



**CN Milton Logistics Hub:
Country Foods Follow-Up Program
– 2022 Report**

Final Report

March 15, 2022

Prepared for:
Canadian National Railway Company
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Project Number:
160960844

CN Milton Logistics Hub: Country Foods Follow-Up Program – 2022 Report Limitations and Sign-off

March 15, 2022

Limitations and Sign-off

The conclusions in the Report titled CN Milton Logistics Hub: Country Foods Follow-Up Program – 2022 Report Results are Stantec’s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

Stantec has assumed all information received from Canadian National Railway Company (the “Client”) and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec’s contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec’s discretion.

<Original signed by>

Prepared by _____
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Loren Knopper, Ph.D.
Senior Principal

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Reviewed by _____
(signature)

Chris Powell, M.A.
Senior Environmental Planner, Principal

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Acronyms / Abbreviations

B(a)P TPE	benzo(a)pyrene total potency equivalents
CCME	Canadian Council of Ministers of the Environment
CEAA	Canadian Environmental Assessment Act
CN	Canadian National Railway Company
IAAC	Impact Assessment Agency of Canada
PEF	Potency equivalence factor
PAH	Polycyclic Aromatic Hydrocarbon
PDA	Project Development Area



1 Introduction

Stantec Consulting Ltd. (Stantec) has been retained by the Canadian National Railway Company (CN) to conduct a Country Foods follow-up program for the Milton Logistics Hub (the Project) in the Town of Milton, within the Regional Municipality of Halton (Halton Region), Ontario.

This program has been developed to comply with Condition 9.1 of the Decision Statement and has been developed in consultation with Health Canada. Consultation with Health Canada occurred on August 17, 2020 and March 15, 2021 and their comments related to consultation with the local community are considered and addressed in this document.

This report documents the results of the Country Foods Follow-up Program thus far.

1.1 Program Design Considerations

This follow-up program (FUP) has been developed to comply with the conditions of approval in the Minister of the Environment and Climate Change Canada’s (ECCC) Decision Statement issued January 21, 2021 and amended July 16, 2022. As described in the Country Foods Follow-up Program (Stantec, 2022), the follow-up program for country food has been developed in accordance with Condition 9.1 of the Decision Statement and consists of soil sampling and analysis of polycyclic aromatic hydrocarbons (PAHs) from plots located upwind and downwind of the Project Development Area (PDA) during the pre-construction, construction and operational phases of the Project.

Through the established community liaison communication process, any concerns raised by the local community as related to county foods will be reviewed and addressed through the adaptive management process.

During the environmental assessment (EA) of the Project, 14 PAHs were associated with diesel engines, and of these, eight (as identified in response to IR3.11) are defined by Health Canada as carcinogenic (**Table 1**). Health Canada directs that “Exposures to mixtures of carcinogenic PAHs should be assessed according to the potency equivalence factor (PEF) scheme...in which carcinogenic PAHs are adjusted to their carcinogenic potency relative to benzo[a]pyrene, and the potency equivalents are then summed”.

Table 1: PAHs to be analyzed in soil samples

fluoranthene	benz(a)anthracene	benzo(a)pyrene	benzo(b)fluoranthene
benzo(g,h,i)perylene	benzo(k)fluoranthene	chrysene	phenanthrene



1.2 Activities Undertaking During Reporting Year

Project construction commenced on January 17, 2022. Initially, CN undertook site preparation activities (i.e., surveying, delineating construction site boundaries and installing site fencing), installed monitoring equipment, cleared and grubbed vegetated areas, constructed access roads and laydown areas and established the construction site offices.

In the second quarter of the year (Q2), site activities included excavation of stormwater management (SWM) pond 2, removal of CN-owned buildings, initiation of grading activities for offline portions of the Indian Creek and Tributary A re-alignments, and work on access roads, including the installation of a temporary bridge over Indian Creek.

In the third quarter of the year (Q3), following the end of the fisheries in-water work restriction period (March 15 to June 30), CN commenced realignment of the downstream, offline, portion of the Tributary A realignment channel where it occurred within the existing agricultural pond, and continued with construction of the associated Tributary A habitat structures and offline portions of culverts 2A and 2B. Other activities in Q3 included site grading activities, continued construction of SWM pond 2 (including the outlet structure), initiation of the excavation of SWM pond 1, continued offline construction of the Indian Creek realignment channel and associated habitat structures and construction of an interim noise berm along Lower Base Line and the eastern property boundary near lay-down area 1. Site preparation work for the Sun-Canadian pipeline reconfiguration commenced in early September, with initial drilling beneath the mainline commencing on September 9, 2022.

Finally, in the fourth quarter of the year (Q4), site activities included site grading and diversion channels work for the mainline track realignment, completion of SWM pond 2 and associated outlet structures, completion of the offline Tributary A realignment channel and associated habitat structures (including portions of culverts 2A and 2B). Work during this quarter was also concentrated in the Indian Creek area, including continued construction of the offline channel, habitat features, and associated planting / stabilization measures, as well as stabilizing the Indian Creek slope near the red barn and installation of in-stream and riparian habitat structures. The offline portion of the realigned Tributary A was commissioned, including removal of the existing culverts and failed berm structure associated with the former agricultural pond, downstream connection to the existing channel, and completion of culvert 2B and portions of culvert 2A in preparation for the scheduled cutover that saw flows redirected into the realigned portion of Tributary A on December 22, 2022. The SunCanadian pipeline work was also completed and demobilized in Q4.



2 Methods

March 15, 2022

Stantec implemented soil quality monitoring in 2020 (pre-construction) and 2022 (during construction) in accordance with the Country Food FUP prepared to address Condition 9.1. Soil samples were collected from two locations (3 samples per station) near the middle or end of the growing season (i.e., October / November). Samples were collected in the top 30 cm of soil, since this is the growing and rooting zone of most garden produce, at six locations in the project development area (PDA): three from the air sampling plot on First Line (FL-SS-01, FL-SS-02, FL-SS-03) and three from the air sampling plot on Tremaine (T-SS-01, T-SS-02, T-SS-03). Soil collection followed Standard Operation Procedures for surface soil sampling as well as CCME soil sampling operating procedures.

2 Methods

Soil samples were collected on November 11, 2020 (pre-construction) and October 27, 2022 (during construction) from within the 50m by 50m designated plots of the upwind and downwind air monitoring station locations identified in the Air Quality Monitoring and Adaptive Management Plan (Stantec, 2022). **Figure 1 (Appendix A)** identifies the location of these sampling stations relative to the two air quality stations.

