



REGIONAL MUNICIPALITY OF DURHAM

WHITBY, ONTARIO

DURHAM YORK ENERGY CENTRE: 2023 SOIL TESTING REPORT

RWDI #2301083

November 15, 2023

SUBMITTED TO

Lyndsay Waller, B.Sc., EP
Regional Municipality of Durham
Lyndsay.Waller@Durham.ca

Regional Municipality of Durham
605 Rossland Road East
P.O. Box 623
Whitby, ON L1N 6A3

T: 905.668.7711 | ext. 3445

SUBMITTED BY

Maja Bokara, PGCert, EP
Project Manager
Maja.Bokara@rwdi.com

Scott Pitsch, P.Geo. Ltd., QP
Technical Director
Scott.Pitsch@rwdi.com | ext. 2322

RWDI AIR Inc.
Consulting Engineers & Scientists
600 Southgate Drive
Guelph, ON N1G 4P6

T: 519.823.1311
F: 519.823.1316

DURHAM YORK ENERGY CENTRE: 2023 SOIL TESTING REPORT
REGIONAL MUNICIPALITY OF DURHAM

RWDI#2301083
NOVEMBER 15, 2023



Ms. Lyndsay Waller, B.Sc., EP
Regional Municipality of Durham
1835 Energy Drive
Clarington, ON L1E 2R2

RE: 2023 Soil Testing Report
Durham York Energy Centre
RWDI Reference No. 2301083

Dear Ms. Waller,

RWDI AIR Inc. (RWDI) is pleased to provide this 2023 Soil Testing Report for the Durham York Energy Centre (DYEC) in consideration of the document entitled '*Durham York Energy Centre Soil Testing Plan, Revision 4*' dated July 10, 2020.

Field work associated with the 2023 Soil Testing Program was completed on August 14, 2023. Complete soil analytical results were received from the laboratory on October 11, 2023. This report provides details of the soil testing program completed in 2023 for DYEC and an interpretation of the 2023 monitoring data, including our conclusions and recommendations. Relevant technical data are appended.

We trust that this 2023 Soil Testing Report for DYEC provides sufficient information for your requirements. Should there be any questions or comments, please contact us.

Yours very truly,

RWDI AIR Inc.

A handwritten signature in black ink, appearing to read 'M. Bokara', is positioned above the printed name.

Maja Bokara, PGCert, EP
Project Manager

MB/vit

Attach.



EXECUTIVE SUMMARY

DYEC is an energy-from-waste facility located in the Municipality of Clarington, Regional Municipality of Durham, Ontario. DYEC is situated on the southwest corner of Osborne Road and Energy Drive. DYEC is bounded by commercial and industrial property uses to the north and east, the Canadian National Railway to the south and undeveloped lands to the west. A Location Map is presented in **Figure 1**.

Operating requirements for DYEC are governed by the Ministry of Environment, Conservation and Parks (MECP) Environmental Assessment (EA) Notice of Approval (File No. 04-EA-02-08) (hereinafter "EA Approval") and the Multi-Media Environmental Compliance Approval (ECA) Number 7306-8FDKNX, issued on June 28, 2011, and amended to March 14, 2016, (Notice No. 5) (hereinafter "ECA"). A baseline soil quality study was undertaken as part of the EA to characterize background soil conditions in the vicinity of DYEC prior to its operation. The soil quality results of the baseline study satisfied the Table 1 criteria, where applicable, of the *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (MOECC, April 15, 2011)*. Per Condition 7(10) and 13 (4) of the ECA, the Soil Testing Plan (*Durham York Energy Centre Soil Testing Plan, The Regional Municipality of Durham*, dated March 7, 2014) was prepared. The Soil Testing Plan was based, in part, on the findings of the baseline soil study.

The Soil Testing Plan was subsequently revised in 2020 (*Durham York Energy Centre Soil Testing Plan, Revision 4* dated July 10, 2020). Included in the revisions was discontinuing soil sampling at the DYEC property line station, as the ambient air monitoring station at this location was decommissioned in 2018. Soil sampling is completed at each of the DYEC ambient air monitoring stations and given that the ambient air monitoring station at this location was decommissioned, the soil quality assessment is no longer necessary. The MECP approved the removal of this soil quality assessment station from the Soil Testing Plan per an email from Philip Dunn, Senior Environmental Officer, MECP to Andrew Evans, Project Manager - Waste Planning and Technical Services, Region of Durham, dated August 31, 2020 (**Appendix A**).

This report was prepared to satisfy the requirements of the Soil Testing Plan as well as ECA No. 7306-8FDKNX.

The following conclusions are based on the findings presented in this report.

- The soil sampling grid established at the upwind sampling location was constructed by RWDI personnel based on a previously established metal T-fence post benchmark installed at the southeast corner of the grid outline. The soil sampling grid established at the downwind location was left in place from the previous sample collection efforts.
- Overall, parameter concentrations of metals observed at the upwind and downwind soil sampling locations in 2023 were generally comparable to historical concentrations. Concentrations of dioxins and furans in soil have increased at both the upwind and downwind sampling locations relative to historical levels.
- The observed concentrations of the analyzed parameters for the Upwind and Downwind sample aliquots satisfied the Table 1 criteria of the MECP Standards.



TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.2	Objectives and Scope	2
1.3	Assumptions and Limitations.....	2
2	METHODOLOGY	2
2.1	Soil Sampling Location Preparation.....	3
2.2	Soil Sampling.....	3
2.2.1	Soil Sample Holding Times.....	3
2.2.2	Decontamination Procedure.....	4
2.3	Laboratory Analytical Parameters	4
3	RESULTS AND EVALUATION.....	5
3.1	Quality Assurance and Quality Control.....	5
3.2	Field Documentation.....	6
3.3	Soil Quality	6
3.3.1	Metals	6
3.3.2	Polycyclic Aromatic Hydrocarbons.....	7
3.3.3	Dioxins and Furans.....	7
4	FUTURE MONITORING.....	7
5	CONCLUSIONS AND RECOMMENDATIONS	7
6	STUDY LIMITATIONS	8
7	CLOSURE.....	10

LIST OF TABLES

Table 1:	Relative Percent Difference Analysis
Table 2:	Soil Analytical Results - Metals
Table 3:	Soil Analytical Results – Polycyclic Aromatic Hydrocarbons
Table 4:	Soil Analytical Results – Dioxins and Furans

LIST OF FIGURES

Figure 1:	Site Location Plan
Figure 2:	Upwind Sample Location Plan
Figure 3:	Downwind Sample Location Plan

LIST OF APPENDICES

Appendix A:	Correspondence
Appendix B:	Photographic Log
Appendix C:	Laboratory Certificates of Analysis



1 INTRODUCTION

1.1 Background

The Regional Municipality of Durham (hereinafter “Region”) and The Regional Municipality of York own the Durham York Energy Centre (DYEC), which is located in the Municipality of Clarington, Ontario. DYEC is a thermal treatment energy from waste facility and is operated by Covanta.

DYEC is bounded by commercial and industrial property uses to the north and east, the Canadian National Railway and the Courtice Water Pollution Control Plant (CWPCP) to the south and undeveloped lands to the west. A Location Map is presented in **Figure 1**.

Operating requirements for DYEC are governed by the Ministry of Environment, Conservation and Parks (MECP) Environmental Assessment (EA) Notice of Approval (File No. 04-EA-02-08) (hereinafter “EA Approval”) and the Environmental Compliance Approval (ECA) Number 7306-8FDKNX, issued on June 28, 2011, and amended March 14, 2016 (Notice No. 5) (hereinafter “ECA”). The EA Approval, as well as the ECA and its supporting documents, are posted on DYECs’ website and can be accessed at the following link: www.durhamyorkwaste.ca. A baseline soil quality study was undertaken as part of the EA to characterize background soil conditions in the vicinity of DYEC prior to its operation. The soil quality results of the baseline study satisfied the Table 1 criteria, where applicable, of the *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (MOECC, April 15, 2011)*. Per Condition 7(10) and 13 (4) of the ECA, the Soil Testing Plan (*Durham York Energy Centre Soil Testing Plan, The Regional Municipality of Durham*, dated March 7, 2014) was prepared. The Soil Testing Plan was based, in part, on the findings of the baseline soil study.

Subsequent soil testing events were undertaken in 2013 (prior to DYEC operations), 2015 (representing year 1 of DYEC operations), in 2016 (representing year 2 of DYEC operations), and in 2017 (representing year 3 of DYEC operations). Soil samples were collected from the designated upwind and downwind sampling locations, as well as on-site during the 2015, 2016, and 2017 sampling events.

The Soil Testing Plan was subsequently revised in 2020 (*Durham York Energy Centre Soil Testing Plan, Revision 4* dated July 10, 2020). Included in the revisions was discontinuing soil sampling at the DYEC property line station, as the ambient air monitoring station at this location was decommissioned in 2018. Soil sampling is completed at each of the ambient air monitoring stations and given the ambient air monitoring station at this location was decommissioned, soil quality assessment is no longer required. The Ministry of the Environment Conservation and Parks (MECP) approved the removal of this soil quality assessment station from the Soil Testing Plan per an email from Philip Dunn, Senior Environmental Officer, MECP to Andrew Evans, Project Manager – Waste Planning and Technical Services, Region of Durham, dated August 31, 2020 (**Appendix A**). As such, soil samples were collected from the designated upwind and downwind sampling locations during the 2020 sampling event.

This report was prepared to satisfy the requirements of the Soil Testing Plan as well as ECA No. 7306-8FDKNX, dated June 28, 2011, and amended March 14, 2016.

1.2 Objectives and Scope

The objectives of the 2023 Soil Testing Program for DYEC are outlined below.

- To evaluate soil quality upwind and downwind of DYEC for potential effects as a result of DYEC operations.
- To compare the current year's soil quality data to the baseline data, historical data, the Table 1 criteria of the MECP "Soil, Groundwater, and Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act", (MECP Standards), as well as soil quality data between soil sampling locations.
- To determine whether or not there is the need to implement a contingency plan as outlined in the Soil Testing Plan, in consideration of soil testing findings.
- To provide a report presenting the findings of the Soil Testing Program to Durham Region, York Region and the MECP.

The primary aspects of the Soil Testing Program are data collection, analysis, and interpretation. This 2023 Soil Testing Report documents the data collected as part of the 2023 Soil Testing Program and the data were interpreted in consideration of the requirements set forth in the Soil Testing Plan, as well as historical data.

To evaluate the soil quality upwind and downwind of the Site, analytical results were assessed against the Table 1 criteria of the MECP Standards. The 2023 Soil Testing Program involved a data collection component and a comprehensive analysis and interpretation component. Historical data were provided to RWDI by Durham Region. The 2023 data was collected, assembled, and analyzed by RWDI.

1.3 Assumptions and Limitations

Relevant historical data were provided to RWDI by Durham Region. The historical data provided by Durham Region for the purposes of preparing this 2023 Soil Testing Report has been relied upon by RWDI for our assessment. RWDI has assumed that the information provided was factual and accurate as presented.

2 METHODOLOGY

Soil samples were collected from each designated sampling location (upwind and downwind of DYEC). Each soil sampling location was established adjacent to an existing ambient air monitoring station. The upwind soil sampling location was established at the western portion of the Courtice Water Pollution Control Plant (CWPCP), about 600 metres southwest of the Site. The location of the upwind soil sampling location is presented in **Figure 2**. The downwind soil sampling location was established on a parcel of private property leased by Durham Region, which is located near the southeast corner of the Baseline Road and Rundle Road intersection, about 2 kilometres northeast of DYEC. The location of the downwind soil sampling location is presented in **Figure 3**.



2.1 Soil Sampling Location Preparation

The upwind soil sampling location was constructed by RWDI personnel based on a previously established metal fence post. The metal post was installed at the southeast corner of the soil sampling location. A measuring tape was used to lay out the remaining three (3) corners of the sampling location to establish sub-plots within a sampling grid. Wooden stakes were installed at each corner, creating a ten (10) metre by ten (10) metre square. Nine (9) equally distributed sub-plots were then established within each ten (10) metre square using the measuring tape and wooden stakes. Each sub-plot consisted of a 3.3 metre by 3.3 metre square. The sampling grids were then completed by delineating each sub-plot with rope secured to the metal posts and wooden stakes.

The downwind soil sampling location remained relatively unchanged from the previous sampling event and was considered relatively undisturbed. As such, the soil sample was collected within the established grid at the downwind soil sampling location. It should be noted the tall vegetation prevented the delineation of the sub-plots using rope. RWDI personnel used caution such that sample was accurately collected within the established grid. Photographs of each sample grid are presented in **Figure B-1, Appendix B** for reference.

The position of each corner of the sampling locations was recorded using a handheld GPS unit. The coordinates were recorded in UTM NAD 83 format for reference, if required. Following sample collection, the temporarily constructed grid established at the upwind soil sampling location was removed, with the exception of the aforementioned metal fence post benchmark, which was maintained for future reference at this location. The downwind soil sampling location was left in place following sample collection, in consideration of past practice.

