2	94%	90%	110%	93%	90%	110%	103%	70%	130%

 Comments: As the average value (Pb & As) for the sample and a duplicate is less than 5X RDL, lab's RPD acceptance criteria is not applicable.
 NA signifies not applicable

Methyl Mercury in Soil

Methyl Mercury as Hg	1	4684347	< 1.3	< 1.3	0.0%	< 1.3	86%	80%	120%	NA			97%	80%	120%
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Comments: NA signifies not applicable

Certified By: _____





Quality Assurance

CLIENT NAME: GENIVAR INC
 PROJECT: 111-26648-00
 SAMPLING SITE:

AGAT WORK ORDER: 13T750521
 ATTENTION TO: Steve Taziar
 SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 23, 2016		DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
PAHs (Soil)															
Fluorene	1		< 0.02	< 0.02	0.0%	< 0.05	107%	50%	140%	82%	50%	140%	80%	50%	140%
Anthracene	1		< 0.02	< 0.02	0.0%	< 0.05	106%	50%	140%	82%	50%	140%	91%	50%	140%
Benzo(a)pyrene	1		< 0.02	< 0.02	0.0%	< 0.05	104%	50%	140%	78%	50%	140%	95%	50%	140%
1,2- and 2,3-Benzofluorene [soil]															
1,2-Benzofluorene (Toronto)	1		< 0.04	< 0.04	0.0%	< 0.04	101%	60%	130%	107%	60%	130%	70%	60%	130%
2,3-Benzofluorene (Toronto)	1		< 0.03	< 0.03	0.0%	< 0.03	101%	60%	130%	110%	60%	130%	70%	60%	130%

Certified By: _____

Quality Assurance

 CLIENT NAME: GENIVAR INC
 PROJECT: 111-26648-00
 SAMPLING SITE:

 AGAT WORK ORDER: 13T750521
 ATTENTION TO: Steve Taziar
 SAMPLED BY:

Ultra Trace Analysis

RPT Date: Sep 23, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
O. Reg 153 Dioxins & Furans (Soil, WHO 2005)																
2,3,7,8-Tetra CDD	1	4632043	2.0	1.8	10.5%	< 0.4	93%	70%	130%	NA	70%	130%	93%	70%	130%	
1,2,3,7,8-Penta CDD	1	4632043	8.2	7	15.8%	< 0.6	93%	70%	130%	NA	70%	130%	91%	70%	130%	
1,2,3,4,7,8-Hexa CDD	1	4632043	14	12	15.4%	< 0.5	99%	70%	130%	NA	70%	130%	100%	70%	130%	
1,2,3,6,7,8-Hexa CDD	1	4632043	36	31	14.9%	< 0.5	96%	70%	130%	NA	70%	130%	93%	70%	130%	
1,2,3,7,8,9-Hexa CDD	1	4632043	32	28	13.3%	< 0.5	98%	70%	130%	NA	70%	130%	89%	70%	130%	
1,2,3,4,6,7,8-Hepta CDD	1	4632043	1190	1130	5.2%	< 0.9	102%	70%	130%	NA	70%	130%	112%	70%	130%	
Octa CDD	1	4632043	7020	6610	6.0%	< 1	100%	70%	130%	NA	70%	130%	NA	70%	130%	
2,3,7,8-Tetra CDF	1	4632043	< 0.4	< 0.4	0.0%	< 0.3	104%	70%	130%	NA	70%	130%	102%	70%	130%	
1,2,3,7,8-Penta CDF	1	4632043	< 0.7	< 0.5	NA	< 0.2	97%	70%	130%	NA	70%	130%	96%	70%	130%	
2,3,4,7,8-Penta CDF	1	4632043	< 0.6	< 0.5	NA	< 0.2	100%	70%	130%	NA	70%	130%	99%	70%	130%	
1,2,3,4,7,8-Hexa CDF	1	4632043	2.9	2.8	3.5%	< 0.3	100%	70%	130%	NA	70%	130%	100%	70%	130%	
1,2,3,6,7,8-Hexa CDF	1	4632043	1.7	1.6	6.1%	< 0.2	104%	70%	130%	NA	70%	130%	101%	70%	130%	
2,3,4,6,7,8-Hexa CDF	1	4632043	2.7	2.4	11.8%	< 0.3	107%	70%	130%	NA	70%	130%	104%	70%	130%	
1,2,3,7,8,9-Hexa CDF	1	4632043	< 1	< 1	0.0%	< 0.4	102%	70%	130%	NA	70%	130%	99%	70%	130%	
1,2,3,4,6,7,8-Hepta CDF	1	4632043	61	68	10.9%	< 0.6	102%	70%	130%	NA	70%	130%	102%	70%	130%	
1,2,3,4,7,8,9-Hepta CDF	1	4632043	4	5	22.2%	< 0.6	100%	70%	130%	NA	70%	130%	102%	70%	130%	
Octa CDF	1	4632043	232	235	1.3%	< 1	91%	70%	130%	NA	70%	130%	84%	70%	130%	