Samples were collected in accordance with the Standard Operation Procedures for surface soil sampling as well as Canadian Council of Ministers of the Environment (CCME) soil sampling operating procedures (CCME 2016). Samples were collected in the top 30 cm of soil, since this is the growing and rooting zone of most garden produce. Soil samples were sent to an analytical laboratory for analysis of the individual carcinogenic PAHs identified in **Table 1** above. Concentrations of the PAHs were multiplied by their respective PEF and a B(a)P TPE calculated for each soil sample. This B(a)P TPE was compared to the CCME soil quality guideline of 5.3 µg/g.

Pre-construction soil samples were collected from these same locations in November 2020 and were similarly analyzed for the individual carcinogenic PAHs identified in **Table 1**.

Photos taken during sampling in 2020 and 2022 are provided in **Appendix B**.



3 Results

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3 Results

PAH data from 2020 and 2022 are provided in Appendix C. The maximum concentration of the eight PAHs identified in **Table 1**, their respective PEFs, and the calculated B(a)P TPE for each soil sample is provided below in **Tables 2 through 5**.

Table 2: B(a)P TPE for Sample Location on Tremaine Road – Pre-Construction – 2020

Sample ID	Reporting Limit	Maximum Concentration	PEF	B(a)P TPE
Units	µg/g	µg/g		µg/g
Benzo(a)anthracene	0.005	0.0096	0.1	0.00096
Benzo(a)pyrene	0.005	0.0110	1	0.01100
Benzo(b/j)fluoranthene	0.005	0.0190	0.1	0.00190
Benzo(ghi)perylene	0.005	0.0090	0.01	0.00009
Benzo(k)fluoranthene	0.005	0.0056	0.1	0.00056
Chrysene	0.005	0.0100	0.01	0.00010
Fluoranthene	0.005	0.0280	0.001	0.00003
Phenanthrene	0.005	0.0110	0.001	0.00001
Total B(a)P TPE				0.015



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Table 3: B(a)P TPE for Sample Location on First Line – Pre-Construction – 2020

Sample ID	Reporting Limit	Maximum Concentration	PEF	B(a)P TPE
Units	µg/g	µg/g		µg/g
Benzo(a)anthracene	0.005	<0.005	0.1	<0.0005
Benzo(a)pyrene	0.005	<0.005	1	<0.005
Benzo(b/j)fluoranthene	0.005	0.0100	0.1	0.001
Benzo(ghi)perylene	0.005	0.0051	0.01	0.000051
Benzo(k)fluoranthene	0.005	<0.005	0.1	<0.0005
Chrysene	0.005	0.0058	0.01	0.000058
Fluoranthene	0.005	0.0110	0.001	0.000011
Phenanthrene	0.005	<0.005	0.001	<0.000005
Total B(a)P TPE				0.0071

Table 4: PEFs and B(a)P TPE for Sample Location on Tremaine Road – During Construction – 2022

Sample ID	Reporting Limit	Maximum Concentration	PEF	B(a)P TPE
Units	µg/g	µg/g		µg/g
Benzo(a)anthracene	0.005	<0.005	0.1	<0.0005
Benzo(a)pyrene	0.005	<0.005	1	<0.005
Benzo(b/j)fluoranthene	0.005	0.0076	0.1	0.00076
Benzo(g,h,i)perylene	0.005	<0.005	0.01	<0.00005
Benzo(k)fluoranthene	0.005	<0.005	0.1	<0.0005
Chrysene	0.005	<0.005	0.01	<0.00005
Fluoranthene	0.005	0.0089	0.001	0.0000089
Phenanthrene	0.005	<0.005	0.001	<0.000005
Total B(a)P TPE				<0.0069



CN Milton Logistics Hub: Country Foods Follow-Up Program – 2022 Report

3 Results

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Table 5: PEFs and B(a)P TPE for Sample Location on First Line – During Construction – 2022

Sample ID	Reporting Limit	Maximum Concentration	PEF	B(a)P TPE
Units	µg/g	µg/g		µg/g
Benzo(a)anthracene	0.005	<0.005	0.1	<0.0005
Benzo(a)pyrene	0.005	0.0067	1	0.0067
Benzo(b/j)fluoranthene	0.005	0.012	0.1	0.0012
Benzo(g,h,i)perylene	0.005	0.0067	0.01	0.000067
Benzo(k)fluoranthene	0.005	<0.005	0.1	<0.0005
Chrysene	0.005	<0.005	0.01	<0.00005
Fluoranthene	0.005	0.013	0.001	0.000013
Phenanthrene	0.005	<0.005	0.001	<0.000005
Total B(a)P TPE				0.0090

The B(a)P TPE range from <0.0069 µg/g to 0.015 µg/g. These values are substantially less than the CCME soil quality guideline of 5.3 µg/g.



4 Discussion

4.1 Conformity with Assessment Predictions

As noted in Appendix E.7 of the EIS, the health risks associated with exposure to PAHs were assessed in terms of benzo(a) pyrene (and specifically, B(a)P TPE in the response to IR3.11). In CN's response to IR8.3, baseline concentration of B(a)P TPE in soil was assumed to be 0.05 µg/g (baseline concentration reflects background concentration of B(a)P for agricultural soils in Ontario). The 2020 (pre-construction) B(a)P TPE in soil from the two sampling locations were less than 0.05 µg/g (0.015 µg/g and 0.0071 µg/g), meaning risk predicted in the EA based on baseline PAHs, while considered negligible, was overestimated.

The 2022 (construction) data represents baseline plus deposition from construction activities, as well as other ambient sources. The 2022 data (<0.0069 and 0.0090 µg/g B(a)P TPE) are also well below the CCME B(a)P TPE guideline of 5.3 µg/g used as the guideline in IR8.3.

4.2 Effectiveness of Mitigation Measures

While there were no specific country food mitigation measures, the mitigation measures employed during construction activities focused on reducing emissions, and subsequent deposition of PAH.

4.3 Adaptive Management

As noted in the Country Food FUP prepared to address Condition 9.1, in the event that the B(a)P TPE in soil is greater than the CCME threshold, then adaptive management measures would be informed through consultation with Health Canada. Results thus far indicate that adaptive management measures are not required (i.e., the B(a)P TPE in soil is less than the CCME threshold).



5 Summary and Conclusions

This report summarizes the results of the Country Food follow-up program for 2022, which represents year 1 of the construction phase of the Milton Logistics Hub.