2.2 Soil Sampling

One (1) composite soil sample was collected from each soil sampling location on August 14, 2023. Compositing samples consisted of combining soil aliquots collected from nine (9) sub-plots for each soil sampling grid, which were established per Section 2.1. An equal volume of soil (approximately 500 mL) was collected from each sub-plot, for a total of approximately 4,500 mL of soil that was collected from each soil sampling location. The soil was collected from surface to approximately two (2) centimetres below ground surface (cm BGS) using a stainless-steel trowel. Vegetation and rootlets were excluded from the sample, where practical. The soil aliquots from each sub-plot were placed into a stainless-steel bowl and homogenized prior to filling the laboratory provided sample jars.

Per Section 4.4 of the Soil Testing Plan, one (1) replicate soil sample was collected from each of the two (2) soil sampling locations. The replicate samples were retained by Durham Region personnel, in consideration of past practices.

2.2.1 Soil Sample Holding Times

Per Section 4.5 of the Soil Testing Plan (*Sample Handling*), container requirements for parameter analysis, storage, and preservation requirements for soil samples were carried out in accordance with the 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, dated July 1, 2011, amended as of February 19, 2021. As noted in previous Soil Testing Reports, the soil sample holding times specified in the aforementioned document vary compared to the sample holding times recommended by Eurofins Environment Testing Canada Inc. (Eurofins) for select parameters, as outlined below.



Parameter Grouping	Eurofins Holding Time	MOECC Analytical Protocol*
Metals	28 days	180 days
Chromium VI	28 days	30 days
Mercury, Methyl Mercury	28 days	28 days
PAH's	14 days	60 days
Dioxins and Furans	1 year	Indefinite

Note: *Denotes protocol as per *Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act* by MOECC Laboratory Services Branch dated July 1, 2011, amended February 19, 2021.

Analytical results of the above parameters may be affected, should analysis be completed beyond the prescribed sample holding times. Soil samples submitted for analytical testing did not surpass their respective holding times for this soil sampling event.

2.2.2 Decontamination Procedure

The stainless-steel trowels and bowls used for soil sample collection were decontaminated between each soil sampling location. The decontamination procedure was undertaken in accordance with Section 4.5 of the Soil Testing Plan, such that the equipment was washed with an environmental grade cleanser and rinsed with de-ionized water, followed by acetone and hexane rinses. The sampling equipment was air-dried prior to being placed in sealed containers for storage in between soil sampling locations.

2.3 Laboratory Analytical Parameters

The soil samples collected during the 2023 Soil Testing Program were submitted to Eurofins under chain of custody procedures for analysis of the parameters listed below. Methyl mercury was subcontracted by Eurofins to ALS Canada Ltd. (ALS). Phosphorous was subcontracted to Paracel Laboratories Ltd. (Paracel). These laboratories are certified with Canadian Association for Laboratory Accreditation (CALA) certified laboratories. Dioxins and Furans was subcontracted by Eurofins to Eurofins Lancaster Laboratories Environmental Testing (Eurofins Lancaster). Eurofins Lancaster is certified with the National Environmental Laboratory Accreditation Program (NELAC), U.S. Department of Defense Laboratory Accreditation Program (DoD), and ISO 17025.

Parameter Grouping	Parameter
Metals	Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Chromium VI, Cobalt, Copper, Lead, Mercury, Methyl Mercury, Molybdenum, Nickel, Phosphorus, Selenium, Silver, Thallium, Tin, Vanadium, Zinc
Polycyclic Aromatic Hydrocarbons (PAH's)	Anthracene, Benzo(a)fluorene, Benzo(a)pyrene, Benzo(b)fluorene, Fluorene
Dioxins and Furans (PCDD/PCDF)	Total PCDD/PCDF



3 RESULTS AND EVALUATION

3.1 Quality Assurance and Quality Control

Quality assurance and quality control (QA/QC) measures for DYEC's Soil Testing Program in 2023 included field-prepared duplicate samples, laboratory duplicates, laboratory spiked samples, as well as percent recovery of analysis and data review.

The laboratory analyzed several control samples to verify that the analytical equipment was functioning properly and that it would report results accurately at the time of analysis for the samples collected. The control samples had an expected target value, which was compared against pre-determined data quality objectives. For the laboratory control samples, the results were within acceptable laboratory data quality criteria.

For the field-prepared duplicate samples, the analytical results for the required parameters of analysis were evaluated for the relative percent difference (RPD) of parameter concentrations using the applicable performance standards for sample duplicates noted in Tables 5.1 to 5.15 of the MECP's *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, prepared by the MECP, dated March 8, 2004, and amended on February 19, 2021 (MECP Sampling Protocol). The RPD screening mechanism is such that for concentrations greater than five (5) times the reporting detection limit (RDL), a concentration difference of less than or equal to the applicable Required Performance Standard is deemed acceptable. As the measured result approaches the RDL, uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five (5) times the RDL. Where QA/QC RPD screening mechanism is not identified within the MECP Sampling Protocol, the results for the required parameters of analysis are compared to the screening evaluation by the USEPA National Functional Guidelines (EPA-540-R-20-005) as a general QA/QC RPD screening mechanism.

For the results found to be outside of the tolerance of each QA/QC evaluation, a laboratory data quality review (DQR) of the results is requested such that the concentrations are accurate as presented and are within acceptable laboratory data quality criteria. Soil duplicate samples were analyzed for the complete analytical parameter list.

One (1) field prepared soil duplicate sample was collected during the 2023 Soil Testing Program. The field-prepared soil duplicate sample was collected from the upwind soil sampling location (designated 'Soil Dup'). The RPD results for the field prepared soil duplicate sample are included in **Table 1**. Per **Table 1**, the analyzed metals and PAH parameters satisfied QA/QC tolerances. Concentrations of dioxins and furans showed RPD values that were above the control limits. Although a QA/QC exception was identified, laboratory QA/QC procedures, such as method blanks, and percent recovery of analyses were acceptable, therefore the relevant sample results were interpreted to be representative of actual conditions at the time of sampling. Given the heterogeneity and variability associated with soil as a sample media, the RPD analysis should be interpreted with caution.



3.2 Field Documentation

Per Section 4.6 of the Soil Testing Plan, detailed field notes were collected at the time of sampling by RWDI personnel. The following table summarizes the data collected in the field.

Data Type	Information Collected
Site Name & Photograph	Durham York Energy Center. Site photographs are included in Appendix B .
GPS Coordinates for Sample Plot Locations (UTM NAD 83)	Upwind NE Corner: 680044, 4860028 Downwind NE Corner: 681968,4861867
Field Personnel's Name	James Hanna, Eric Wilson
Date, Time and Location of Sample Collection	Upwind: August 13, 2023, 10:00 Downwind: August 13, 2023, 12:30
Sample Number/ID	Upwind Grid: 'Upwind' Downwind Grid: 'Downwind'
Whether QA/QC Samples Were Collected	One (1) field prepared duplicate sample. One (1) replicate sample collected for retention by Durham Region at each sample grid location.
Type of Containers Used for Collection	Four (4) 250 mL glass amber jars for each sampling grid were provided by Eurofins.
Whether samples were Preserved	Samples were not preserved, as specified by Eurofins.
Sampling Method and Composite Collection Pattern/Map of Test Plot Area	As specified in Section 2 and Figures 2 and 3 of this Report.
Unusual Site Conditions	The Downwind sample grid was covered with waist high vegetation.
Weather Conditions	Partly cloudy , approximately 22°C.

Field notes collected at the time of sample collection are maintained on file by RWDI for future reference, if required.

3.3 Soil Quality

The soil analytical results were received in full from the laboratory on October 11, 2023. The laboratory certificates of analysis are provided in **Appendix C**.

3.3.1 Metals

The laboratory analytical results for the metals parameters analyzed at the upwind and downwind soil sampling locations in August 2023, historical data dating back to 2013 including the DYEC fence line soil sampling location (denoted DYEC), as well as a comparison to Table 1 criteria of the MECP Standards is provided in **Table 2**. Per **Table 2**, the metals parameter concentrations observed in August 2023 satisfied the Table 1 criteria of the MECP Standards. The 2023 concentrations were generally consistent with the historical metals concentrations.



3.3.2 Polycyclic Aromatic Hydrocarbons

The laboratory analytical results for the PAH parameters analyzed at the upwind and downwind soil sampling locations in August 2023, historical data dating back to 2013, including the DYEC soil sampling location, as well as a comparison to the Table 1 criteria of the MECP Standards is provided in **Table 3**. Per **Table 3**, the PAH parameter concentrations observed in August 2023 were below the laboratory MRL and satisfied the Table 1 criteria of the MECP Standards. The 2023 concentrations were consistent with historical PAH concentrations.

3.3.3 Dioxins and Furans

The laboratory analytical results for dioxins and furans analyzed at the upwind and downwind soil sampling locations in August 2023, historical data dating back to 2013, as well as a comparison to the Table 1 criteria of the MECP Standards is provided in **Table 4**. Per **Table 4**, concentrations of dioxins and furans in soil measured during the 2023 sampling event increased at both the upwind and downwind sampling locations relative to historical levels. However, the observed concentrations were well below the Table 1 criteria of the MECP Standards. Though 2023 soil results are noted as historical upper limits, the ambient air quality criteria was satisfied during recent air quality monitoring events, and source testing of dioxins and furans carried out in April 2023 indicated that the facility was operating well below the respective regulatory limits. Therefor the observed soil concentrations are not interpreted to be attributed to facility emissions. Soil quality monitoring should continue, to assess for emerging trends.

4 FUTURE MONITORING

Per Section 4.2 of the Soil Testing Plan, the Soil Testing Program was undertaken annually during the first three (3) years of DYEC operations. In accordance with Condition 7.(10) (b) of the ECA, following the 2017 soil sampling event, monitoring transitioned to sampling once every three (3) years, commencing in 2020. As such, the next soil testing event is currently scheduled to be undertaken in 2026. It is suggested that the soil sampling program take place within the same season (i.e. August) to remain consistent with past sampling frequencies.

5 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the findings presented in this report.

- The soil sampling grid established at the upwind sampling location was constructed by RWDI personnel based on a previously established metal T-fence post benchmark installed at the southeast corner of the grid outline. The soil sampling grid established at the downwind location was left in place from the previous sample collection efforts.
- Overall, parameter concentrations of metals observed at the upwind and downwind soil sampling locations in 2023 were generally comparable to historical concentrations.



- Concentrations of dioxins and furans in soil have increased at both the upwind and downwind sampling locations relative to historical levels, but are not interpreted to be attributed to facility emissions.
- The observed concentrations of the analyzed parameters for the Upwind and Downwind sample aliquots satisfied the Table 1 criteria of the MECP Standards.

The following recommendations are respectfully submitted.

- The contingency plan, per the Soil Testing Plan, does not need to be implemented at this time.
- Soil sampling should continue to follow the established three (3) year schedule. As such, the next soil sampling event is currently scheduled to be undertaken in 2026.

6 STUDY LIMITATIONS AND USE OF REPORT

This 2023 Soil Testing Report (Soil Testing Report) was prepared by RWDI AIR, Inc., (“RWDI”) for the Regional Municipality of Durham, the Regional Municipality of York (Regions) (“**CLIENT**”) and the Ministry of the Environment, Conservation and Parks (MECP). The findings and conclusions presented in this report have been prepared for the Client for the objectives and purposes described in the Soil Testing Report (the “**INTENDED PURPOSE**”). In relation to the specific portions of the Site identified herein and subject to the limitations of the scope of RWDI’s services described in the Report (the “**SCOPE OF SERVICES**”). At the request of the Client, we have conducted a soil testing program in accordance with condition 7(10) and 13 (4) of the ECA, the Soil Testing Plan (*Durham York Energy Centre Soil Testing Plan, The Regional Municipality of Durham*, dated March 7, 2014).

The investigations, assessments and studies performed and summarized in this Soil Testing Report have been conducted in accordance with generally accepted engineering and environmental consulting in the Province of Ontario as of the date of this Report (the “**STANDARD OF CARE**”). No other warranty, expressed or implied, is intended or made and this Report is not to be construed as legal advice.

The conclusions and recommendations contained in this Soil Testing Report are based on conditions at the Site observed by RWDI during site inspections and on information: (1) supplied by the Client (including its representatives, employees, independent contractors and other consultants engaged by the Client) in relation to the Site at the time the Soil Test Report was prepared (“**CLIENT SUPPLIED INFORMATION**”); and (2) information made available by governmental authorities and other authoritative sources (“**THIRD PARTY INFORMATION**”). RWDI assumes that the Client Supplied Information and Third-Party Information is accurate and reliable and does not accept responsibility for any deficiency, misstatement or inaccuracy contained in this Soil Testing Report as a result of errors, omissions, misrepresentations, or inaccuracies in the Client Supplied Information or Third-Party Information. Investigations to determine the truth or accuracy of the Client Supplied Information or Third-Party Information are outside of RWDI’s Scope of Services.

In the event that additional information becomes available which differs significantly from our understanding of conditions presented in this Soil Testing Report, RWDI is not obligated to update the conclusions in this Soil Testing Report and shall not do so unless engaged by the Client for that purpose.



The applicability and reliability of any of the conclusions, recommendations, or opinions expressed in this Report, are only in relation to the Intended Purpose, and only to the extent that there has been no material alteration to or variation to: (1) the physical conditions on the portions of the Site analyzed by RWDI; (2) any of the stated assumptions described in the Report; (3) the Client Supplied Information or Third Party Information; or (4) changes to applicable laws and/or standards after the date of this Report governing the matters that are the subject of this Report. RWDI assumes no responsibility for any deficiency or inaccuracy in Client Supplied Information or Third-Party Information.