Certified By:





CLIENT NAME: WSP CANADA INC.
605 ROSSLAND ROAD EAST, PO BOX 710
WHITBY, ON L1N0A9
(905) 668-7711

ATTENTION TO: Steve Taziar

PROJECT: 111-26648-00, 100A, 0414013

AGAT WORK ORDER: 15T012038

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Inga Kuzmina, Trace Organics Lab Manager

ULTRA TRACE REVIEWED BY: Philippe Morneau, chimiste

DATE REPORTED: Sep 28, 2016

PAGES (INCLUDING COVER): 23

VERSION*: 2

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

*NOTES

VERSION 2: Revised report sent on September 28, 2016.

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



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Metals Scan + Hg & CrVI (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911073		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DYEC							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Antimony	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Arsenic	µg/g	2		1	Sep 01, 2015	PI	Sep 01, 2015
Barium	µg/g	54		2	Sep 01, 2015	PI	Sep 01, 2015
Beryllium	µg/g	0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Boron	µg/g	5		5	Sep 01, 2015	PI	Sep 01, 2015
Cadmium	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Chromium	µg/g	16		2	Sep 01, 2015	PI	Sep 01, 2015
Chromium, Hexavalent	µg/g	<0.2		0.2	Sep 01, 2015	BG	Sep 01, 2015
Cobalt	µg/g	4.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Copper	µg/g	9		1	Sep 01, 2015	PI	Sep 01, 2015
Lead	µg/g	10		1	Sep 01, 2015	PI	Sep 01, 2015
Mercury	µg/g	<0.10		0.10	Sep 01, 2015	PI	Sep 01, 2015
Molybdenum	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Nickel	µg/g	9		1	Sep 01, 2015	PI	Sep 01, 2015
Phosphorus	µg/g	911		5	Sep 01, 2015	PI	Sep 01, 2015
Selenium	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Silver	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Thallium	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Tin	µg/g	1		1	Sep 01, 2015	PI	Sep 01, 2015
Vanadium	µg/g	23		1	Sep 01, 2015	PI	Sep 01, 2015
Zinc	µg/g	54		5	Sep 01, 2015	PI	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: _____

Amanjot Bhela



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

1,2- and 2,3-Benzofluorene [soil]

SAMPLE TYPE: Soil	SAMPLE ID: 6911073	DATE RECEIVED: Aug 26, 2015
DATE SAMPLED: Aug 25, 2015		DATE REPORTED: Sep 28, 2016
SAMPLE DESCRIPTION: DYEC		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
1,2-Benzofluorene (Toronto)	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
2,3-Benzofluorene (Toronto)	µg/g	<0.05		0.05			
Moisture Content	%	5.23		0.1			

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.

Certified By: _____



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

O. Reg. 153(511) - PAHs (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911073		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DYEC							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Fluorene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Anthracene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Benzo(a)pyrene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Moisture Content	%	8.2		0.1	Sep 01, 2015	YJ	Sep 01, 2015
SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS		DATE ANALYZED	INITIAL	DATE PREPARED
Chrysene-d12	%	89	50-140		Sep 01, 2015	YJ	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By: _____