Stantec implemented soil quality monitoring in 2020 (pre-construction) and 2022 (construction) in accordance with the Country Food FUP prepared to address Condition 9.1 of the Decision Statement. Soil samples were collected from two locations (3 samples per station) near the middle or end of the growing season (i.e., October / November). Samples were collected in the top 30 cm of soil, since this is the growing and rooting zone of most garden produce, at six locations in the project development area (PDA): three from the air sampling plot on First Line (FL-SS-01, FL-SS-02, FL-SS-03) and three from the air sampling plot on Tremaine (T-SS-01, T-SS-02, T-SS-03).

Samples were analyzed for PAHs, and a B(a)P TPE was calculated and compared to the CCME PAH soil quality guideline. During construction, the B(a)P TPE range from <0.0069 µg/g to 0.0090 µg/g, which represents a nominal change relative to pre-construction levels. These values are less than the CCME soil quality guideline of 5.3 µg/g. Results thus far indicate that adaptive management measures are not required.

A copy of this report will be provided to the Impact Assessment Agency of Canada (IAAC) in accordance with Condition 9.1, as well as to Health Canada per the commitments in the Country Food Follow-up Program (Stantec, 2022). In addition, this report will be posted to CN's project website (www.cn.ca/en/about-cn/milton-logistics-hub/) and a summary will be included in CN's 2022 Annual Report.



Appendices



CN Milton Logistics Hub: Country Foods Follow-Up Program – 2022 Report

Appendix A Photolog

March 15, 2022

Appendix A Photolog





Photo 1: Aerial Photograph of the CN Milton Logistics Hub Program Work Area



Photo 2: Aerial Photograph of the three pre-construction soil sampling locations located at 5285 First Line



Photo 3: 5285 First Line, Milton – Pre-Construction Soil Sampling Location FL-SS-01



Photo 4: 5285 First Line, Milton – Pre-Construction Soil Sampling Location FL-SS-02



Photo 5: 5285 First Line, Milton – Pre-Construction Soil Sampling Location FL-SS-03

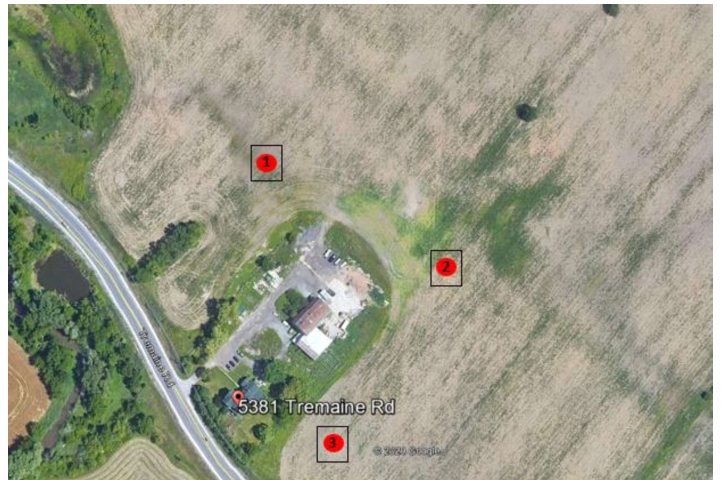


Photo 6: Aerial Photograph of the three pre-construction soil sampling locations located at 5381 Tremaine Road





Photo 7: 5381 Tremaine Road, Milton - Pre-Construction Soil Sampling Location T-SS-01



Photo 8: 5381 Tremaine Road, Milton - Pre-Construction Soil Sampling Location T-SS-02

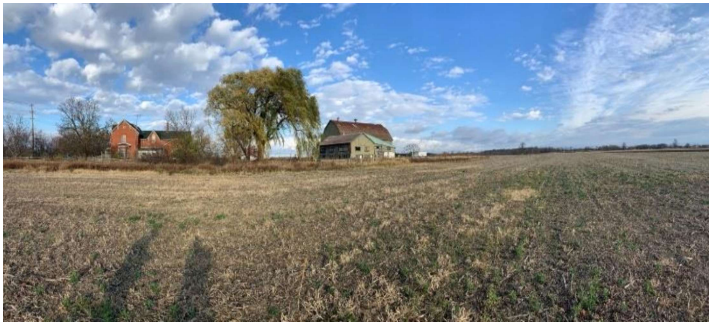


Photo 9: 5381 Tremaine Road, Milton - Pre-Construction Soil Sampling Location T-SS-03



Photo 1: Aerial Photograph of the CN Milton Logistics Hub Program Work Area



Photo 2: 5285 First Line, Milton – Air Quality Monitoring Station



Photo 3: 5285 First Line, Milton – Parking Area



Photo 4: 5285 First Line, Milton – Construction Soil Sampling Location FL-SS-01 – Located behind the Air Monitoring Station



Photo 5: 5285 First Line, Milton – Construction Soil Sampling Locations FL-SS-02 and FL-SS-03 - Located in the Farmers Field



Photo 6: 5249 Lower Base Line, Milton – Contractor Trailer Check-in and Washroom Location





Photo 7: 5381 Tremaine Road, Milton – Parking Area



Photo 8: 5381 Tremaine Road, Milton - Construction Soil Sampling Location T-SS-01 – Located in Construction Area at Bottom of Pond



Photo 9: 5381 Tremaine Road, Milton - Construction Soil Sampling Location T-SS-02 – Located in Construction Area beside Orange Fencing



Photo 10: 5381 Tremaine Road, Milton - Construction Soil Sampling Location T-SS-03 – Located Outside of Construction Area



Appendix B Figures



V:\0109\active\62963844\drawing\MXD\Atmospheric\A\Report\Figures\A\Fig16\62963844_Fig16_Air_Monitoring_Loc_C_and_O.mxd
 Revised: 2021-10-08 By: dhanvey



Legend

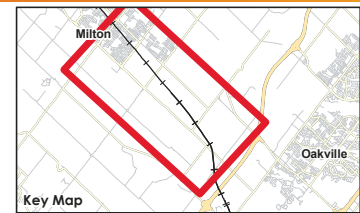
○ Potential Air Monitoring Locations During Construction and Operations

Project Components

Project Development Area
 Local Assessment Area (LAA)
 Existing Single Track Mainline

Existing Double Track Mainline
 Double Track - Mainline
 Project Component
 CN-Owned Property
 SWM Pond
● Address Point

- Notes**
- Coordinate System: NAD 1983 UTM Zone 17N
 - Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2015. Site layout: July 10, 2015.
 - Orthimagery © First Base Solutions, 2015. Imagery taken in 2019.
 - The windrose graphic is shown for convenience, a full depiction of the windrose is included as Figure 3 of Appendix A.