The investigations and evaluations of the Site conditions, soils, groundwater, sediments, contaminants and their quantities have been performed in accordance with the Standard of Care and utilizing scientific principles and professional judgment and estimations. Nevertheless, there is still an inherent risk that some conditions will not be detected. Furthermore, the investigations and evaluations of the Site may be subject to factors beyond RWDI's control including but not limited to restrictions caused by physical obstructions, precipitation or other adverse or anomalous weather conditions, denied access, inaccessible areas, time constraints, limitations in the Scope of Services and, readily available documentation. It is therefore RWDI's intent that the conclusions and recommendations contained in this Soil Testing Report be utilized as guidance in relation to the Intended Purpose and not as instructions for a firm course of action, unless explicitly stated otherwise in the Soil Testing Report.

RWDI relied in part, upon information and documentation (Data) provided by municipal, provincial, and federal resources, as well as Site representatives, independent sources, historical documentation, the Client as well as other third parties. It is assumed by RWDI that the Data provided are complete and accurate. RWDI was not retained to, nor has it conducted any independent verification of the accuracy, completeness or suitability of the Data. As such, RWDI assumes no liability for losses, damages, or claims of any nature arising from inaccurate, incomplete or unsuitable Data provided on this project. The Regions by receipt of this Report agrees to indemnify and hold harmless RWDI with respect thereto.

It is noted that regulatory guidelines, standards and related documents as referenced in this report are subject to interpretation and may change over time.

This Report was prepared using scientific principles and professional judgement in assessing available facts and presenting subjective interpretations. The professional judgements presented within this document and based on available facts within the limits of the existing information, budgeting scope of work, and schedule. It is RWDI's intent that the professional judgement and interpretive conclusions be utilized as guidance and not be necessarily construed as a firm course of action, unless explicitly stated otherwise. RWDI makes no warranties, expressed or implied, including without limitations, or warranties as to merchantability or fitness of the property for a particular purpose. The information presented in this report should not be construed as legal advice.

It is important that the reader of this Soil Testing Report, recognize that subsurface, environmental and/or geotechnical conditions may vary geographically and temporally. This is a natural phenomenon, which is not fully accommodated in the limited testing conducted by RWDI. In addition, the analysis of the collected data, by necessity, incorporates simplifying assumptions of site conditions and analytical solutions that assume uniformity in site conditions. The opinions, conclusions, and recommendations contained within the Soil Report therefore represent RWDI's professional judgment in-light of these limitations.



This Soil Testing Report is to be considered confidential and is for the sole use of the Regions and the MECP. As such, the Soil Testing Report shall not be relied upon by third parties, except where agreed in writing between RWDI and the Region; where required by law; or where used for governmental review. RWDI accepts no responsibility, and denies any liability whatsoever, to parties other than the Regions who may obtain access to the Soil Testing Report, for any injury, loss, or damage suffered by such parties arising from their use of, reliance upon, decisions or actions based on the Report or any of its contents, except to the extent where those parties have obtained prior written consent of RWDI to use and rely upon the Report and its contents. Any damages arising from improper use of the Report or parts thereof shall be borne by the party making such use.

This statement of Qualifications and Limitations is attached to, and forms part of the Report and any use of the Report are subject to the terms thereof.

7 CLOSURE

We trust that this 2023 Soil Testing Report for the Durham York Energy Centre is satisfactory. Please do not hesitate to contact us with any questions you may have.

Yours very truly,

RWDI

A handwritten signature in black ink, appearing to read 'James Hanna', is positioned above the printed name.

James Hanna, B.Sc., GIT
Scientist | Geosciences

A handwritten signature in black ink, appearing to read 'Scott Pitsch', is positioned above the printed name.

Scott Pitsch, P.Geo. Ltd., QP
Technical Director

JMH/SP/vit

Attach.

A large decorative graphic on the left side of the page. It features a blue triangular shape at the top left, a white curved line, and a large light beige circular area that dominates the lower half of the page.

TABLES

Table 1: Relative Percent Difference Analysis

Durham York Energy Center
 The Regional Municipality of Durham
 Project No. 2301083

PARAMETER	UNITS	REPORTED DETECTION LIMIT	SAMPLE ID	DUPLICATE ID	CONCENTRATION <5X RDL			CONCENTRATION >5X RDL		
			UPWIND	SOIL-DUP	DIFFERENCE IN CONCENTRATION	CONTROL LIMIT (± RDL)	COMMENT	RPD %	CONTROL LIMIT	COMMENT
			14-Aug-23							
<i>Metals</i>										
Antimony	µg/g	1	1	1	0.00	1.00	OK			
Arsenic	µg/g	1	3	3	0.00	1.00	OK			
Barium	µg/g	1	92	98		1.00		6	30	OK
Beryllium	µg/g	1	1	1	0.00	1.00	OK			
Boron	µg/g	5	7	7	0.00	5.00	OK			
Cadmium	µg/g	0.4	0.4	0.4	0.00	0.40	OK			
Chromium, Total	µg/g	1	23	23.0		1.00		0	30	OK
Chromium, Hexavalent	µg/g	0.20	0.23	0.20	0.03	0.20	OK			
Cobalt	µg/g	1	7	7		1.00		0	30	OK
Copper	µg/g	1	14	14		1.00		0	30	OK
Lead	µg/g	1	9	10		1.00		11	30	OK
Mercury	µg/g	0.10	0.1	0.1	0.00	0.10	OK			
Methyl Mercury	ug/kg	0.05	0.09	0.08	0.01	0.05	OK			
Molybdenum	µg/g	1	1	1	0.00	1.00	OK			
Nickel	µg/g	1	14	15		1.00		7	30	OK
Phosphorus	µg/g	20	862	787		20.00		9	30	OK
Selenium	µg/g	1	0.7	1	0.30	0.50	OK			
Silver	µg/g	0.2	0.2	0.2	0.00	0.20	OK			
Thallium	µg/g	1	1	1	0.00	1.00	OK			
Tin	µg/g	5	5	5	0.00	5.00	OK			
Vanadium	µg/g	2	29	31		2.00		7	30	OK
Zinc	µg/g	2	63	63		2.00		0	30	OK
<i>Polycyclic Aromatic Hydrocarbons (PAHs)</i>										
Fluorene	µg/g	0.05	0.05	0.05	0.00	0.05	OK			
Anthracene	µg/g	0.05	0.05	0.05	0.00	0.05	OK			
Benzo(a)pyrene	µg/g	0.05	0.05	0.05	0.00	0.05	OK			
Benzo(a)fluorene	µg/g	0.05	0.05	0.05	0.00	0.05	OK			
Benzo(b)fluorene	µg/g	0.05	0.05	0.05	0.00	0.05	OK			
<i>Dioxins & Furans</i>										
Total PCDDs and PCDFs (TEQ)	TEQ ng/kg		1.3	0.62		0.00		71	40	above

Table 2: Soil Analytical Results - Metals

Durham York Energy Center
 The Regional Municipality of Durham
 Project No. 2301083

Parameters	Units	Soil Standards	UPWIND						DYEC			DOWNWIND					
			22 Aug 13	25 Aug 15	17 Aug 16	23 Aug 17	19 Aug 20	14 Aug 23	25 Aug 15	17 Aug 16	23 Aug 17	22 Aug 13	25 Aug 15	17 Aug 16	23 Aug 17	19 Aug 20	14 Aug 23
<i>Metals</i>																	
Antimony	µg/g	1.3	<0.8	<0.8	<0.8	<0.8	<1	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1
Arsenic	µg/g	18	2	2	3	3	3	3	2	3	3	3	3	3	3	3	3
Barium	µg/g	220	87	76	100	94	97	92	54	81	97	68	59	74	67	83	98
Beryllium	µg/g	2.5	0.5	0.6	0.6	0.6	<1	<1	0.5	0.6	0.6	<0.5	0.5	0.6	<0.5	<1	<1
Boron	µg/g	36	6	7	9	6	5	7	5	7	5	5	7	8	5	7	7
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.4	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.4	<0.4
Chromium, Total	µg/g	70	18	20	23	21	23	23	16	20	22	14	15	18	16	18	23
Chromium, Hexavalent	µg/g	0.66	<0.2	<0.2	<0.2	<0.2	0.22	0.23	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.33	<0.20
Cobalt	µg/g	21	6.8	7.1	7.7	7.9	7	7	4.5	5.6	6.6	4.8	4.9	5.6	4.9	5	7
Copper	µg/g	92	15	12	15	16	15	14	9	14	17	11	9	11	10	12	14
Lead	µg/g	120	10	9	10	11	11	9	10	13	15	13	12	14	15	16	10
Mercury	µg/g	0.27	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1
Methyl Mercury (ng/g)	µg/g	-	<1.3	<0.4	<0.4	<0.4	0.2	0.09	0.75	<0.4	<0.4	<1.3	<0.4	<0.4	<0.4	0.22	0.08
Molybdenum	µg/g	2	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1
Nickel	µg/g	82	16	13	15	17	16	14	9	12	14	11	9	10	9	11	15
Phosphorus	µg/g	-	729	815	891	691	760	862	911	973	813	609	668	705	592	700	787
Selenium	µg/g	1.5	<0.8	<0.8	<0.8	<0.8	<1	0.7	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<1	1
Silver	µg/g	0.5	<0.4	<0.4	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.2	<0.2
Thallium	µg/g	1	<0.4	<0.4	<0.4	<0.4	<1	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1
Tin	µg/g	-	<1	<1	<1	<1	<5	<5	1	2	1	<1	<1	<1	<1	<5	<5
Vanadium	µg/g	86	27	29	33	32	29	29	23	27	31	24	26	28	25	29	31
Zinc	µg/g	290	63	58	67	69	79	63	54	70	78	51	49	60	53	63	63

- Notes:**
1. Soil Standard as per Table 1 of the Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (MOECC, April 15, 2011.)
 2. '-' denotes Soil Standard criteria not established.
 3. **BOLD** and shaded indicate an exceedance of the Soil Standards
 4. Units are in µg/g unless otherwise noted.

Table 3: Soil Analytical Results - PAHs

Durham York Energy Center
 The Regional Municipality of Durham
 Project No. 2301083

Parameters	Units	Soil Standards	UPWIND						DYEC			DOWNWIND						
			22 Aug-13	25 Aug-15	17 Aug-16	23 Aug-17	19 Aug-20	14 Aug-23	25 Aug-15	17 Aug-16	23 Aug-17	22 Aug-13	25 Aug-15	17 Aug-16	23 Aug-17	10/18/2017 (Re sample)	19 Aug-20	14 Aug-23
<i>Polycyclic Aromatic Hydrocarbons (PAHs)</i>																		
Fluorene	µg/g	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Anthracene	µg/g	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	-	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.05	<0.05	0.61	0.28	0.24	<0.05
Benzo(a)fluorene	µg/g	-	<0.05	<0.05	<0.05	<0.05	0.0257	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.402	<0.05
Benzo(b)fluorene	µg/g	-	<0.05	<0.05	<0.05	<0.05	0.0159	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.371	<0.05

- Notes:**
1. Soil Standard as per Table 1 of the Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (MOECC, April 15, 2011.)
 2. '-' denotes Soil Standard criteria not established.
 3. **BOLD** and shaded indicate an exceedance of the Soil Standards
 4. Units are in µg/g unless otherwise noted.

Table 4: Soil Analytical Results - Dixoins and Furans

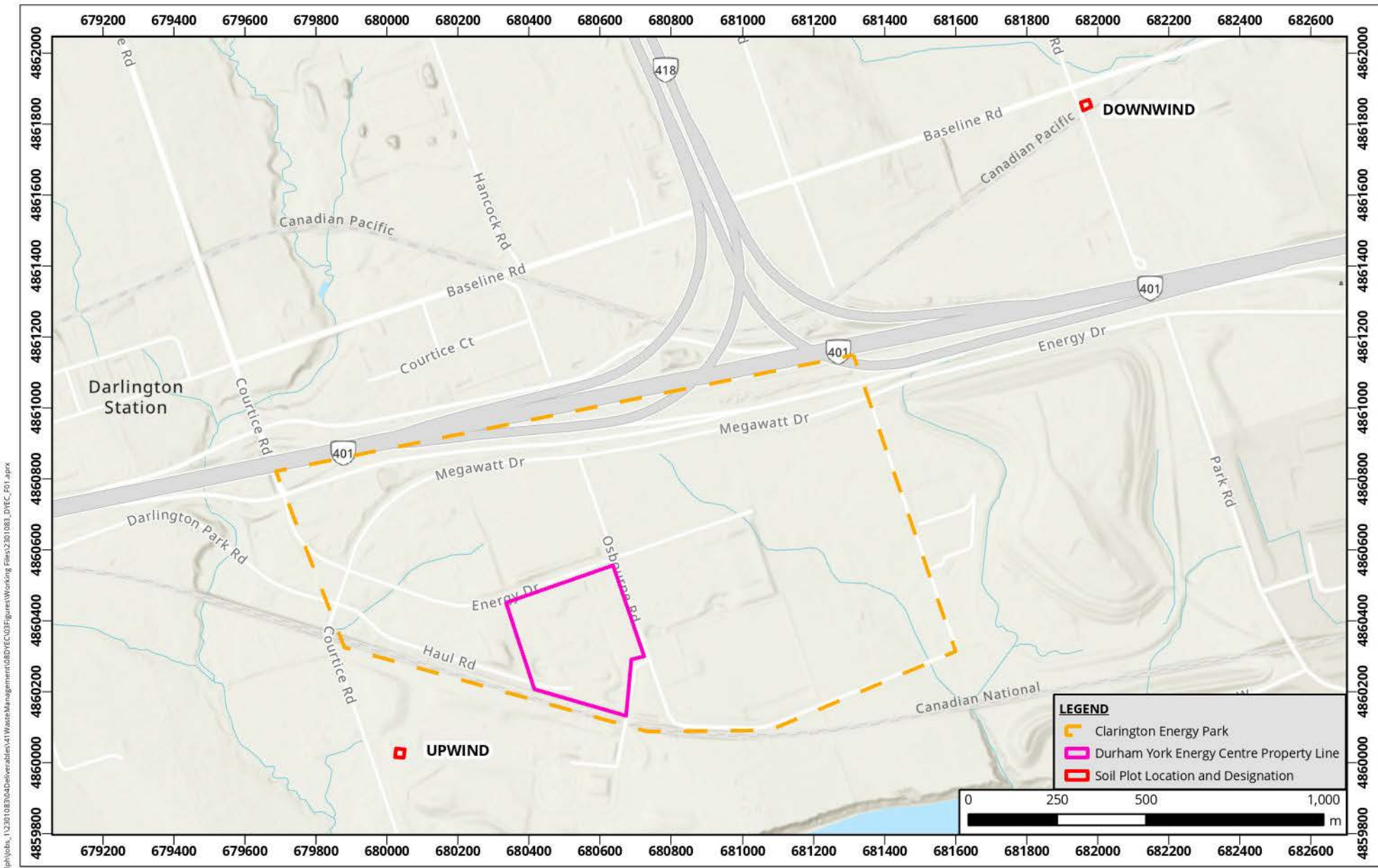
Durham York Energy Center
 The Regional Municipality of Durham
 Project No. 2301083