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911073		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DYEC							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
2,3,7,8-Tetra CDD	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD	ng/kg	0.4		0.3	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD	ng/kg	<0.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD	ng/kg	0.9		0.3	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD	ng/kg	12.0		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDD	ng/kg	95		0.8	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF	ng/kg	0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF	ng/kg	0.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF	ng/kg	0.4		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF	ng/kg	<0.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF	ng/kg	2.7		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF	ng/kg	0.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF	ng/kg	9		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzodioxins	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzodioxins	ng/kg	2.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzodioxins	ng/kg	3.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzodioxins	ng/kg	15		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs	ng/kg	116		0.8	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzofurans	ng/kg	3.8		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzofurans	ng/kg	3.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzofurans	ng/kg	1.2		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzofurans	ng/kg	4.9		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDFs	ng/kg	21.7		0.3	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	0.1			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	0.262			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	0.0372			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	0.015			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	0.0871			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	0.12			Sep 08, 2015	DOR	Sep 02, 2015

Certified By: _____





Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911073		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DYEC							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Octa CDD (TEF 0.0003)	TEQ	0.0285			Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	0.01			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	0.003			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	0.06			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0499			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.03			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0427			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	0.015			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	0.027			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	0.00266			Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF (TEF 0.0003)	TEQ	0.00256			Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs and PCDFs (TEQ)	TEQ	0.90			Sep 08, 2015	DOR	Sep 02, 2015
SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS		DATE ANALYZED	INITIAL	DATE PREPARED
13C-2378-TCDF	%	70	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDF	%	68	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-23478-PeCDF	%	80	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDF	%	57	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDF	%	62	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-234678-HxCDF	%	66	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123789-HxCDF	%	69	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDF	%	47	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234789-HpCDF	%	58	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-2378-TCDD	%	70	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDD	%	86	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDD	%	66	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDD	%	74	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDD	%	61	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-OCDD	%	42	40-130		Sep 08, 2015	DOR	Sep 02, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
 The results were corrected based on the surrogate percent recoveries.
 Total TEQ and Guideline expressed in ng/Kg TEQ.

Certified By: _____





Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Metals Scan + Hg & CrVI (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911099		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: UP WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Antimony	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Arsenic	µg/g	2		1	Sep 01, 2015	PI	Sep 01, 2015
Barium	µg/g	76		2	Sep 01, 2015	PI	Sep 01, 2015
Beryllium	µg/g	0.6		0.5	Sep 01, 2015	PI	Sep 01, 2015
Boron	µg/g	7		5	Sep 01, 2015	PI	Sep 01, 2015
Cadmium	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Chromium	µg/g	20		2	Sep 01, 2015	PI	Sep 01, 2015
Chromium, Hexavalent	µg/g	<0.2		0.2	Sep 01, 2015	BG	Sep 01, 2015
Cobalt	µg/g	7.1		0.5	Sep 01, 2015	PI	Sep 01, 2015
Copper	µg/g	12		1	Sep 01, 2015	PI	Sep 01, 2015
Lead	µg/g	9		1	Sep 01, 2015	PI	Sep 01, 2015
Mercury	µg/g	<0.10		0.10	Sep 01, 2015	PI	Sep 01, 2015
Molybdenum	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Nickel	µg/g	13		1	Sep 01, 2015	PI	Sep 01, 2015
Phosphorus	µg/g	815		5	Sep 01, 2015	PI	Sep 01, 2015
Selenium	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Silver	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Thallium	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Tin	µg/g	<1		1	Sep 01, 2015	PI	Sep 01, 2015
Vanadium	µg/g	29		1	Sep 01, 2015	PI	Sep 01, 2015
Zinc	µg/g	58		5	Sep 01, 2015	PI	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard

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Amanjot Bhela



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

1,2- and 2,3-Benzofluorene [soil]								
SAMPLE TYPE: Soil			SAMPLE ID: 6911099			DATE RECEIVED: Aug 26, 2015		
DATE SAMPLED: Aug 25, 2015						DATE REPORTED: Sep 28, 2016		
SAMPLE DESCRIPTION: UP WIND								
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED	
1,2-Benzofluorene (Toronto)	µg/g	<0.05		0.05				
2,3-Benzofluorene (Toronto)	µg/g	<0.05		0.05				
Moisture Content	%	5.45		0.1				

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.