Client/Project
 Canadian National Railway
 Milton Logistics Hub

Figure No.
1

Title

Country Food Monitoring Locations

Appendix C Tables





Your Project #: 160960844.844.200
 Your C.O.C. #: 800568-01-01

Attention: Loren Knopper

Stantec Consulting Ltd
 835 Paramount Drive, Suite 200
 Stoney Creek, ON
 CANADA L8J 0B4

Report Date: 2020/11/19
 Report #: R6417397
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: COT9631

Received: 2020/11/11, 11:17

Sample Matrix: Soil
 # Samples Received: 8

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
B[a]P Total Potency Equivalent	8	N/A	2020/11/18		CCME
CCME Index of Additive Cancer Risk	8	2020/11/13	2020/11/18		CCME PHC-CWS
Moisture	7	N/A	2020/11/14	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2020/11/16	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	2020/11/17	2020/11/17	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	6	2020/11/17	2020/11/18	CAM SOP-00318	EPA 8270D m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: 160960844.844.200
Your C.O.C. #: 800568-01-01

Attention: Loren Knopper

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2020/11/19
Report #: R6417397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: COT9631

Received: 2020/11/11, 11:17

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bvlabs.com
Phone# (905)817-5752

=====
This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

CCME PAHS (LOW LEVEL) IN SOIL

BV Labs ID		ODF351		ODF352		ODF352			
Sampling Date		2020/11/11 09:25		2020/11/11 09:30		2020/11/11 09:30			
COC Number		800568-01-01		800568-01-01		800568-01-01			
	UNITS	TREMAINE-SS-01	QC Batch	TREMAINE-SS-02	RDL	QC Batch	TREMAINE-SS-02 Lab-Dup	RDL	QC Batch

Inorganics

Moisture	%	23	7057841	17	1.0	7057170			
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Calculated Parameters

Benzo(a)pyrene Total Potency Equiv.	ug/g	<0.01	7055437	<0.01	0.01	7055437			
Index of Additive Cancer Risk -IACR	N/A	<0.1	7055438	<0.1	0.1	7055438			

Polyaromatic Hydrocarbons

Benzo(e)pyrene	ug/g	<0.0050	7059757	0.0069	0.0050	7059757	0.0090	0.0050	7059757
Acenaphthene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Acenaphthylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Benzo(a)anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Benzo(a)pyrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	0.0058	0.0050	7059757
Benzo(b/j)fluoranthene	ug/g	0.0061	7059757	0.0095	0.0050	7059757	0.012	0.0050	7059757
Benzo(g,h,i)perylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	0.0058	0.0050	7059757
Benzo(k)fluoranthene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Chrysene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	0.0061	0.0050	7059757
Dibenzo(a,h)anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Fluoranthene	ug/g	0.0054	7059757	0.0095	0.0050	7059757	0.014	0.0050	7059757
Fluorene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
1-Methylnaphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
2-Methylnaphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Naphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757
Phenanthrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	0.0062	0.0050	7059757
Pyrene	ug/g	<0.0050	7059757	0.0075	0.0050	7059757	0.011	0.0050	7059757
Perylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757	<0.0050	0.0050	7059757

Surrogate Recovery (%)

D10-Anthracene	%	101	7059757	99		7059757	100		7059757
D14-Terphenyl (FS)	%	112	7059757	109		7059757	114		7059757
D8-Acenaphthylene	%	91	7059757	86		7059757	92		7059757

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

CCME PAHS (LOW LEVEL) IN SOIL

BV Labs ID		ODF353	ODF354	ODF355	ODF356		
Sampling Date		2020/11/11 09:35	2020/11/11	2020/11/11 10:15	2020/11/11 10:20		
COC Number		800568-01-01	800568-01-01	800568-01-01	800568-01-01		
	UNITS	TREMAINE-SS-03	TREMAINE-QC-01	FIRST-SS-01	FIRST-SS-02	RDL	QC Batch
Inorganics							
Moisture	%	18	18	20	18	1.0	7057170
Calculated Parameters							
Benzo(a)pyrene Total Potency Equiv.	ug/g	0.02	0.02	<0.01	<0.01	0.01	7055437
Index of Additive Cancer Risk -IACR	N/A	0.2	0.2	<0.1	<0.1	0.1	7055438
Polyaromatic Hydrocarbons							
Benzo(e)pyrene	ug/g	0.012	0.011	0.0099	0.0075	0.0050	7059757
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Benzo(a)anthracene	ug/g	0.0083	0.0096	<0.0050	<0.0050	0.0050	7059757
Benzo(a)pyrene	ug/g	0.010	0.011	<0.0050	<0.0050	0.0050	7059757
Benzo(b/j)fluoranthene	ug/g	0.019	0.019	0.010	0.0085	0.0050	7059757
Benzo(g,h,i)perylene	ug/g	0.0089	0.0090	0.0051	<0.0050	0.0050	7059757
Benzo(k)fluoranthene	ug/g	<0.0050	0.0056	<0.0050	<0.0050	0.0050	7059757
Chrysene	ug/g	0.010	0.010	0.0058	<0.0050	0.0050	7059757
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Fluoranthene	ug/g	0.025	0.028	0.011	0.0090	0.0050	7059757
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Indeno(1,2,3-cd)pyrene	ug/g	0.0086	0.0087	<0.0050	<0.0050	0.0050	7059757
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Phenanthrene	ug/g	0.010	0.011	<0.0050	<0.0050	0.0050	7059757
Pyrene	ug/g	0.019	0.021	0.0082	0.0072	0.0050	7059757
Perylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7059757
Surrogate Recovery (%)							
D10-Anthracene	%	93	104	102	100		7059757
D14-Terphenyl (FS)	%	106	116	116	114		7059757
D8-Acenaphthylene	%	93	99	98	96		7059757
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

CCME PAHS (LOW LEVEL) IN SOIL

BV Labs ID		ODF357		ODF358		
Sampling Date		2020/11/11 10:25		2020/11/11		
COC Number		800568-01-01		800568-01-01		
	UNITS	FIRST-SS-03	QC Batch	FIRST-QC-01	RDL	QC Batch
Inorganics						
Moisture	%	25	7057134	20	1.0	7057170
Calculated Parameters						
Benzo(a)pyrene Total Potency Equiv.	ug/g	<0.01	7055437	<0.01	0.01	7055437
Index of Additive Cancer Risk -IACR	N/A	<0.1	7055438	<0.1	0.1	7055438
Polyaromatic Hydrocarbons						
Benzo(e)pyrene	ug/g	0.0066	7059757	0.0069	0.0050	7059757
Acenaphthene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Acenaphthylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Benzo(a)anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Benzo(a)pyrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Benzo(b/j)fluoranthene	ug/g	0.0081	7059757	0.0086	0.0050	7059757
Benzo(g,h,i)perylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Benzo(k)fluoranthene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Chrysene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Dibenzo(a,h)anthracene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Fluoranthene	ug/g	0.0085	7059757	0.0095	0.0050	7059757
Fluorene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
1-Methylnaphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
2-Methylnaphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Naphthalene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Phenanthrene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Pyrene	ug/g	0.0068	7059757	0.0074	0.0050	7059757
Perylene	ug/g	<0.0050	7059757	<0.0050	0.0050	7059757
Surrogate Recovery (%)						
D10-Anthracene	%	102	7059757	92		7059757
D14-Terphenyl (FS)	%	113	7059757	102		7059757
D8-Acenaphthylene	%	97	7059757	89		7059757
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