Parameters	Units	Soil Standards	UPWIND						DYEC			DOWNWIND					
			22 Aug 13	25 Aug 15	17 Aug 16	23 Aug 17	19 Aug 20	14 Aug 23	25 Aug 15	17 Aug 16	23 Aug 17	22 Aug 13	25 Aug 15	17 Aug 16	23 Aug 17	19 Aug 20	14 Aug 23
Dioxins & Furans																	
2,3,7,8-Tetra CDD	ng/kg	-	<0.5	0.2	<0.1	<0.1	<0.034	0.079	<0.2	<0.1	<0.8	<0.4	<0.1	<0.1	<0.3	0.137	0.23
1,2,3,7,8-Penta CDD	ng/kg	-	<0.6	0.5	<0.1	<0.2	0.086	0.57	0.3	<0.1	<0.6	<0.6	<0.2	<0.1	0.4	0.238	0.93
1,2,3,4,7,8-Hexa CDD	ng/kg	-	<0.6	0.6	<0.1	0.3	<0.22	0.23	0.4	1.8	<1	<0.5	0.2	<0.1	<0.4	0.34	0.84
1,2,3,6,7,8-Hexa CDD	ng/kg	-	<0.6	0.5	<0.1	0.3	0.27	0.51	<0.3	2	<1	<0.5	0.6	<0.1	0.6	0.82	1.5
1,2,3,7,8,9-Hexa CDD	ng/kg	-	<0.5	0.6	<0.1	0.2	0.23	0.55	0.9	2.2	<1	0.5	0.5	<0.1	1	1.01	0.97
1,2,3,4,6,7,8-Hepta CDD	ng/kg	-	8.2	7.9	4.8	6.2	16	10	12	36.3	12	17	11	8.1	12.6	19.4	23
Octa CDD	ng/kg	-	57	60	31.5	43.2	116	60	95	303	82	118	86	74.7	103	112	120
2,3,7,8-Tetra CDF	ng/kg	-	<0.4	0.3	<0.1	<0.1	0.091	0.31	<0.2	<0.1	<0.3	<0.3	0.2	<0.1	<0.3	0.349	0.46
1,2,3,7,8-Penta CDF	ng/kg	-	<0.4	0.4	<0.1	<0.2	0.100	0.24	<0.2	<0.1	<1	<0.8	0.2	<0.1	<0.4	0.285	0.67
2,3,4,7,8-Penta CDF	ng/kg	-	<0.4	0.5	<0.1	0.2	0.358	0.47	0.2	<0.1	<1	<0.6	0.3	<0.1	<0.4	0.597	0.80
1,2,3,4,7,8-Hexa CDF	ng/kg	-	<0.6	0.6	1.7	0.4	0.350	0.42	0.5	<0.1	<0.9	<0.4	0.6	1.6	0.8	0.41	0.84
1,2,3,6,7,8-Hexa CDF	ng/kg	-	<0.6	0.3	<0.1	0.2	0.170	0.37	0.3	<0.1	<0.8	<0.4	0.4	<0.1	0.4	0.57	0.86
2,3,4,6,7,8-Hexa CDF	ng/kg	-	<0.6	0.4	2.3	<0.2	<0.12	0.43	0.4	<0.1	<0.9	0.7	0.3	1.4	0.5	<0.12	0.78
1,2,3,7,8,9-Hexa CDF	ng/kg	-	<0.8	0.4	<0.1	<0.2	0.230	0.28	<0.3	<0.1	<1	<0.5	<0.2	<0.1	<0.4	0.23	0.42
1,2,3,4,6,7,8-Hepta CDF	ng/kg	-	2.1	2.2	1.2	1.7	3.04	3.2	2.7	7.8	1.3	4.9	2.6	7.9	3.2	5.32	6.8
1,2,3,4,7,8,9-Hepta CDF	ng/kg	-	<1	<0.3	<0.1	<0.4	0.29	0.22	0.3	<0.1	<0.9	<0.6	<0.2	<0.1	0.4	0.41	0.76
Octa CDF	ng/kg	-	3	6	6.7	4.6	11.4	6.4	9	32	7.5	9	8	9	6.1	14.9	15
Total Tetrachlorodibenzodioxins	ng/kg	-	1.3	0.7	<0.1	0.5	0.529	0.48	0.3	<0.1	<0.8	1.4	0.4	<0.1	1.5	0.822	1.1
Total Pentachlorodibenzodioxins	ng/kg	-	<0.6	2.5	<0.1	1	0.959	1.4	2.3	8.1	<0.6	2.3	1.8	<0.1	2.6	2.75	1.7
Total Hexachlorodibenzodioxins	ng/kg	-	3.6	3.7	<0.2	2.3	5.54	3.0	3.3	22.5	<1	4.3	3.2	<0.2	4.7	9.96	9.8
Total Heptachlorodibenzodioxins	ng/kg	-	17.7	10.2	13.4	14.5	58.8	10	15	57.9	20	31.1	12.7	28.6	25.7	40.5	45
Total PCDDs	ng/kg	-	80	76.8	44.9	61.5	182	75	116	392	103	158	104	103	138	166	178
Total Tetrachlorodibenzofurans	ng/kg	-	3.1	2	<0.1	2.6	1.18	0.76	3.8	10.1	7.4	4.7	2.1	1.2	3.7	4.20	2.5
Total Pentachlorodibenzofurans	ng/kg	-	1.3	2.3	4.3	1.1	4.59	2.9	3.3	6.2	<1	3.3	2.5	<0.1	2.7	7.04	5.0
Total Hexachlorodibenzofurans	ng/kg	-	2.4	1.8	103	2.5	1.96	4.0	1.2	173	3.3	6.5	1.3	2.9	5.3	8.17	10
Total Heptachlorodibenzofurans	ng/kg	-	5	3.3	56.9	4.1	8.67	7.0	4.9	36.4	4.1	12.3	4.8	15.1	8.1	14.0	17
Total PCDFs	ng/kg	-	14	15.5	171	14.9	27.8	21	21.7	258	14.8	36	19.1	28.3	25.9	48.3	50
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	-	0.25	0.195	0.05	0.05	0.017	0.079	0.1	0.05	0.4	0.2	0.05	0.05	0.15	0.137	0.23
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	-	0.3	0.47	0.05	0.1	0.086	0.57	0.262	0.05	0.3	0.3	0.1	0.05	0.422	0.238	0.93
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	-	0.03	0.0628	0.005	0.0261	0.011	0.023	0.0372	0.184	0.065	0.025	0.0203	0.005	0.02	0.0341	0.084
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	-	0.03	0.0525	0.005	0.0285	0.027	0.051	0.015	0.201	0.065	0.025	0.0605	0.005	0.0635	0.0816	0.15
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	-	0.025	0.0646	0.005	0.0217	0.023	0.055	0.0871	0.22	0.07	0.0544	0.0535	0.005	0.105	0.101	0.097
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	-	0.0819	0.0788	0.0475	0.0616	0.16	0.10	0.12	0.363	0.121	0.17	0.109	0.0807	0.126	0.194	0.23
Octa CDD (TEF 0.0003)	TEQ	-	0.0172	0.0179	0.00944	0.0129	0.0348	0.018	0.0285	0.091	0.0246	0.0355	0.0259	0.0224	0.031	0.0336	0.036
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	-	0.02	0.0265	0.005	0.005	0.0091	0.031	0.01	0.005	0.015	0.015	0.0224	0.005	0.015	0.0349	0.046
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	-	0.006	0.012	0.0015	0.003	0.003	0.0072	0.003	0.0015	0.0165	0.012	0.006	0.0015	0.006	0.00855	0.020
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	-	0.06	0.15	0.015	0.0638	0.1074	0.14	0.06	0.015	0.15	0.09	0.09	0.015	0.06	0.1791	0.24
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	-	0.03	0.0623	0.171	0.0367	0.035	0.042	0.0499	0.005	0.045	0.02	0.0576	0.159	0.075	0.0409	0.084
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	-	0.03	0.0302	0.005	0.0203	0.017	0.037	0.03	0.005	0.04	0.02	0.0369	0.005	0.0422	0.0565	0.086
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	-	0.03	0.0372	0.233	0.01	0.023	0.043	0.0427	0.005	0.045	0.072	0.0286	0.136	0.0495	0.023	0.078
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	-	0.04	0.0377	0.005	0.01	0.006	0.028	0.015	0.005	0.065	0.025	0.01	0.005	0.02	0.006	0.042
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	-	0.021	0.0219	0.012	0.0173	0.0304	0.032	0.027	0.0782	0.0125	0.049	0.0261	0.0785	0.0321	0.0532	0.068
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	-	0.005	0.0015	0.0005	0.002	0.00287	0.0022	0.00266	0.0005	0.0045	0.003	0.001	0.0005	0.00417	0.00407	0.0076
Octa CDF (TEF 0.0003)	TEQ	-	0.00081	0.0018	0.00202	0.00138	0.00342	0.0019	0.00256	0.00961	0.00225	0.00284	0.00252	0.00271	0.00184	0.00447	0.0045
Total PCDDs and PCDFs (TEQ)	TEQ ng/kg	7	0.977	1.32	0.622	0.47	0.596	1.3	0.9	1.29	1.44	1.12	0.7	0.626	1.22	1.23	2.4

Notes: 1. Soil Standard as per Table 1 of the Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (MOECC, April 15, 2011.)
 2. '-' denotes Soil Standard criteria not established.

A large decorative graphic on the left side of the page. It features a blue triangular shape at the top left, which transitions into a white curved line. Below this line is a large, light beige curved shape that fills most of the left half of the page.