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Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

O. Reg. 153(511) - PAHs (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911099		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: UP WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Fluorene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Anthracene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Benzo(a)pyrene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Moisture Content	%	13.5		0.1	Sep 01, 2015	YJ	Sep 01, 2015
SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS		DATE ANALYZED	INITIAL	DATE PREPARED
Chrysene-d12	%	80	50-140		Sep 01, 2015	YJ	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

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Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911099		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015		DATE REPORTED: Sep 28, 2016					
SAMPLE DESCRIPTION: UP WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
2,3,7,8-Tetra CDD	ng/kg	0.2		0.1	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD	ng/kg	0.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD	ng/kg	0.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD	ng/kg	0.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD	ng/kg	0.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD	ng/kg	7.9		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDD	ng/kg	60		0.5	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF	ng/kg	0.4		0.2	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF	ng/kg	0.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF	ng/kg	0.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF	ng/kg	0.4		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF	ng/kg	0.4		0.3	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF	ng/kg	2.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF	ng/kg	<0.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF	ng/kg	6		0.6	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzodioxins	ng/kg	0.7		0.1	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzodioxins	ng/kg	2.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzodioxins	ng/kg	3.7		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzodioxins	ng/kg	10.2		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs	ng/kg	76.8		0.5	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzofurans	ng/kg	2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzofurans	ng/kg	2.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzofurans	ng/kg	1.8		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzofurans	ng/kg	3.3		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDFs	ng/kg	15.5		0.6	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	0.195			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	0.47			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	0.0628			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	0.0525			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	0.0646			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	0.0788			Sep 08, 2015	DOR	Sep 02, 2015

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Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911099		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015		DATE REPORTED: Sep 28, 2016					
SAMPLE DESCRIPTION: UP WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Octa CDD (TEF 0.0003)	TEQ	0.0179			Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	0.0265			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	0.012			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	0.15			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0623			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0302			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0372			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	0.0377			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	0.0219			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	0.0015			Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF (TEF 0.0003)	TEQ	0.0018			Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs and PCDFs (TEQ)	TEQ	1.32			Sep 08, 2015	DOR	Sep 02, 2015
SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS		DATE ANALYZED	INITIAL	DATE PREPARED
13C-2378-TCDF	%	73	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDF	%	75	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-23478-PeCDF	%	84	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDF	%	59	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDF	%	66	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-234678-HxCDF	%	69	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123789-HxCDF	%	71	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDF	%	50	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234789-HpCDF	%	61	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-2378-TCDD	%	75	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDD	%	86	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDD	%	74	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDD	%	73	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDD	%	65	40-130		Sep 08, 2015	DOR	Sep 02, 2015
13C-OCDD	%	45	40-130		Sep 08, 2015	DOR	Sep 02, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
 The results were corrected based on the surrogate percent recoveries.
 Total TEQ and Guideline expressed in ng/Kg TEQ.

Certified By: _____





Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Metals Scan + Hg & CrVI (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911103		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DOWN WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Antimony	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Arsenic	µg/g	3		1	Sep 01, 2015	PI	Sep 01, 2015
Barium	µg/g	59		2	Sep 01, 2015	PI	Sep 01, 2015
Beryllium	µg/g	0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Boron	µg/g	7		5	Sep 01, 2015	PI	Sep 01, 2015
Cadmium	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Chromium	µg/g	15		2	Sep 01, 2015	PI	Sep 01, 2015
Chromium, Hexavalent	µg/g	<0.2		0.2	Sep 01, 2015	BG	Sep 01, 2015
Cobalt	µg/g	4.9		0.5	Sep 01, 2015	PI	Sep 01, 2015
Copper	µg/g	9		1	Sep 01, 2015	PI	Sep 01, 2015
Lead	µg/g	12		1	Sep 01, 2015	PI	Sep 01, 2015
Mercury	µg/g	<0.10		0.10	Sep 01, 2015	PI	Sep 01, 2015
Molybdenum	µg/g	<0.5		0.5	Sep 01, 2015	PI	Sep 01, 2015
Nickel	µg/g	9		1	Sep 01, 2015	PI	Sep 01, 2015
Phosphorus	µg/g	668		5	Sep 01, 2015	PI	Sep 01, 2015
Selenium	µg/g	<0.8		0.8	Sep 01, 2015	PI	Sep 01, 2015
Silver	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Thallium	µg/g	<0.4		0.4	Sep 01, 2015	PI	Sep 01, 2015
Tin	µg/g	<1		1	Sep 01, 2015	PI	Sep 01, 2015
Vanadium	µg/g	26		1	Sep 01, 2015	PI	Sep 01, 2015
Zinc	µg/g	49		5	Sep 01, 2015	PI	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard

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Amanjot Bhela



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

1,2- and 2,3-Benzofluorene [soil]								
SAMPLE TYPE: Soil			SAMPLE ID: 6911103			DATE RECEIVED: Aug 26, 2015		
DATE SAMPLED: Aug 25, 2015						DATE REPORTED: Sep 28, 2016		
SAMPLE DESCRIPTION: DOWN WIND								
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED	
1,2-Benzofluorene (Toronto)	µg/g	<0.05		0.05				
2,3-Benzofluorene (Toronto)	µg/g	<0.05		0.05				
Moisture Content	%	5.32		0.1				

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.

Certified By: _____



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
PROJECT: 111-26648-00, 100A, 0414013
SAMPLING SITE:

AGAT WORK ORDER: 15T012038
ATTENTION TO: Steve Taziar
SAMPLED BY: Trevor Swift

O. Reg. 153(511) - PAHs (Soil)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911103		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015				DATE REPORTED: Sep 28, 2016			
SAMPLE DESCRIPTION: DOWN WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Fluorene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Anthracene	µg/g	<0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Benzo(a)pyrene	µg/g	0.05		0.05	Sep 01, 2015	YJ	Sep 01, 2015
Moisture Content	%	18.5		0.1	Sep 01, 2015	YJ	Sep 01, 2015
SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS		DATE ANALYZED	INITIAL	DATE PREPARED
Chrysene-d12	%	93	50-140		Sep 01, 2015	YJ	Sep 01, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By: _____



Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)							
SAMPLE TYPE: Soil		SAMPLE ID: 6911103		DATE RECEIVED: Aug 26, 2015			
DATE SAMPLED: Aug 25, 2015		DATE REPORTED: Sep 28, 2016					
SAMPLE DESCRIPTION: DOWN WIND							
PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
2,3,7,8-Tetra CDD	ng/kg	<0.1		0.1	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD	ng/kg	0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD	ng/kg	0.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD	ng/kg	0.5		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD	ng/kg	11		0.4	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDD	ng/kg	86		0.6	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF	ng/kg	0.2		0.1	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF	ng/kg	0.2		0.1	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF	ng/kg	0.3		0.1	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF	ng/kg	0.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF	ng/kg	0.4		0.2	Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF	ng/kg	0.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF	ng/kg	2.6		0.2	Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF	ng/kg	<0.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF	ng/kg	8		0.3	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzodioxins	ng/kg	0.4		0.1	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzodioxins	ng/kg	1.8		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzodioxins	ng/kg	3.2		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzodioxins	ng/kg	12.7		0.4	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs	ng/kg	104		0.6	Sep 08, 2015	DOR	Sep 02, 2015
Total Tetrachlorodibenzofurans	ng/kg	2.1		0.1	Sep 08, 2015	DOR	Sep 02, 2015
Total Pentachlorodibenzofurans	ng/kg	2.5		0.1	Sep 08, 2015	DOR	Sep 02, 2015
Total Hexachlorodibenzofurans	ng/kg	1.3		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total Heptachlorodibenzofurans	ng/kg	4.8		0.2	Sep 08, 2015	DOR	Sep 02, 2015
Total PCDFs	ng/kg	19.1		0.3	Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	0.05			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	0.1			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	0.0203			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	0.0605			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	0.0535			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	0.109			Sep 08, 2015	DOR	Sep 02, 2015