TEST SUMMARY

BV Labs ID: ODF351
Sample ID: TREMAINE-SS-01
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057841	N/A	2020/11/16	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/17	Mitesh Raj

BV Labs ID: ODF352
Sample ID: TREMAINE-SS-02
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/17	Mitesh Raj

BV Labs ID: ODF352 Dup
Sample ID: TREMAINE-SS-02
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/17	Mitesh Raj

BV Labs ID: ODF353
Sample ID: TREMAINE-SS-03
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj

BV Labs ID: ODF354
Sample ID: TREMAINE-QC-01
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj



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VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

TEST SUMMARY

BV Labs ID: ODF355
Sample ID: FIRST-SS-01
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj

BV Labs ID: ODF356
Sample ID: FIRST-SS-02
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj

BV Labs ID: ODF357
Sample ID: FIRST-SS-03
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057134	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj

BV Labs ID: ODF358
Sample ID: FIRST-QC-01
Matrix: Soil

Collected: 2020/11/11
Shipped:
Received: 2020/11/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
B[a]P Total Potency Equivalent	CALC	7055437	N/A	2020/11/18	Automated Statchk
CCME Index of Additive Cancer Risk	CALC	7055438	2020/11/18	2020/11/18	Automated Statchk
Moisture	BAL	7057170	N/A	2020/11/14	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7059757	2020/11/17	2020/11/18	Mitesh Raj



BUREAU
VERITAS

BV Labs Job #: COT9631

Report Date: 2020/11/19

Stantec Consulting Ltd

Client Project #: 160960844.844.200

Sampler Initials: JH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.0°C
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Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
	7057134	KJP	RPD	Moisture	2020/11/14	1.3		%	20
	7057170	KJP	RPD	Moisture	2020/11/14	1.6		%	20
	7057841	MIS	RPD	Moisture	2020/11/16	4.8		%	20
	7059757	RAJ	Matrix Spike [ODF352-01]	D10-Anthracene	2020/11/17		99	%	50 - 130
				D14-Terphenyl (FS)	2020/11/17		109	%	50 - 130
				D8-Acenaphthylene	2020/11/17		92	%	50 - 130
				Benzo(e)pyrene	2020/11/17		88	%	50 - 130
				Acenaphthene	2020/11/17		96	%	50 - 130
				Acenaphthylene	2020/11/17		107	%	50 - 130
				Anthracene	2020/11/17		97	%	50 - 130
				Benzo(a)anthracene	2020/11/17		104	%	50 - 130
				Benzo(a)pyrene	2020/11/17		97	%	50 - 130
				Benzo(b/j)fluoranthene	2020/11/17		83	%	50 - 130
				Benzo(g,h,i)perylene	2020/11/17		87	%	50 - 130
				Benzo(k)fluoranthene	2020/11/17		90	%	50 - 130
				Chrysene	2020/11/17		99	%	50 - 130
				Dibenzo(a,h)anthracene	2020/11/17		96	%	50 - 130
				Fluoranthene	2020/11/17		98	%	50 - 130
				Fluorene	2020/11/17		101	%	50 - 130
				Indeno(1,2,3-cd)pyrene	2020/11/17		92	%	50 - 130
				1-Methylnaphthalene	2020/11/17		99	%	50 - 130
				2-Methylnaphthalene	2020/11/17		101	%	50 - 130
				Naphthalene	2020/11/17		96	%	50 - 130
				Phenanthrene	2020/11/17		96	%	50 - 130
				Pyrene	2020/11/17		103	%	50 - 130
				Perylene	2020/11/17		95	%	50 - 130
	7059757	RAJ	Spiked Blank	D10-Anthracene	2020/11/17		100	%	50 - 130
				D14-Terphenyl (FS)	2020/11/17		106	%	50 - 130
				D8-Acenaphthylene	2020/11/17		87	%	50 - 130
				Benzo(e)pyrene	2020/11/17		96	%	50 - 130
				Acenaphthene	2020/11/17		92	%	50 - 130
				Acenaphthylene	2020/11/17		95	%	50 - 130
				Anthracene	2020/11/17		93	%	50 - 130
				Benzo(a)anthracene	2020/11/17		99	%	50 - 130
				Benzo(a)pyrene	2020/11/17		95	%	50 - 130
				Benzo(b/j)fluoranthene	2020/11/17		94	%	50 - 130
				Benzo(g,h,i)perylene	2020/11/17		94	%	50 - 130
				Benzo(k)fluoranthene	2020/11/17		94	%	50 - 130
				Chrysene	2020/11/17		95	%	50 - 130
				Dibenzo(a,h)anthracene	2020/11/17		97	%	50 - 130
				Fluoranthene	2020/11/17		96	%	50 - 130
				Fluorene	2020/11/17		96	%	50 - 130
				Indeno(1,2,3-cd)pyrene	2020/11/17		96	%	50 - 130
				1-Methylnaphthalene	2020/11/17		90	%	50 - 130
				2-Methylnaphthalene	2020/11/17		91	%	50 - 130
				Naphthalene	2020/11/17		79	%	50 - 130
				Phenanthrene	2020/11/17		94	%	50 - 130
				Pyrene	2020/11/17		99	%	50 - 130
				Perylene	2020/11/17		94	%	50 - 130
	7059757	RAJ	Method Blank	D10-Anthracene	2020/11/17		96	%	50 - 130
				D14-Terphenyl (FS)	2020/11/17		105	%	50 - 130
				D8-Acenaphthylene	2020/11/17		83	%	50 - 130



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				Benzo(e)pyrene	2020/11/17	<0.0050		ug/g	
				Acenaphthene	2020/11/17	<0.0050		ug/g	
				Acenaphthylene	2020/11/17	<0.0050		ug/g	
				Anthracene	2020/11/17	<0.0050		ug/g	
				Benzo(a)anthracene	2020/11/17	<0.0050		ug/g	
				Benzo(a)pyrene	2020/11/17	<0.0050		ug/g	
				Benzo(b/j)fluoranthene	2020/11/17	<0.0050		ug/g	
				Benzo(g,h,i)perylene	2020/11/17	<0.0050		ug/g	
				Benzo(k)fluoranthene	2020/11/17	<0.0050		ug/g	
				Chrysene	2020/11/17	<0.0050		ug/g	
				Dibenzo(a,h)anthracene	2020/11/17	<0.0050		ug/g	
				Fluoranthene	2020/11/17	<0.0050		ug/g	
				Fluorene	2020/11/17	<0.0050		ug/g	
				Indeno(1,2,3-cd)pyrene	2020/11/17	<0.0050		ug/g	
				1-Methylnaphthalene	2020/11/17	<0.0050		ug/g	
				2-Methylnaphthalene	2020/11/17	<0.0050		ug/g	
				Naphthalene	2020/11/17	<0.0050		ug/g	
				Phenanthrene	2020/11/17	<0.0050		ug/g	
				Pyrene	2020/11/17	<0.0050		ug/g	
				Perylene	2020/11/17	<0.0050		ug/g	
7059757	RAJ	RPD [ODF352-01]		Benzo(e)pyrene	2020/11/17	27		%	40
				Acenaphthene	2020/11/17	NC		%	40
				Acenaphthylene	2020/11/17	NC		%	40
				Anthracene	2020/11/17	NC		%	40
				Benzo(a)anthracene	2020/11/17	NC		%	40
				Benzo(a)pyrene	2020/11/17	15		%	40
				Benzo(b/j)fluoranthene	2020/11/17	21		%	40
				Benzo(g,h,i)perylene	2020/11/17	14		%	40
				Benzo(k)fluoranthene	2020/11/17	NC		%	40
				Chrysene	2020/11/17	20		%	40
				Dibenzo(a,h)anthracene	2020/11/17	NC		%	40
				Fluoranthene	2020/11/17	37		%	40
				Fluorene	2020/11/17	NC		%	40
				Indeno(1,2,3-cd)pyrene	2020/11/17	NC		%	40
				1-Methylnaphthalene	2020/11/17	NC		%	40
				2-Methylnaphthalene	2020/11/17	NC		%	40
				Naphthalene	2020/11/17	NC		%	40
				Phenanthrene	2020/11/17	22		%	40
				Pyrene	2020/11/17	36		%	40
				Perylene	2020/11/17	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

BV Labs Job #: COT9631
Report Date: 2020/11/19

Stantec Consulting Ltd
Client Project #: 160960844.844.200
Sampler Initials: JH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

<Original signed by>

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #50575 Stantec Consulting Ltd	Contact Name: Accounts Payable	Company Name: Loren Knopper	Contact Name: Loren Knopper	Quotation #: C01624	Task #: 160960844.844.200	Project #: 1609	Site #: <i>Shale</i>
Address: 835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4		Address: _____		Profit Centre: 1609		Sampled By: <i>Shale</i>	
Phone: (905) 381-3211	Fax: (905) 631-8960	Phone: _____	Fax: _____	COC #: _____		C#900568-01-01	
Email: SAPinvoices@Stantec.com		Email: Loren.Knopper@stantec.com		Turnaround Time (TAT) Required: _____		Bottle Order #: _____	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table _____		Other Regulations <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table _____ <input type="checkbox"/> Other _____	Special Instructions _____
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Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr / V	PAHs	Analysis Requested (Please be specific)	Turnaround Time (TAT) Required: _____
1	TREMANE-SS-01	20/11/11	0925	SC	NA	✓		Regular (Standard) TAT: <input checked="" type="checkbox"/> <i>(will be applied if Rush TAT is not specified)</i> Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)
2	TREMANE-SS-02		0930			✓		
3	TREMANE-SS-03		0935			✓		
4	TREMANE-OL-01					✓		
5	R25T-SS-01		1015			✓		
6	R25T-SS-02		1020			✓		
7	R25T-SS-03		1025			✓		
8	R25T-OL-01					✓		
9								
10								

11-Nov-20 11:17
Ronklin Gracian
C0T9631
DSG ENV-695

RELINQUISHED BY: (Signature/Print) <i>Jessica Uae</i>	Date: (YY/MM/DD) 20/11/11	Time 1115	RECEIVED BY: (Signature/Print) <i>Loren Knopper</i>	Date: (YY/MM/DD) 20/11/11	Time 1117	# Jars used and not submitted: 0	Laboratory Use Only Time Sensitive: _____ Temperature (°C) on Receipt: 10/11/15 Custody Seal Present: <input checked="" type="checkbox"/> Intact: <input checked="" type="checkbox"/>
---	---------------------------	-----------	---	---------------------------	-----------	----------------------------------	---

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
 ** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

JCS



Your Project #: 160980644
 Your C.O.C. #: 900396-01-01

Attention: Denis Kirchoff

Stantec Consulting Ltd
 835 Paramount Drive, Suite 200
 Stoney Creek, ON
 CANADA L8J 0B4

Report Date: 2022/11/07
 Report #: R7376984
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V4814

Received: 2022/10/27, 15:17

Sample Matrix: Soil
 # Samples Received: 8

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Moisture (Subcontracted) (1, 2)	8	N/A	2022/11/04	AB SOP-00002	CCME PHC-CWS m
CCME Index of Additive Cancer Risk (1)	8	2022/10/27	2022/11/05		CCME PHC-CWS
B[a]P Total Potency Equivalent (1)	8	N/A	2022/11/05		CCME
PAH in Soil by GC/MS (1)	8	2022/11/03	2022/11/05	AB SOP-00036/AB SOP-00003	EPA 3540C/8270E m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Calgary (19th), 4000 19th Street NE, Calgary, AB, T2E 6P8

(2) Offsite analysis requires that subcontracted moisture be reported.



Your Project #: 160980644
Your C.O.C. #: 900396-01-01

Attention: Denis Kirchoff

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2022/11/07
Report #: R7376984
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V4814

Received: 2022/10/27, 15:17

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bureauveritas.com
Phone# (905)817-5752

=====

This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

CCME PAHS (SOIL)

Bureau Veritas ID		UDF057		UDF058	UDF059		UDF060		
Sampling Date		2022/10/27 11:45		2022/10/27 12:05	2022/10/27 12:20		2022/10/27 15:55		
COC Number		900396-01-01		900396-01-01	900396-01-01		900396-01-01		
	UNITS	T-SS-01	RDL	T-SS-02	T-SS-03	RDL	FL-SS-01	RDL	QC Batch
Physical Testing									
Moisture-Subcontracted	%	17	0.30	15	20	0.30	25	0.30	8330192
Calculated Parameters									
Index of Additive Cancer Risk -IACR	N/A	0.09	0.05	<0.06	<0.06	0.06	0.13	0.05	8330193
Polyaromatic Hydrocarbons									
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(a)pyrene Total Potency Equiv.	mg/kg	<0.0071	0.0071	<0.0071	<0.0071	0.0071	0.012	0.0071	8330194
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Acridine	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8330195
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	<0.0040	0.0040	<0.0040	0.0040	8330195
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(b/j)fluoranthene	mg/kg	0.0076	0.0050	<0.0050	<0.0050	0.0050	0.012	0.0050	8330195
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	0.0067	0.0050	8330195
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	0.0067	0.0050	8330195
Benzo(e)pyrene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Chrysene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Dibenzo(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Fluoranthene	mg/kg	0.0089	0.0050	<0.0050	<0.0050	0.0050	0.013	0.0050	8330195
Fluorene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	0.0069	0.0050	8330195
1-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Naphthalene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Perylene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Pyrene	mg/kg	0.0071	0.0050	<0.0050	<0.0050	0.0050	0.010	0.0050	8330195
Quinoline	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8330195
Surrogate Recovery (%)									
D10-Anthracene	%	97		97	101		102		8330195
D14-Terphenyl	%	103		104	110		109		8330195
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

CCME PAHS (SOIL)

Bureau Veritas ID		UDF057		UDF058	UDF059		UDF060		
Sampling Date		2022/10/27 11:45		2022/10/27 12:05	2022/10/27 12:20		2022/10/27 15:55		
COC Number		900396-01-01		900396-01-01	900396-01-01		900396-01-01		
	UNITS	T-SS-01	RDL	T-SS-02	T-SS-03	RDL	FL-SS-01	RDL	QC Batch
D8-Acenaphthylene	%	100		101	105		103		8330195
D8-Naphthalene	%	100		102	106		104		8330195
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

CCME PAHS (SOIL)

Bureau Veritas ID		UDF061		UDF062		UDF063		UDF064		
Sampling Date		2022/10/27 14:05		2022/10/27 14:10		2022/10/27		2022/10/27		
COC Number		900396-01-01		900396-01-01		900396-01-01		900396-01-01		
	UNITS	FL-SS-02	RDL	FL-SS-03	RDL	QC-01	RDL	QC-02	RDL	QC Batch

Physical Testing

Moisture-Subcontracted	%	15	0.30	17	0.30	18	0.30	22	0.30	8330192
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Calculated Parameters

Index of Additive Cancer Risk -IACR	N/A	<0.06	0.06	0.11	0.05	<0.06	0.06	0.09	0.05	8330193
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Polyaromatic Hydrocarbons

Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(a)pyrene Total Potency Equiv.	mg/kg	<0.0071	0.0071	<0.0071	0.0071	<0.0071	0.0071	<0.0071	0.0071	8330194
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Acridine	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	8330195
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	<0.0040	0.0040	<0.0040	0.0040	8330195
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(b/j)fluoranthene	mg/kg	<0.0050	0.0050	0.010	0.0050	<0.0050	0.0050	0.0078	0.0050	8330195
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Benzo(e)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Chrysene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Dibenzo(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Fluoranthene	mg/kg	<0.0050	0.0050	0.0081	0.0050	<0.0050	0.0050	0.0071	0.0050	8330195
Fluorene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
1-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Naphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Pyrene	mg/kg	<0.0050	0.0050	0.0063	0.0050	<0.0050	0.0050	<0.0050	0.0050	8330195
Quinoline	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	8330195

Surrogate Recovery (%)

D10-Anthracene	%	104		96		94		95		8330195
D14-Terphenyl	%	111		105		102		103		8330195

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

CCME PAHS (SOIL)

Bureau Veritas ID		UDF061		UDF062		UDF063		UDF064		
Sampling Date		2022/10/27 14:05		2022/10/27 14:10		2022/10/27		2022/10/27		
COC Number		900396-01-01		900396-01-01		900396-01-01		900396-01-01		
	UNITS	FL-SS-02	RDL	FL-SS-03	RDL	QC-01	RDL	QC-02	RDL	QC Batch
D8-Acenaphthylene	%	106		100		96		97		8330195
D8-Naphthalene	%	107		100		95		97		8330195
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

TEST SUMMARY

Bureau Veritas ID: UDF057
Sample ID: T-SS-01
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF058
Sample ID: T-SS-02
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF059
Sample ID: T-SS-03
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF060
Sample ID: FL-SS-01
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF061
Sample ID: FL-SS-02
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

TEST SUMMARY

Bureau Veritas ID: UDF062
Sample ID: FL-SS-03
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF063
Sample ID: QC-01
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian

Bureau Veritas ID: UDF064
Sample ID: QC-02
Matrix: Soil

Collected: 2022/10/27
Shipped:
Received: 2022/10/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture (Subcontracted)	BAL	8330192	N/A	2022/11/04	Richard Ly
CCME Index of Additive Cancer Risk	CALC	8330193	2022/11/05	2022/11/05	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8330194	N/A	2022/11/05	Automated Statchk
PAH in Soil by GC/MS	GC/MS	8330195	2022/11/03	2022/11/05	Nora Kazemian