FIGURES



Map Document: \\wv\dg\group\queph\jobs_1\2301083\04\Deliverables\41\Waste Management\08\DYEC\03\Figures\Working Files\2301083_DYEC_F01.aprx

SITE LOCATION MAP 2023 SOIL TESTING PROGRAM

Map Projection: NAD 1983 UTM Zone 17N
The Regional Municipality of Durham - Durham York Energy Centre

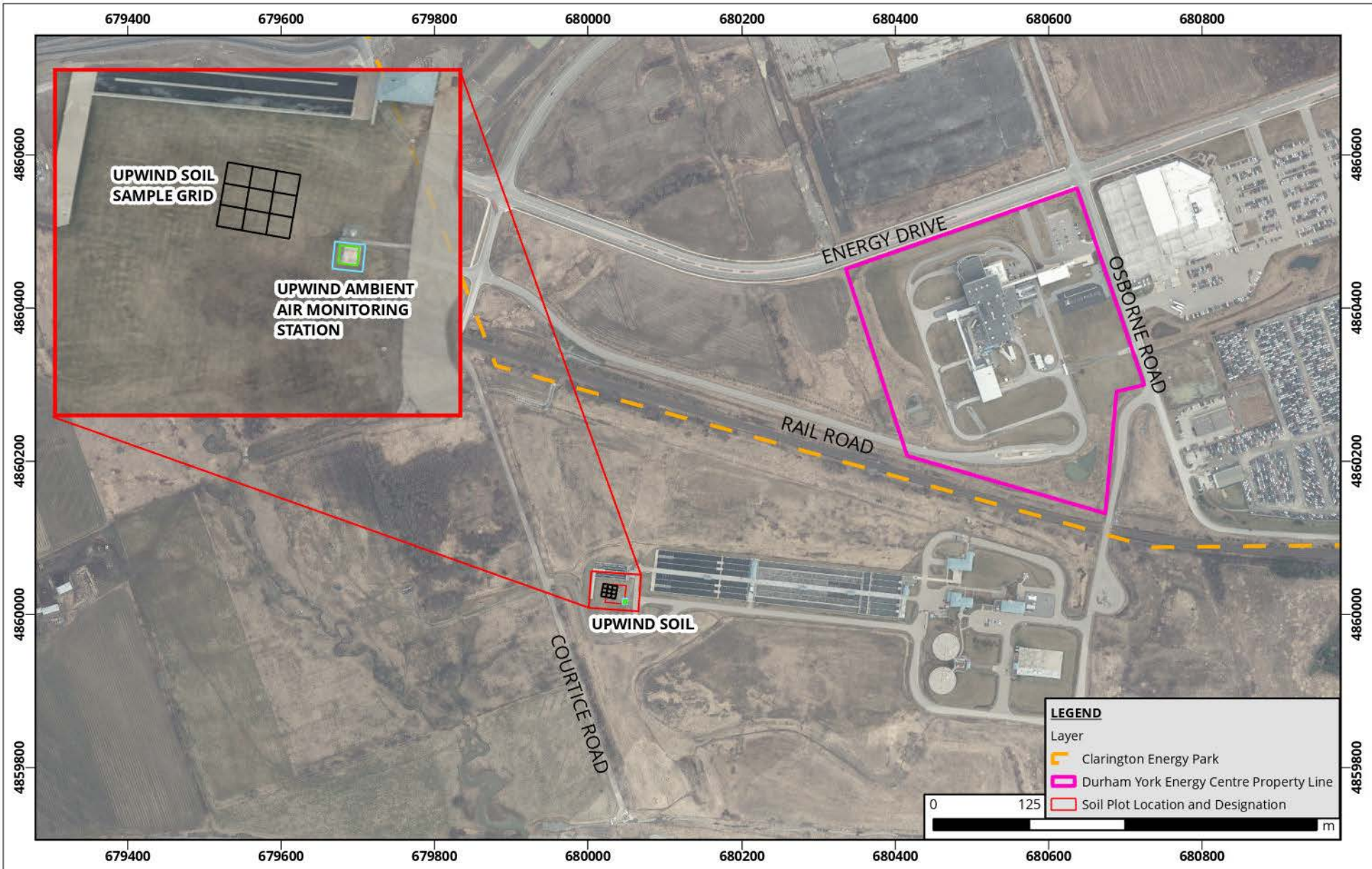
- Notes:
1. Basemap from First Base Mapping Solutions (2018)
 2. Site details from WSP (2015)



Drawn by: JMH	Figure: 1
Approx. Scale: 1:15,000	
Date Revised: Sep 7, 2023	

Project #: 2301083





UPWIND SAMPLE LOCATION MAP 2023 SOIL TESTING PROGRAM

Map Projection: NAD 1983 UTM Zone 17N
The Regional Municipality of Durham - Durham York Energy Centre

- Notes:
1. Basemap from First Base Mapping Solutions (2018)
 2. Site details from WSP (2015)

True North



Drawn by: JMH | Figure: 2

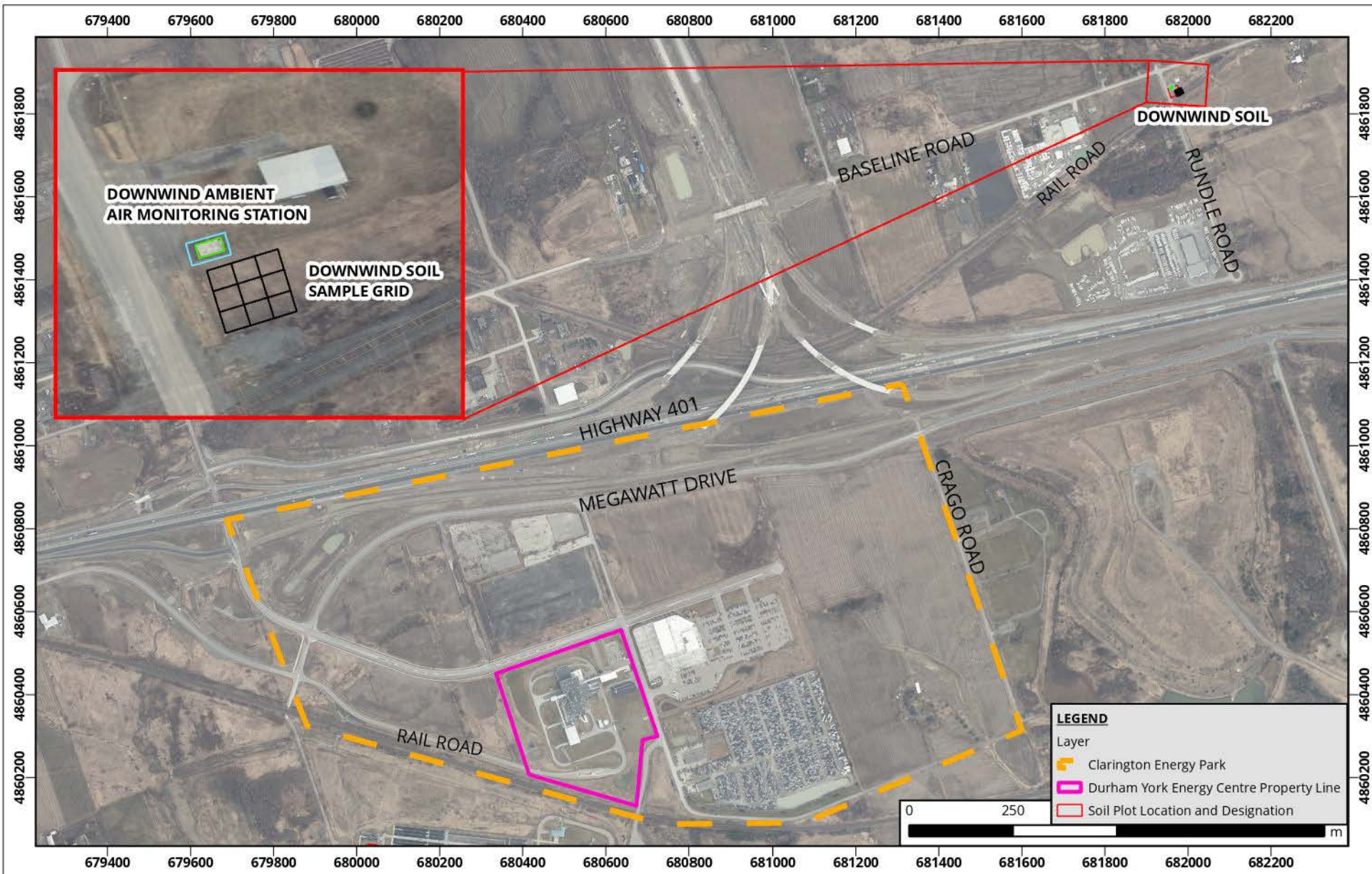
Approx. Scale: 1:7,000

Date Revised: Sep 7, 2023

Project #: 2301083



Map Document: \\w\dlgroup\queph\jobs_1\2301083\04\Deliverables\41\Waste Management\08D\VEEC\03\Figures\Working_Files\2301083_DVEC_F03.aprx



DOWNWIND SAMPLE LOCATION MAP 2023 SOIL TESTING PROGRAM

Map Projection: NAD 1983 UTM Zone 17N
The Regional Municipality of Durham - Durham York Energy Centre

- Notes:
1. Basemap from First Base Mapping Solutions (2018)
 2. Site details from WSP (2015)



Drawn by: JMH	Figure: 3
Approx. Scale: 1:13,000	
Date Revised: Sep 7, 2023	



Project #: 2301083

The background features a large, light beige curved shape on the right side, and a blue curved shape on the left side, separated by a white curved line.

APPENDIX A

Carlos Pena

From: Dunn, Philip (MECP) <Philip.Dunn@ontario.ca>
Sent: Monday, August 31, 2020 6:37 PM
To: Andrew Evans
Cc: Gioseph Anello; Lyndsay Waller; Dugas, Celeste (MECP); Butchart, Jeff (MECP); Martin, Paul (MECP); O'Leary, Emilee (MECP)
Subject: Durham York Energy Centre - Fenceline Soil Sampling and Revised Soil Testing Plan

Hi Andrew,

As I explained last week we've reviewed the revised soil sampling plan and agree that the soil sampling at the former fenceline ambient station is no longer required. As indicated in Section 2.4 of the previous Soil Testing Plan and Section 3.2 of the attached revised plan the ambient air monitoring program and soil testing are linked. With the removal of the fenceline ambient air monitoring station in 2018 soil sampling at the former fenceline station is no longer required.

In Section 4.3 of the Ambient Air Quality Monitoring Plan the purpose of the fenceline ambient air monitoring station (located inside the property line of the DYEC) was to monitor low level fugitive emissions (particulate and metals) for a minimum of one year after construction is complete. The location of the station was not considered representative of background conditions or within the area of interpreted maximum emissions deposition.

Any questions please give me a call,

Take care, Phil

Phil Dunn
Senior Environmental Officer
Ministry of Environment, Conservation and Parks
York Durham District
(905)424-2808 cel.
Email: philip.dunn@ontario.ca

We want to hear from you. How was my service? You can provide feedback at 1-888-745-8888.

From: Melodee Smart <Melodee.Smart@Durham.ca>
Sent: July 17, 2020 5:09 PM
To: Dugas, Celeste (MECP) <Celeste.Dugas@ontario.ca>
Cc: Gioseph Anello <Gioseph.Anello@Durham.ca>; 'Laura McDowell' <Laura.McDowell@york.ca>; Trevisan, Lisa (MECP) <Lisa.Trevisan@ontario.ca>; Malcolmson, Heather (MECP) <Heather.Malcolmson@ontario.ca>; O'Neill, Kathleen (MECP) <Kathleen.Oneill@ontario.ca>; Dunn, Philip (MECP) <Philip.Dunn@ontario.ca>; Butchart, Jeff (MECP) <jeff.butchart@ontario.ca>; Martin, Paul (MECP) <Paul.D.Martin@ontario.ca>; O'Leary, Emilee (MECP) <Emilee.OLeary@ontario.ca>; Battarino, Gavin (MECP) <Gavin.Battarino@ontario.ca>; Matthew Neild (mneild@covanta.com) <mneild@covanta.com>; 'Amanda Huxter (AHuxter@covanta.com)' <AHuxter@covanta.com>; Ron.Gordon@york.ca; 'Seth Dittman (Seth.Dittman@york.ca)' <Seth.Dittman@york.ca>; Farid, Muneeb <Muneeb.Farid@york.ca>; Angela Porteous <Angela.Porteous@durham.ca>; Andrew Evans <Andrew.Evans@durham.ca>; Lyndsay Waller <Lyndsay.Waller@Durham.ca>; Danielle Luciano <Danielle.Luciano@Durham.ca>
Subject: Durham York Energy Centre: Revised Soil Testing Plan

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon Ms. Dugas –

On behalf of Gioseph Anello, M.Eng., P.Eng., PMP, Director, Waste Management Services, The Regional Municipality of Durham, and on behalf of Laura McDowell, P.Eng., Director, Environmental Promotion and Protection, The Regional Municipality of York, please find attached, to your attention, correspondence and related attachments regarding 'Durham York Energy Centre, Revised Soil Testing Plan'.

Thank you,

Melodee Smart | Administrative Assistant

The Regional Municipality of Durham | Works Department – Commissioner's Office

605 Rossland Road East, Level 5, Whitby, Ontario L1N 6A3

905-668-7711 or 1-800-372-1102 extension 3560 | 905.668.2051

Melodee.Smart@durham.ca | durham.ca

THIS MESSAGE IS FOR THE USE OF THE INTENDED RECIPIENT(S) ONLY AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, PROPRIETARY, CONFIDENTIAL, AND/OR EXEMPT FROM DISCLOSURE UNDER ANY RELEVANT PRIVACY LEGISLATION. No rights to any privilege have been waived. If you are not the intended recipient, you are hereby notified that any review, re-transmission, dissemination, distribution, copying, conversion to hard copy, taking of action in reliance on or other use of this communication is strictly prohibited. If you are not the intended recipient and have received this message in error, please notify me by return e-mail and delete or destroy all copies of this message.

A large decorative graphic on the left side of the page, featuring a blue triangle at the top left corner and a large, light beige curved shape that dominates the lower half of the page. The text 'APPENDIX B' is centered within the beige area.

APPENDIX B



PHOTOGRAPH 1: VIEW OF THE UPWIND SOIL SAMPLING SITE, FACING SOUTH.



PHOTOGRAPH 2: VIEW OF THE DOWNWIND SOIL SAMPLING SITE, FACING SOUTHEAST.

Notes:

PHOTOGRAPHIC LOG

2023 SOIL TESTING REPORT

*REGIONAL MUNICIPALITY OF DURHAM
DURHAM YORK ENERGY CENTRE*

FIGURE NUMBER

B-1

APPROX. SCALE

NTS

PROJECT NUMBER

2301083

DATE REVISED

12-Oct-23



A large decorative graphic on the left side of the page, featuring a blue triangle at the top left corner and a large, light beige circular shape that overlaps the triangle and extends across the page.

APPENDIX C

Client: RWDI Air Inc
600 Southgate Drive
Guelph, ON
N1G 4P6
Attention: Ms. Maja Bokara
Invoice to: RWDI Air Inc.
PO#:

Report Number: 3000342
Date Submitted: 2023-08-14
Date Reported: 2023-10-11
Project: 2301083.10 (DYEC)
COC #: 224765
Temperature (C): 16
Custody Seal:

Page 1 of 8

Dear Maja Bokara:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh
Zafari
R Zafari 2023.10.11
16:16:54
-04'00'

Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <https://directory.cala.ca/>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Environment Testing

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Lab I.D.	1699322	1699323	1699324
Sample Matrix	Soil153	Soil153	Soil153
Sample Type			
Sample Date	2023-08-14	2023-08-14	2023-08-14
Sampling Time			
Sample I.D.	Upwind	Downwind	Soil - DUP

Analyte	Batch No	MRL	Units	Guideline	Upwind	Downwind	Soil - DUP
Antimony	447464	1	ug/g	STD 1.3	<1	<1	<1
Arsenic	447464	1	ug/g	STD 18	3	3	3
Barium	447464	1	ug/g	STD 220	92	72	98
Beryllium	447464	1	ug/g	STD 2.5	<1	<1	<1
Boron (total)	447464	5	ug/g	STD 36	7	6	7
Cadmium	447464	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4
Chromium Total	447464	1	ug/g	STD 70	23	18	23
Chromium VI	447446	0.20	ug/g	STD 0.66	0.23	0.33	<0.20
Cobalt	447464	1	ug/g	STD 21	7	5	7
Copper	447464	1	ug/g	STD 92	14	11	14
Lead	447464	1	ug/g	STD 120	9	13	10
Mercury	447464	0.1	ug/g	STD 0.27	<0.1	<0.1	<0.1
Molybdenum	447464	1	ug/g	STD 2	<1	<1	<1
Nickel	447464	1	ug/g	STD 82	14	10	15
Selenium	447464	0.5	ug/g	STD 1.5	0.7	0.9	1.0
Silver	447464	0.2	ug/g	STD 0.5	<0.2	<0.2	<0.2
Thallium	447464	1	ug/g	STD 1	<1	<1	<1
Tin	447464	5	ug/g		<5	<5	<5
Vanadium	447464	2	ug/g	STD 86	29	28	31
Zinc	447464	2	ug/g	STD 290	63	56	63

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Environment Testing

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D.	1699322	1699323	1699324
Sample Matrix	Soil153	Soil153	Soil153
Sample Type			
Sample Date	2023-08-14	2023-08-14	2023-08-14
Sampling Time			
Sample I.D.	Upwind	Downwind	Soil - DUP

Analyte	Batch No	MRL	Units	Guideline			
Anthracene	447427	0.05	ug/g	STD 0.16	<0.05	<0.05	<0.05
Benz[a]anthracene	447427	0.05	ug/g	STD 0.36	<0.05	<0.05	<0.05
Benzo[a]pyrene	447427	0.05	ug/g	STD 0.3	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	447427	0.05	ug/g	STD 0.47	<0.05	<0.05	<0.05
Fluorene	447427	0.05	ug/g	STD 0.12	<0.05	<0.05	<0.05

Subcontract

Lab I.D.	1699322	1699323	1699324
Sample Matrix	Soil153	Soil153	Soil153
Sample Type			
Sample Date	2023-08-14	2023-08-14	2023-08-14
Sampling Time			
Sample I.D.	Upwind	Downwind	Soil - DUP

Analyte	Batch No	MRL	Units	Guideline			
Methyl Mercury	448941	0.05	ug/kg		0.09	<0.05	0.08

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Environment Testing

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Subcontract-Inorg

Lab I.D.	1699322	1699323	1699324
Sample Matrix	Soil153	Soil153	Soil153
Sample Type			
Sample Date	2023-08-14	2023-08-14	2023-08-14
Sampling Time			
Sample I.D.	Upwind	Downwind	Soil - DUP

Analyte Batch No MRL Units Guideline

Total P	447783	20.0	ug/g		862	710	787
---------	--------	------	------	--	-----	-----	-----

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447427	Anthracene	<0.05 ug/g	77	50-140	73	50-140	0	0-40
447427	Benz[a]anthracene	<0.05 ug/g	69	50-140	62	50-140	0	0-40
447427	Benzo[a]pyrene	<0.05 ug/g	65	50-140	65	50-140	0	0-40
447427	Benzo[b]fluoranthene	<0.05 ug/g	53	50-140	55	50-140	0	0-40
447427	Fluorene	<0.05 ug/g	60	50-140	54	50-140	0	0-40
447446	Chromium VI	<0.20 ug/g	99	70-130	94	70-130	0	0-35
447464	Silver	<0.2 ug/g	91	70-130	97	70-130	0	0-20
447464	Arsenic	<1 ug/g	89	70-130	102	70-130	0	0-20
447464	Boron (total)	<5 ug/g	88	70-130	143	70-130	0	0-20
447464	Barium	<1 ug/g	99	70-130	167	70-130	1	0-20
447464	Beryllium	<1 ug/g	87	70-130	100	70-130	0	0-20
447464	Cadmium	<0.4 ug/g	101	70-130	108	70-130	0	0-20
447464	Cobalt	<1 ug/g	88	70-130	94	70-130	1	0-20
447464	Chromium Total	<1 ug/g	90	70-130	42	70-130	24	0-20
447464	Copper	<1 ug/g	92	70-130	93	70-130	2	0-20
447464	Mercury	<0.1 ug/g	90	70-130	85	70-130	0	0-20
447464	Molybdenum	<1 ug/g	90	70-130	93	70-130	0	0-20
447464	Nickel	<1 ug/g	89	70-130	60	70-130	9	0-20
447464	Lead	<1 ug/g	96	70-130	97	70-130	2	0-20
447464	Antimony	<1 ug/g	94	70-130	87	70-130	0	0-20
447464	Selenium	<0.5 ug/g	103	70-130	95	70-130	0	0-20
447464	Tin	<5 ug/g	122	70-130		70-130	0	0-20
447464	Thallium	<1 ug/g	95	70-130	95	70-130	0	0-20
447464	Vanadium	<2 ug/g	92	70-130	160	70-130	2	0-20
447464	Zinc	<2 ug/g	97	70-130	97	70-130	2	0-20
447783	Total P	<10.0 ug/g	98	80-120	98		11	
448941	Methyl Mercury	<0.050	97				0	

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: RWDI Air Inc
 600 Southgate Drive
 Guelph, ON
 N1G 4P6
 Attention: Ms. Maja Bokara
 PO#:
 Invoice to: RWDI Air Inc.

Report Number: 3000342
 Date Submitted: 2023-08-14
 Date Reported: 2023-10-11
 Project: 2301083.10 (DYEC)
 COC #: 224765

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
447427	Anthracene	GC-MS	2023-08-17	2023-08-17	C_M	P 8270
447427	Benz[a]anthracene	GC-MS	2023-08-17	2023-08-17	C_M	P 8270
447427	Benzo[a]pyrene	GC-MS	2023-08-17	2023-08-17	C_M	P 8270
447427	Benzo[b]fluoranthene	GC-MS	2023-08-17	2023-08-17	C_M	P 8270
447427	Fluorene	GC-MS	2023-08-17	2023-08-17	C_M	P 8270
447446	Chromium VI	FAA	2023-08-18	2023-08-18	MW	M US EPA 3060A
447464	Silver	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Arsenic	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Boron (total)	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Barium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Beryllium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Cadmium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Cobalt	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Chromium Total	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Copper	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Mercury	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Molybdenum	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Nickel	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Lead	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Antimony	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Selenium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Tin	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Thallium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Vanadium	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447464	Zinc	ICAPQ-MS	2023-08-18	2023-08-18	SD	EPA 200.8/6020
447783	Total P		2023-08-17	2023-08-18	AET	SUBCONTRACT P-INORG
448941	Methyl Mercury		2023-09-13	2023-09-13	AET	SUBCONTRACT-A

Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: RWDI Air Inc
600 Southgate Drive
Guelph, ON
N1G 4P6
Attention: Ms. Maja Bokara
PO#:
Invoice to: RWDI Air Inc.

Report Number: 3000342
Date Submitted: 2023-08-14
Date Reported: 2023-10-11
Project: 2301083.10 (DYEC)
COC #: 224765

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Rebecca Koshy
Eurofins Environment Testing Canada
146 Colonnade Road, No. 8
Ottawa, Ontario K2E 7Y1

Generated 10/10/2023 5:42:35 PM

JOB DESCRIPTION

1699322-23010983.10(DYEC)-3000.342

JOB NUMBER

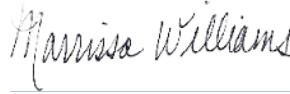
410-139343-1

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
10/10/2023 5:42:35 PM

Authorized for release by
Marrison Williams, Project Manager
Marrison.Williams@et.eurofinsus.com
(717)556-7246

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

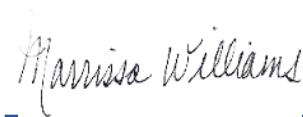
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Case Narrative

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Job ID: 410-139343-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-139343-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 8/17/2023 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 17.9°C

Receipt Exceptions

USDA Compliance agreement documentation to be submitted was either missing or incomplete for the following samples: 1699322-Upwind (410-139343-1), 1699323-Downwind (410-139343-2) and 1699324-Soil-Dup (410-139343-3).

Dioxin

Method 1613B: The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: 1699324-Soil-Dup (410-139343-3). Signal-to-noise ratios are within method recommended limits. Re-extraction and re-analysis were performed, and yielded similar results.

Method 1613B: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-139343-1	1699322-Upwind	Solid	08/14/23 00:00	08/17/23 09:25
410-139343-2	1699323-Downwind	Solid	08/14/23 00:00	08/17/23 09:25
410-139343-3	1699324-Soil-Dup	Solid	08/14/23 00:00	08/17/23 09:25

1

2

3

4

5

6

7

8

9

10

11

12

Client Sample Results

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699322-Upwind

Lab Sample ID: 410-139343-1

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 81.4

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	10	cn	5.9	0.13	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,4,6,7,8-HpCDF	3.2	J B cn	5.9	0.028	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,4,7,8-HxCDD	0.23	J I cn	5.9	0.019	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,4,7,8-HxCDF	0.42	J B cn	5.9	0.068	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,4,7,8,9-HpCDF	0.22	J I B cn	5.9	0.036	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,6,7,8-HxCDD	0.51	J I B cn	5.9	0.020	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,6,7,8-HxCDF	0.37	J cn	5.9	0.068	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,7,8-PeCDD	0.57	J I B cn	5.9	0.020	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,7,8-PeCDF	0.24	J I B cn	5.9	0.016	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,7,8,9-HxCDD	0.55	J I B cn	5.9	0.018	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
1,2,3,7,8,9-HxCDF	0.28	J I B cn	5.9	0.078	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
2,3,4,6,7,8-HxCDF	0.43	J I B cn	5.9	0.066	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
2,3,4,7,8-PeCDF	0.47	J I B cn	5.9	0.012	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
2,3,7,8-TCDD	0.079	J I cn	1.2	0.015	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
2,3,7,8-TCDF	0.31	J cn	1.2	0.031	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
OCDD	60	B cn	12	0.068	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
OCDF	6.4	J B cn	12	0.017	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total HpCDD	10	cn	5.9	0.13	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total HpCDF	7.0	I B cn	5.9	0.032	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total HxCDD	3.0	J I B cn	5.9	0.019	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total HxCDF	4.0	J I B cn	5.9	0.070	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total PeCDD	1.4	J I B cn	5.9	0.020	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total PeCDF	2.9	J I B cn	5.9	0.014	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total TCDD	0.48	J I cn	1.2	0.015	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1
Total TCDF	0.76	J cn	1.2	0.031	ng/Kg	☼	10/06/23 14:02	10/10/23 00:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDD	56	cn	23 - 140	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,4,6,7,8-HpCDF	61	cn	28 - 143	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,4,7,8-HxCDD	67	cn	32 - 141	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,4,7,8-HxCDF	75	cn	26 - 152	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,4,7,8,9-HpCDF	64	cn	26 - 138	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,6,7,8-HxCDD	65	cn	28 - 130	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,6,7,8-HxCDF	77	cn	26 - 123	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,7,8-PeCDD	65	cn	25 - 181	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,7,8-PeCDF	59	cn	24 - 185	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,7,8,9-HxCDD	71	cn	28 - 130	10/06/23 14:02	10/10/23 00:33	1
13C-1,2,3,7,8,9-HxCDF	70	cn	29 - 147	10/06/23 14:02	10/10/23 00:33	1
13C-2,3,4,6,7,8-HxCDF	74	cn	28 - 136	10/06/23 14:02	10/10/23 00:33	1
13C-2,3,4,7,8-PeCDF	69	cn	21 - 178	10/06/23 14:02	10/10/23 00:33	1
13C-2,3,7,8-TCDD	78	cn	25 - 164	10/06/23 14:02	10/10/23 00:33	1
13C-2,3,7,8-TCDF	74	cn	24 - 169	10/06/23 14:02	10/10/23 00:33	1
13C-OCDD	54	cn	17 - 157	10/06/23 14:02	10/10/23 00:33	1
13C-OCDF	55	cn	17 - 157	10/06/23 14:02	10/10/23 00:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	18.6		1.0	1.0	%			08/17/23 19:55	1