Certified By: _____





Certificate of Analysis

CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

O. Reg 153 Dioxins & Furans (Soil, WHO 2005)		
SAMPLE TYPE: Soil	SAMPLE ID: 6911103	DATE RECEIVED: Aug 26, 2015
DATE SAMPLED: Aug 25, 2015		DATE REPORTED: Sep 28, 2016
SAMPLE DESCRIPTION: DOWN WIND		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Octa CDD (TEF 0.0003)	TEQ	0.0259			Sep 08, 2015	DOR	Sep 02, 2015
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	0.0224			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	0.006			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	0.09			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0576			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0369			Sep 08, 2015	DOR	Sep 02, 2015
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0.0286			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	0.01			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	0.0261			Sep 08, 2015	DOR	Sep 02, 2015
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	0.001			Sep 08, 2015	DOR	Sep 02, 2015
Octa CDF (TEF 0.0003)	TEQ	0.00252			Sep 08, 2015	DOR	Sep 02, 2015
Total PCDDs and PCDFs (TEQ)	TEQ	0.70			Sep 08, 2015	DOR	Sep 02, 2015

SURROGATE	UNIT	RESULT	ACCEPTABLE LIMITS	DATE ANALYZED	INITIAL	DATE PREPARED
13C-2378-TCDF	%	66	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDF	%	67	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-23478-PeCDF	%	77	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDF	%	57	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDF	%	64	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-234678-HxCDF	%	66	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-123789-HxCDF	%	70	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDF	%	46	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-1234789-HpCDF	%	58	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-2378-TCDD	%	70	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-12378-PeCDD	%	80	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-123478-HxCDD	%	69	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-123678-HxCDD	%	68	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-1234678-HpCDD	%	60	40-130	Sep 08, 2015	DOR	Sep 02, 2015
13C-OCDD	%	41	40-130	Sep 08, 2015	DOR	Sep 02, 2015

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard
 The results were corrected based on the surrogate percent recoveries.
 Total TEQ and Guideline expressed in ng/Kg TEQ.

Certified By: _____



Quality Assurance

 CLIENT NAME: WSP CANADA INC.
 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

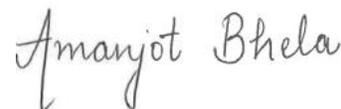
 AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Soil Analysis															
RPT Date: Sep 28, 2016			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan + Hg & CrVI (Soil)															
Antimony	6911073		< 0.8	< 0.8	0.0%	< 0.8	94%	70%	130%	100%	80%	120%	99%	70%	130%
Arsenic	6911073		1	1	0.0%	< 1	109%	70%	130%	93%	80%	120%	91%	70%	130%
Barium	6911073		276	267	3.3%	< 2	100%	70%	130%	96%	80%	120%	86%	70%	130%
Beryllium	6911073		0.9	0.9	0.0%	< 0.5	100%	70%	130%	102%	80%	120%	100%	70%	130%
Boron	6911073		9	8	11.8%	< 5	80%	70%	130%	100%	80%	120%	98%	70%	130%
Cadmium	6911073		< 0.5	< 0.5	0.0%	< 0.5	110%	70%	130%	114%	80%	120%	102%	70%	130%
Chromium	6911073		56	55	1.8%	< 2	99%	70%	130%	94%	80%	120%	96%	70%	130%
Chromium, Hexavalent	6905128		<0.2	<0.2	0.0%	< 0.2	99%	90%	110%	100%	90%	110%	100%	70%	130%
Cobalt	6911073		14.5	13.7	5.7%	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Copper	6911073		39	38	2.6%	< 1	91%	70%	130%	89%	80%	120%	86%	70%	130%
Lead	6911073		9	9	0.0%	< 1	103%	70%	130%	90%	80%	120%	88%	70%	130%
Mercury	6911073		< 0.10	< 0.10	0.0%	< 0.10	98%	70%	130%	93%	80%	120%	84%	70%	130%
Molybdenum	6911073		< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	104%	80%	120%	100%	70%	130%
Nickel	6911073		32	30	6.5%	< 1	102%	70%	130%	98%	80%	120%	98%	70%	130%
Phosphorus	6911073		1120	1080	3.6%	< 5	102%	80%	120%	99%	80%	120%	99%	70%	130%
Selenium	6911073		< 0.8	1.0	NA	< 0.8	93%	70%	130%	97%	80%	120%	100%	70%	130%
Silver	6911073		< 0.4	< 0.4	0.0%	< 0.4	103%	70%	130%	100%	80%	120%	100%	70%	130%
Thallium	6911073		< 0.4	< 0.4	0.0%	< 0.4	96%	70%	130%	99%	80%	120%	100%	70%	130%
Tin	6911073		1	1	0.0%	< 1	116%	70%	130%	105%	80%	120%	106%	70%	130%
Vanadium	6911073		67	64	4.6%	< 1	103%	70%	130%	105%	80%	120%	101%	70%	130%
Zinc	6911073		100	97	3.0%	< 5	98%	70%	130%	91%	80%	120%	93%	70%	130%

Comments: NA Signifies Not Applicable.