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.0°C
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Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
	8330192	RIL	Method Blank	Moisture-Subcontracted	2022/11/04	<0.30		%	
	8330195	éBH	Matrix Spike	D10-Anthracene	2022/11/05		92	%	50 - 130
				D14-Terphenyl	2022/11/05		105	%	50 - 130
				D8-Acenaphthylene	2022/11/05		100	%	50 - 130
				D8-Naphthalene	2022/11/05		115	%	50 - 130
				Acenaphthene	2022/11/05		88	%	50 - 130
				Acenaphthylene	2022/11/05		98	%	50 - 130
				Acridine	2022/11/05		73	%	50 - 130
				Anthracene	2022/11/05		93	%	50 - 130
				Benzo(a)anthracene	2022/11/05		94	%	50 - 130
				Benzo(b/j)fluoranthene	2022/11/05		92	%	50 - 130
				Benzo(k)fluoranthene	2022/11/05		95	%	50 - 130
				Benzo(g,h,i)perylene	2022/11/05		93	%	50 - 130
				Benzo(c)phenanthrene	2022/11/05		101	%	50 - 130
				Benzo(a)pyrene	2022/11/05		93	%	50 - 130
				Benzo(e)pyrene	2022/11/05		88	%	50 - 130
				Chrysene	2022/11/05		94	%	50 - 130
				Dibenzo(a,h)anthracene	2022/11/05		94	%	50 - 130
				Fluoranthene	2022/11/05		90	%	50 - 130
				Fluorene	2022/11/05		94	%	50 - 130
				Indeno(1,2,3-cd)pyrene	2022/11/05		93	%	50 - 130
				1-Methylnaphthalene	2022/11/05		86	%	50 - 130
				2-Methylnaphthalene	2022/11/05		110	%	50 - 130
				Naphthalene	2022/11/05		108	%	50 - 130
				Phenanthrene	2022/11/05		95	%	50 - 130
				Perylene	2022/11/05		85	%	50 - 130
				Pyrene	2022/11/05		89	%	50 - 130
				Quinoline	2022/11/05		89	%	50 - 130
	8330195	éBH	Spiked Blank	D10-Anthracene	2022/11/05		93	%	50 - 130
				D14-Terphenyl	2022/11/05		92	%	50 - 130
				D8-Acenaphthylene	2022/11/05		101	%	50 - 130
				D8-Naphthalene	2022/11/05		102	%	50 - 130
				Acenaphthene	2022/11/05		88	%	50 - 130
				Acenaphthylene	2022/11/05		99	%	50 - 130
				Acridine	2022/11/05		75	%	50 - 130
				Anthracene	2022/11/05		95	%	50 - 130
				Benzo(a)anthracene	2022/11/05		87	%	50 - 130
				Benzo(b/j)fluoranthene	2022/11/05		87	%	50 - 130
				Benzo(k)fluoranthene	2022/11/05		86	%	50 - 130
				Benzo(g,h,i)perylene	2022/11/05		100	%	50 - 130
				Benzo(c)phenanthrene	2022/11/05		90	%	50 - 130
				Benzo(a)pyrene	2022/11/05		98	%	50 - 130
				Benzo(e)pyrene	2022/11/05		83	%	50 - 130
				Chrysene	2022/11/05		85	%	50 - 130
				Dibenzo(a,h)anthracene	2022/11/05		109	%	50 - 130
				Fluoranthene	2022/11/05		91	%	50 - 130
				Fluorene	2022/11/05		98	%	50 - 130
				Indeno(1,2,3-cd)pyrene	2022/11/05		112	%	50 - 130
				1-Methylnaphthalene	2022/11/05		82	%	50 - 130
				2-Methylnaphthalene	2022/11/05		104	%	50 - 130
				Naphthalene	2022/11/05		96	%	50 - 130
				Phenanthrene	2022/11/05		97	%	50 - 130



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8330195	éBH	Method Blank	Perylene	2022/11/05		89	%	50 - 130
			Pyrene	2022/11/05		89	%	50 - 130
			Quinoline	2022/11/05		90	%	50 - 130
			D10-Anthracene	2022/11/05		93	%	50 - 130
			D14-Terphenyl	2022/11/05		93	%	50 - 130
			D8-Acenaphthylene	2022/11/05		100	%	50 - 130
			D8-Naphthalene	2022/11/05		101	%	50 - 130
			Acenaphthene	2022/11/05	<0.0050		mg/kg	
			Acenaphthylene	2022/11/05	<0.0050		mg/kg	
			Acridine	2022/11/05	<0.010		mg/kg	
			Anthracene	2022/11/05	<0.0040		mg/kg	
			Benzo(a)anthracene	2022/11/05	<0.0050		mg/kg	
			Benzo(b/j)fluoranthene	2022/11/05	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2022/11/05	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2022/11/05	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2022/11/05	<0.0050		mg/kg	
			Benzo(a)pyrene	2022/11/05	<0.0050		mg/kg	
			Benzo(e)pyrene	2022/11/05	<0.0050		mg/kg	
			Chrysene	2022/11/05	<0.0050		mg/kg	
			Dibenzo(a,h)anthracene	2022/11/05	<0.0050		mg/kg	
			Fluoranthene	2022/11/05	<0.0050		mg/kg	
			Fluorene	2022/11/05	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2022/11/05	<0.0050		mg/kg	
			1-Methylnaphthalene	2022/11/05	<0.0050		mg/kg	
			2-Methylnaphthalene	2022/11/05	<0.0050		mg/kg	
			Naphthalene	2022/11/05	<0.0050		mg/kg	
			Phenanthrene	2022/11/05	<0.0050		mg/kg	
			Perylene	2022/11/05	<0.0050		mg/kg	
			Pyrene	2022/11/05	<0.0050		mg/kg	
			Quinoline	2022/11/05	<0.010		mg/kg	

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.



BUREAU
VERITAS

Bureau Veritas Job #: C2V4814
Report Date: 2022/11/07

Stantec Consulting Ltd
Client Project #: 160980644
Sampler Initials: RZ

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

<Original signed by>

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

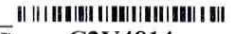


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27-Oct-22 15:17

Page 1 of 1

Ronklin Gracian



C2V4814

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name: #50575 Stantec Consulting Ltd	Contact Name: Accounts Payable	Company Name: Denis Kirchoff	Contact Name: Denis Kirchoff	Quotation #: C15856	Task #: JDK ENV-1332
Address: 835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Phone: (905) 381-3211 Fax: (905) 631-8960	Address:	Phone:	Project #: 160980644	Profit Centre: 1609
Email: SAPinvoices@Stantec.com		Address:	Phone:	Site #:	Sampled By:

Use Only:
Bottle Order #:
900396
Project Manager:
Ronklin Gracian

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011) <input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input checked="" type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Igid/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input checked="" type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table		Other Regulations <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other		Special Instructions
--	--	--	--	-----------------------------

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / VI	0 Reg 153 PAHs	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	Turnaround Time (TAT) Required: Please provide advance notice for rush projects
1	T-SS-01	22/10/27	1145	Soil	/	/		Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
2	T-SS-02		1205		/	/		Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)
3	T-SS-03		1220		/	/		# of Bottles: _____ Comments: _____
4	FL-SS-01		1355		/	/		
5	FL-SS-02		1405		/	/		
6	FL-SS-03		1410		/	/		
7	QC-01		=		/	/		
8	QC-02		=		/	/		
9								
10								

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only
<i>[Signature]</i>	22/10/27	1500	<i>[Signature]</i>	20/10/27	1500		Time Sensitive Temperature (°C) on Recept: 6.8/7 Custody Seal Present: <input checked="" type="checkbox"/> Intact: <input checked="" type="checkbox"/>

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client