Client Sample Results

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699323-Downwind

Lab Sample ID: 410-139343-2

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 78.3

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	23		6.2	0.11	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,4,6,7,8-HpCDF	6.8	B	6.2	0.025	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,4,7,8-HxCDD	0.84	J	6.2	0.0095	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,4,7,8-HxCDF	0.84	J B	6.2	0.039	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,4,7,8,9-HpCDF	0.76	J B	6.2	0.034	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,6,7,8-HxCDD	1.5	J I B	6.2	0.0097	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,6,7,8-HxCDF	0.86	J	6.2	0.038	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,7,8-PeCDD	0.93	J I B	6.2	0.016	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,7,8-PeCDF	0.67	J B	6.2	0.021	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,7,8,9-HxCDD	0.97	J B	6.2	0.0086	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.042	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
2,3,4,6,7,8-HxCDF	0.78	J B	6.2	0.037	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
2,3,4,7,8-PeCDF	0.80	J B	6.2	0.018	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
2,3,7,8-TCDD	0.23	J I	1.2	0.0074	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
2,3,7,8-TCDF	0.46	J I	1.2	0.014	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
OCDD	120	B	12	0.054	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
OCDF	15	B	12	0.019	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total HpCDD	45		6.2	0.11	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total HpCDF	17	B	6.2	0.030	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total HxCDD	9.8	I B	6.2	0.0093	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total HxCDF	10	B	6.2	0.039	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total PeCDD	1.7	J I B	6.2	0.016	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total PeCDF	5.0	J I B	6.2	0.019	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total TCDD	1.1	J I	1.2	0.0074	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1
Total TCDF	2.5	I	1.2	0.014	ng/Kg	☼	10/06/23 14:02	10/10/23 09:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,4,7,8-HxCDD	78		32 - 141	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,4,7,8-HxCDF	87		26 - 152	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,7,8-PeCDD	63		25 - 181	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,7,8-PeCDF	71		24 - 185	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,7,8,9-HxCDD	84		28 - 130	10/06/23 14:02	10/10/23 09:48	1
13C-1,2,3,7,8,9-HxCDF	83		29 - 147	10/06/23 14:02	10/10/23 09:48	1
13C-2,3,4,6,7,8-HxCDF	84		28 - 136	10/06/23 14:02	10/10/23 09:48	1
13C-2,3,4,7,8-PeCDF	72		21 - 178	10/06/23 14:02	10/10/23 09:48	1
13C-2,3,7,8-TCDD	84		25 - 164	10/06/23 14:02	10/10/23 09:48	1
13C-2,3,7,8-TCDF	83		24 - 169	10/06/23 14:02	10/10/23 09:48	1
13C-OCDD	76		17 - 157	10/06/23 14:02	10/10/23 09:48	1
13C-OCDF	74		17 - 157	10/06/23 14:02	10/10/23 09:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	21.7		1.0	1.0	%			08/17/23 19:55	1

Client Sample Results

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699324-Soil-Dup

Lab Sample ID: 410-139343-3

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 82.1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	12	cn	6.1	0.18	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,4,6,7,8-HpCDF	2.9	J B cn	6.1	0.031	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,4,7,8-HxCDD	0.42	J I cn	6.1	0.024	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,4,7,8-HxCDF	0.64	J I B cn	6.1	0.076	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,4,7,8,9-HpCDF	0.29	J B cn	6.1	0.038	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,6,7,8-HxCDD	0.53	J I B cn	6.1	0.023	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,6,7,8-HxCDF	0.50	J I cn	6.1	0.078	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,7,8-PeCDD	ND	cn	6.1	0.045	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,7,8-PeCDF	0.25	J B cn	6.1	0.047	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,7,8,9-HxCDD	0.39	J I B cn	6.1	0.020	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
1,2,3,7,8,9-HxCDF	ND	cn	6.1	0.077	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
2,3,4,6,7,8-HxCDF	0.49	J I B cn	6.1	0.070	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
2,3,4,7,8-PeCDF	0.45	J I B cn	6.1	0.037	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
2,3,7,8-TCDD	ND	cn	1.2	0.033	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
2,3,7,8-TCDF	ND	cn	1.2	0.028	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
OCDD	71	B cn	12	0.10	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
OCDF	7.1	J B cn	12	0.014	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total HpCDD	27	cn	6.1	0.18	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total HpCDF	3.3	J B cn	6.1	0.035	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total HxCDD	2.9	J I B cn	6.1	0.022	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total HxCDF	1.6	J I B cn	6.1	0.075	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total PeCDD	1.2	J B cn	6.1	0.045	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total PeCDF	2.0	J I B cn	6.1	0.042	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total TCDD	0.14	J cn	1.2	0.033	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1
Total TCDF	0.36	J cn	1.2	0.028	ng/Kg	☼	10/06/23 14:02	10/10/23 02:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDD	40	cn	23 - 140	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,4,6,7,8-HpCDF	42	cn	28 - 143	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,4,7,8-HxCDD	38	cn	32 - 141	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,4,7,8-HxCDF	38	cn	26 - 152	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,4,7,8,9-HpCDF	45	cn	26 - 138	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,6,7,8-HxCDD	37	cn	28 - 130	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,6,7,8-HxCDF	37	cn	26 - 123	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,7,8-PeCDD	25	cn	25 - 181	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,7,8-PeCDF	25	cn	24 - 185	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,7,8,9-HxCDD	41	cn	28 - 130	10/06/23 14:02	10/10/23 02:14	1
13C-1,2,3,7,8,9-HxCDF	40	cn	29 - 147	10/06/23 14:02	10/10/23 02:14	1
13C-2,3,4,6,7,8-HxCDF	40	cn	28 - 136	10/06/23 14:02	10/10/23 02:14	1
13C-2,3,4,7,8-PeCDF	28	cn	21 - 178	10/06/23 14:02	10/10/23 02:14	1
13C-2,3,7,8-TCDD	22	*5- cn	25 - 164	10/06/23 14:02	10/10/23 02:14	1
13C-2,3,7,8-TCDF	20	*5- cn	24 - 169	10/06/23 14:02	10/10/23 02:14	1
13C-OCDD	45	cn	17 - 157	10/06/23 14:02	10/10/23 02:14	1
13C-OCDF	46	cn	17 - 157	10/06/23 14:02	10/10/23 02:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	17.9		1.0	1.0	%			08/17/23 19:55	1

Toxicity Summary

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699322-Upwind

Lab Sample ID: 410-139343-1

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005		Method
						ND = 0		
						TEF	TEQ	
1,2,3,4,6,7,8-HpCDD	10	cn	5.9	0.13	ng/Kg	0.01	0.10	1613B
1,2,3,4,6,7,8-HpCDF	3.2	J B cn	5.9	0.028	ng/Kg	0.01	0.032	1613B
1,2,3,4,7,8-HxCDD	0.23	J I cn	5.9	0.019	ng/Kg	0.1	0.023	1613B
1,2,3,4,7,8-HxCDF	0.42	J B cn	5.9	0.068	ng/Kg	0.1	0.042	1613B
1,2,3,4,7,8,9-HpCDF	0.22	J I B cn	5.9	0.036	ng/Kg	0.01	0.0022	1613B
1,2,3,6,7,8-HxCDD	0.51	J I B cn	5.9	0.020	ng/Kg	0.1	0.051	1613B
1,2,3,6,7,8-HxCDF	0.37	J cn	5.9	0.068	ng/Kg	0.1	0.037	1613B
1,2,3,7,8-PeCDD	0.57	J I B cn	5.9	0.020	ng/Kg	1	0.57	1613B
1,2,3,7,8-PeCDF	0.24	J I B cn	5.9	0.016	ng/Kg	0.03	0.0072	1613B
1,2,3,7,8,9-HxCDD	0.55	J I B cn	5.9	0.018	ng/Kg	0.1	0.055	1613B
1,2,3,7,8,9-HxCDF	0.28	J I B cn	5.9	0.078	ng/Kg	0.1	0.028	1613B
2,3,4,6,7,8-HxCDF	0.43	J I B cn	5.9	0.066	ng/Kg	0.1	0.043	1613B
2,3,4,7,8-PeCDF	0.47	J I B cn	5.9	0.012	ng/Kg	0.3	0.14	1613B
2,3,7,8-TCDD	0.079	J I cn	1.2	0.015	ng/Kg	1	0.079	1613B
2,3,7,8-TCDF	0.31	J cn	1.2	0.031	ng/Kg	0.1	0.031	1613B
OCDD	60	B cn	12	0.068	ng/Kg	0.0003	0.018	1613B
OCDF	6.4	J B cn	12	0.017	ng/Kg	0.0003	0.0019	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005		Method
						ND = 0		
						TEF	TEQ	
Total Toxic Dioxins and Furans					ng/Kg		1.3	TEQ

Client Sample ID: 1699323-Downwind

Lab Sample ID: 410-139343-2

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005		Method
						ND = 0		
						TEF	TEQ	
1,2,3,4,6,7,8-HpCDD	23		6.2	0.11	ng/Kg	0.01	0.23	1613B
1,2,3,4,6,7,8-HpCDF	6.8	B	6.2	0.025	ng/Kg	0.01	0.068	1613B
1,2,3,4,7,8-HxCDD	0.84	J	6.2	0.0095	ng/Kg	0.1	0.084	1613B
1,2,3,4,7,8-HxCDF	0.84	J B	6.2	0.039	ng/Kg	0.1	0.084	1613B
1,2,3,4,7,8,9-HpCDF	0.76	J B	6.2	0.034	ng/Kg	0.01	0.0076	1613B
1,2,3,6,7,8-HxCDD	1.5	J I B	6.2	0.0097	ng/Kg	0.1	0.15	1613B
1,2,3,6,7,8-HxCDF	0.86	J	6.2	0.038	ng/Kg	0.1	0.086	1613B
1,2,3,7,8-PeCDD	0.93	J I B	6.2	0.016	ng/Kg	1	0.93	1613B
1,2,3,7,8-PeCDF	0.67	J B	6.2	0.021	ng/Kg	0.03	0.020	1613B
1,2,3,7,8,9-HxCDD	0.97	J B	6.2	0.0086	ng/Kg	0.1	0.097	1613B
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.042	ng/Kg	0.1	0.042	1613B
2,3,4,6,7,8-HxCDF	0.78	J B	6.2	0.037	ng/Kg	0.1	0.078	1613B
2,3,4,7,8-PeCDF	0.80	J B	6.2	0.018	ng/Kg	0.3	0.24	1613B
2,3,7,8-TCDD	0.23	J I	1.2	0.0074	ng/Kg	1	0.23	1613B
2,3,7,8-TCDF	0.46	J I	1.2	0.014	ng/Kg	0.1	0.046	1613B
OCDD	120	B	12	0.054	ng/Kg	0.0003	0.036	1613B
OCDF	15	B	12	0.019	ng/Kg	0.0003	0.0045	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699323-Downwind (Continued)

Lab Sample ID: 410-139343-2

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005		Method
						TEF	TEQ	
Total Toxic Dioxins and Furans					ng/Kg		2.4	TEQ

Client Sample ID: 1699324-Soil-Dup

Lab Sample ID: 410-139343-3

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005		Method
						TEF	TEQ	
1,2,3,4,6,7,8-HpCDD	12	cn	6.1	0.18	ng/Kg	0.01	0.12	1613B
1,2,3,4,6,7,8-HpCDF	2.9	J B cn	6.1	0.031	ng/Kg	0.01	0.029	1613B
1,2,3,4,7,8-HxCDD	0.42	J I cn	6.1	0.024	ng/Kg	0.1	0.042	1613B
1,2,3,4,7,8-HxCDF	0.64	J I B cn	6.1	0.076	ng/Kg	0.1	0.064	1613B
1,2,3,4,7,8,9-HpCDF	0.29	J B cn	6.1	0.038	ng/Kg	0.01	0.0029	1613B
1,2,3,6,7,8-HxCDD	0.53	J I B cn	6.1	0.023	ng/Kg	0.1	0.053	1613B
1,2,3,6,7,8-HxCDF	0.50	J I cn	6.1	0.078	ng/Kg	0.1	0.050	1613B
1,2,3,7,8-PeCDD	ND	cn	6.1	0.045	ng/Kg	1	0.00	1613B
1,2,3,7,8-PeCDF	0.25	J B cn	6.1	0.047	ng/Kg	0.03	0.0075	1613B
1,2,3,7,8,9-HxCDD	0.39	J I B cn	6.1	0.020	ng/Kg	0.1	0.039	1613B
1,2,3,7,8,9-HxCDF	ND	cn	6.1	0.077	ng/Kg	0.1	0.00	1613B
2,3,4,6,7,8-HxCDF	0.49	J I B cn	6.1	0.070	ng/Kg	0.1	0.049	1613B
2,3,4,7,8-PeCDF	0.45	J I B cn	6.1	0.037	ng/Kg	0.3	0.14	1613B
2,3,7,8-TCDD	ND	cn	1.2	0.033	ng/Kg	1	0.00	1613B
2,3,7,8-TCDF	ND	cn	1.2	0.028	ng/Kg	0.1	0.00	1613B
OCDD	71	B cn	12	0.10	ng/Kg	0.0003	0.021	1613B
OCDF	7.1	J B cn	12	0.014	ng/Kg	0.0003	0.0021	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005		Method
						TEF	TEQ	
Total Toxic Dioxins and Furans					ng/Kg		0.62	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

QC Sample Results

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-428376/1-A
Matrix: Solid
Analysis Batch: 428965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428376

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	ND		5.0	0.041	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,4,6,7,8-HpCDF	0.110	J	5.0	0.0036	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,4,7,8-HxCDD	ND		5.0	0.0075	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,4,7,8-HxCDF	0.108	J I	5.0	0.015	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,4,7,8,9-HpCDF	0.0612	J I	5.0	0.0046	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,6,7,8-HxCDD	0.0814	J I	5.0	0.0075	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,6,7,8-HxCDF	ND		5.0	0.015	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,7,8-PeCDD	0.0371	J I	5.0	0.0050	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,7,8-PeCDF	0.0922	J I	5.0	0.0051	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,7,8,9-HxCDD	0.0923	J I	5.0	0.0063	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
1,2,3,7,8,9-HxCDF	0.0752	J I	5.0	0.017	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
2,3,4,6,7,8-HxCDF	0.0919	J I	5.0	0.014	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
2,3,4,7,8-PeCDF	0.0406	J I	5.0	0.0043	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
2,3,7,8-TCDD	ND		1.0	0.0062	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
2,3,7,8-TCDF	ND		1.0	0.0054	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
OCDD	0.374	J I	10	0.015	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
OCDF	0.143	J I	10	0.0079	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total HpCDD	ND		5.0	0.041	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total HpCDF	0.171	J I	5.0	0.0041	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total HxCDD	0.174	J I	5.0	0.0071	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total HxCDF	0.276	J I	5.0	0.015	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total PeCDD	0.0371	J I	5.0	0.0050	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total PeCDF	0.133	J I	5.0	0.0047	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total TCDD	ND		1.0	0.0062	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Total TCDF	ND		1.0	0.0054	ng/Kg		10/06/23 14:02	10/09/23 13:24	1
Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
13C-1,2,3,4,6,7,8-HpCDD	77		23 - 140	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,4,7,8-HxCDD	80		32 - 141	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,4,7,8-HxCDF	85		26 - 152	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,4,7,8,9-HpCDF	87		26 - 138	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,6,7,8-HxCDD	82		28 - 130	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,7,8-PeCDD	77		25 - 181	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,7,8-PeCDF	77		24 - 185	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,7,8,9-HxCDD	91		28 - 130	10/06/23 14:02	10/09/23 13:24	1			
13C-1,2,3,7,8,9-HxCDF	81		29 - 147	10/06/23 14:02	10/09/23 13:24	1			
13C-2,3,4,6,7,8-HxCDF	88		28 - 136	10/06/23 14:02	10/09/23 13:24	1			
13C-2,3,4,7,8-PeCDF	78		21 - 178	10/06/23 14:02	10/09/23 13:24	1			
13C-2,3,7,8-TCDD	80		25 - 164	10/06/23 14:02	10/09/23 13:24	1			
13C-2,3,7,8-TCDF	78		24 - 169	10/06/23 14:02	10/09/23 13:24	1			
13C-OCDD	84		17 - 157	10/06/23 14:02	10/09/23 13:24	1			
13C-OCDF	83		17 - 157	10/06/23 14:02	10/09/23 13:24	1			

QC Sample Results

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-428376/2-A

Matrix: Solid

Analysis Batch: 428965

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 428376

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				
1,2,3,4,6,7,8-HpCDD	100	95.7		ng/Kg		96	70 - 140
1,2,3,4,6,7,8-HpCDF	100	94.1		ng/Kg		94	82 - 122
1,2,3,4,7,8-HxCDD	100	99.8		ng/Kg		100	70 - 164
1,2,3,4,7,8-HxCDF	100	101		ng/Kg		101	72 - 134
1,2,3,4,7,8,9-HpCDF	100	87.1		ng/Kg		87	78 - 138
1,2,3,6,7,8-HxCDD	100	102		ng/Kg		102	76 - 134
1,2,3,6,7,8-HxCDF	100	99.2		ng/Kg		99	84 - 130
1,2,3,7,8-PeCDD	100	103		ng/Kg		103	70 - 142
1,2,3,7,8-PeCDF	100	97.8		ng/Kg		98	80 - 134
1,2,3,7,8,9-HxCDD	100	102		ng/Kg		102	64 - 162
1,2,3,7,8,9-HxCDF	100	95.8		ng/Kg		96	78 - 130
2,3,4,6,7,8-HxCDF	100	94.9		ng/Kg		95	70 - 156
2,3,4,7,8-PeCDF	100	98.3		ng/Kg		98	68 - 160
2,3,7,8-TCDD	20.0	19.4		ng/Kg		97	67 - 158
2,3,7,8-TCDF	20.0	20.0		ng/Kg		100	75 - 158
OCDD	200	190		ng/Kg		95	78 - 144
OCDF	200	201		ng/Kg		101	63 - 170

Isotope Dilution	LCS	LCS	Limits
	%Recovery	Qualifier	
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	79		21 - 158
13C-1,2,3,4,7,8-HxCDD	81		21 - 193
13C-1,2,3,4,7,8-HxCDF	88		19 - 202
13C-1,2,3,4,7,8,9-HpCDF	86		20 - 186
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,6,7,8-HxCDF	87		21 - 159
13C-1,2,3,7,8-PeCDD	79		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-1,2,3,7,8,9-HxCDD	89		25 - 163
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-2,3,4,6,7,8-HxCDF	86		22 - 176
13C-2,3,4,7,8-PeCDF	83		13 - 328
13C-2,3,7,8-TCDD	90		20 - 175
13C-2,3,7,8-TCDF	81		22 - 152
13C-OCDD	80		13 - 199
13C-OCDF	78		13 - 199

QC Association Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Specialty Organics

Prep Batch: 428376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-139343-1	1699322-Upwind	Total/NA	Solid	1613B	
410-139343-2	1699323-Downwind	Total/NA	Solid	1613B	
410-139343-3	1699324-Soil-Dup	Total/NA	Solid	1613B	
MB 410-428376/1-A	Method Blank	Total/NA	Solid	1613B	
LCS 410-428376/2-A	Lab Control Sample	Total/NA	Solid	1613B	

Analysis Batch: 428965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-139343-1	1699322-Upwind	Total/NA	Solid	1613B	428376
410-139343-2	1699323-Downwind	Total/NA	Solid	1613B	428376
410-139343-3	1699324-Soil-Dup	Total/NA	Solid	1613B	428376
MB 410-428376/1-A	Method Blank	Total/NA	Solid	1613B	428376
LCS 410-428376/2-A	Lab Control Sample	Total/NA	Solid	1613B	428376

General Chemistry

Analysis Batch: 409675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-139343-1	1699322-Upwind	Total/NA	Solid	Moisture	
410-139343-2	1699323-Downwind	Total/NA	Solid	Moisture	
410-139343-3	1699324-Soil-Dup	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Client Sample ID: 1699322-Upwind

Lab Sample ID: 410-139343-1

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	409675	S9WT	ELLE	08/17/23 19:55

Client Sample ID: 1699322-Upwind

Lab Sample ID: 410-139343-1

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1613B			428376	HZ2S	ELLE	10/06/23 14:02
Total/NA	Analysis	1613B		1	428965	AQ46	ELLE	10/10/23 00:33

Client Sample ID: 1699323-Downwind

Lab Sample ID: 410-139343-2

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	409675	S9WT	ELLE	08/17/23 19:55

Client Sample ID: 1699323-Downwind

Lab Sample ID: 410-139343-2

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 78.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1613B			428376	HZ2S	ELLE	10/06/23 14:02
Total/NA	Analysis	1613B		1	428965	AQ46	ELLE	10/10/23 09:48

Client Sample ID: 1699324-Soil-Dup

Lab Sample ID: 410-139343-3

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	409675	S9WT	ELLE	08/17/23 19:55

Client Sample ID: 1699324-Soil-Dup

Lab Sample ID: 410-139343-3

Date Collected: 08/14/23 00:00

Matrix: Solid

Date Received: 08/17/23 09:25

Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1613B			428376	HZ2S	ELLE	10/06/23 14:02
Total/NA	Analysis	1613B		1	428965	AQ46	ELLE	10/10/23 02:14

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (23-140)	HpCDF (28-143)	HxCDD (32-141)	HxCDF (26-152)	HpCDF2 (26-138)	HxDD (28-130)	HxDF (26-123)	PeCDD (25-181)
410-139343-1	1699322-Upwind	56 cn	61 cn	67 cn	75 cn	64 cn	65 cn	77 cn	65 cn
410-139343-2	1699323-Downwind	70	82	78	87	81	75	86	63
410-139343-3	1699324-Soil-Dup	40 cn	42 cn	38 cn	38 cn	45 cn	37 cn	37 cn	25 cn
MB 410-428376/1-A	Method Blank	77	82	80	85	87	82	86	77

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (24-185)	13CHxCD (28-130)	HxCF (29-147)	13CHxCF (28-136)	PeCF (21-178)	TCDD (25-164)	TCDF (24-169)	OCDD (17-157)
410-139343-1	1699322-Upwind	59 cn	71 cn	70 cn	74 cn	69 cn	78 cn	74 cn	54 cn
410-139343-2	1699323-Downwind	71	84	83	84	72	84	83	76
410-139343-3	1699324-Soil-Dup	25 cn	41 cn	40 cn	40 cn	28 cn	22 *5- cn	20 *5- cn	45 cn
MB 410-428376/1-A	Method Blank	77	91	81	88	78	80	78	84

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OCDF (17-157)
410-139343-1	1699322-Upwind	55 cn
410-139343-2	1699323-Downwind	74
410-139343-3	1699324-Soil-Dup	46 cn
MB 410-428376/1-A	Method Blank	83

Surrogate Legend

- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- PeCF = 13C-2,3,4,7,8-PeCDF
- TCDD = 13C-2,3,7,8-TCDD
- TCDF = 13C-2,3,7,8-TCDF
- OCDD = 13C-OCDD
- OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (26-166)	HpCDF (21-158)	HxCDD (21-193)	HxCDF (19-202)	HpCDF2 (20-186)	HxDD (25-163)	HxDF (21-159)	PeCDD (21-227)
LCS 410-428376/2-A	Lab Control Sample	73	79	81	88	86	80	87	79

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (21-192)	13CHxCD (25-163)	HxCF (17-205)	13CHxCF (22-176)	PeCF (13-328)	TCDD (20-175)	TCDF (22-152)	OCDD (13-199)
LCS 410-428376/2-A	Lab Control Sample	82	89	85	86	83	90	81	80

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (13-199)
LCS 410-428376/2-A	Lab Control Sample	78

Surrogate Legend

- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- PeCF = 13C-2,3,4,7,8-PeCDF
- TCDD = 13C-2,3,7,8-TCDD
- TCDF = 13C-2,3,7,8-TCDF
- OCDD = 13C-OCDD
- OCDF = 13C-OCDF

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
 Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-24
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-24
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-24
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-24
Massachusetts	State	M-PA009	06-30-24
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-24
North Carolina (DW)	State	42705	07-31-24
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	9804	08-31-23 *
Oregon	NELAP	PA200001	09-11-24
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24
West Virginia (DW)	State	9906 C	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12



410-139343 Chain of Custody

CLIENT INFORMATION

Company: Eurofins OTTAWA
 Contact: Rebecca Rosky
 Address: _____
 Telephone: _____ Cell: _____

INFORMATION: YES NO

Company: _____
 Contact: _____ #1: _____
 Address: _____ Email: #2: _____
 Telephone: _____ PO #: _____

TURN-AROUND TIME (Business Days)

1 Day* (100%) 2 Day** (50%) 3-5 Days (25%) 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
 *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.
 **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

Sanitary Sewer, City: _____
 Storm Sewer, City: _____
 ODWSOG (Use DW CoC if analyzing drinking water)
 PWQO
 O.Reg 347
 Other: _____

O. Reg 153
 The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only
 Yes No

O. Reg 406 Excess Soils
 Table # _____ Full depth/Strat/Ceiling/mSPLP Leachate
 Type: Com-Ind / Res-Park / Agri / All Other
 Category: Surface / Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).

Sample ID		Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters								Dioxins + Furans + TEQ	RN# (Lab Use Only)
Field Filtered ->					PHCE1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only			
1699322	Upwind	14/8/23	Soil	1										
1699323	Downwind	↓	↓	1										
1699324	Soil-Dup	↓	↓	1										

PRINT **SIGN** **DATE/TIME** **TEMP (°C)** **COMMENTS:**

Sampled By: _____
 Relinquished By: _____
 Received By: Conrad Burkholder

Signature: [Handwritten Signature] Date/Time: 16/8/23 10:00 AM Temp: 8°

CUSTODY SEAL: YES NO Ice packs submit Yes No

09:25
8/17/23
③ CP
17.8/17.9

Login Sample Receipt Checklist

Client: Eurofins Environment Testing Canada

Job Number: 410-139343-1

Login Number: 139343

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable, where thermal pres is required ($\leq 6^{\circ}\text{C}$, not frozen).	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
WV: Container Temp acceptable, where thermal pres is required ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Definitions/Glossary

Client: Eurofins Environment Testing Canada
Project/Site: 1699322-23010983.10(DYEC)-3000.342

Job ID: 410-139343-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count