RPD Qualifier for Selenium: As the average value for the sample and a duplicate is less than 5X RDL, lab's RPD acceptance criteria is not applicable.

Certified By:





Quality Assurance

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 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Trace Organics Analysis

RPT Date: Sep 28, 2016			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Fluorene	6905137		< 0.05	< 0.05	0.0%	< 0.05	92%	50%	140%	81%	50%	140%	57%	50%	140%
Anthracene	6905137		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	79%	50%	140%	74%	50%	140%
Benzo(a)pyrene	6905137		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	81%	50%	140%	76%	50%	140%
1,2- and 2,3-Benzofluorene [soil]															
1,2-Benzofluorene (Toronto)	1	NA				< 0.05	NA	60%	130%	63%	60%	130%	NA	60%	130%
2,3-Benzofluorene (Toronto)	1	NA				< 0.05	NA	60%	130%	67%	60%	130%	NA	60%	130%

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Quality Assurance

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 PROJECT: 111-26648-00, 100A, 0414013
 SAMPLING SITE:

 AGAT WORK ORDER: 15T012038
 ATTENTION TO: Steve Taziar
 SAMPLED BY: Trevor Swift

Ultra Trace Analysis

RPT Date: Sep 28, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
O. Reg 153 Dioxins & Furans (Soil, WHO 2005)																
2,3,7,8-Tetra CDD	1	6922612	<0.1	<0.1	0.0%	< 0.1	106%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,7,8-Penta CDD	1	6922612	0.2	0.2	0.0%	< 0.2	110%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,4,7,8-Hexa CDD	1	6922612	0.4	0.4	0.0%	< 0.4	109%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,6,7,8-Hexa CDD	1	6922612	0.4	0.3	28.6%	< 0.4	110%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,7,8,9-Hexa CDD	1	6922612	<0.4	<0.4	0.0%	< 0.4	107%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,4,6,7,8-Hepta CDD	1	6922612	0.9	0.9	0.0%	< 0.5	106%	40%	130%	NA	40%	130%	NA	40%	130%	
Octa CDD	1	6922612	3.0	2.7	10.5%	< 0.3	112%	40%	130%	NA	40%	130%	NA	40%	130%	
2,3,7,8-Tetra CDF	1	6922612	0.49	0.44	10.8%	< 0.1	108%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,7,8-Penta CDF	1	6922612	0.5	0.5	0.0%	< 0.1	105%	40%	130%	NA	40%	130%	NA	40%	130%	
2,3,4,7,8-Penta CDF	1	6922612	0.3	0.3	0.0%	< 0.1	108%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,4,7,8-Hexa CDF	1	6922612	0.44	0.47	6.6%	< 0.1	106%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,6,7,8-Hexa CDF	1	6922612	0.3	0.3	0.0%	< 0.1	106%	40%	130%	NA	40%	130%	NA	40%	130%	
2,3,4,6,7,8-Hexa CDF	1	6922612	<0.1	<0.2	NA	< 0.1	106%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,7,8,9-Hexa CDF	1	6922612	<0.2	<0.2	0.0%	< 0.2	102%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,4,6,7,8-Hepta CDF	1	6922612	0.5	0.5	0.0%	< 0.1	105%	40%	130%	NA	40%	130%	NA	40%	130%	
1,2,3,4,7,8,9-Hepta CDF	1	6922612	<0.2	<0.2	0.0%	< 0.2	106%	40%	130%	NA	40%	130%	NA	40%	130%	
Octa CDF	1	6922612	1	0.8	22.2%	< 0.3	112%	40%	130%	NA	40%	130%	NA	40%	130%	

Certified By:

