

PHASE 2 INITIAL BOREHOLE DRILLING AND TESTING, IGNACE AREA

*WP01 Site Demobilization Report – Site
Infrastructure for IG_BH03*

APM-REP-01332-0262

November 2020

Golder Associates Ltd.

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

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REPORT

PHASE 2 INITIAL BOREHOLE DRILLING AND TESTING, IGNACE AREA

WP01 Site Demobilization Report - Site Infrastructure for IG_BH03

Submitted to:

Nuclear Waste Management Organization

4th Floor 22 St. Clair Avenue East
Toronto, Ontario M4T 2S3

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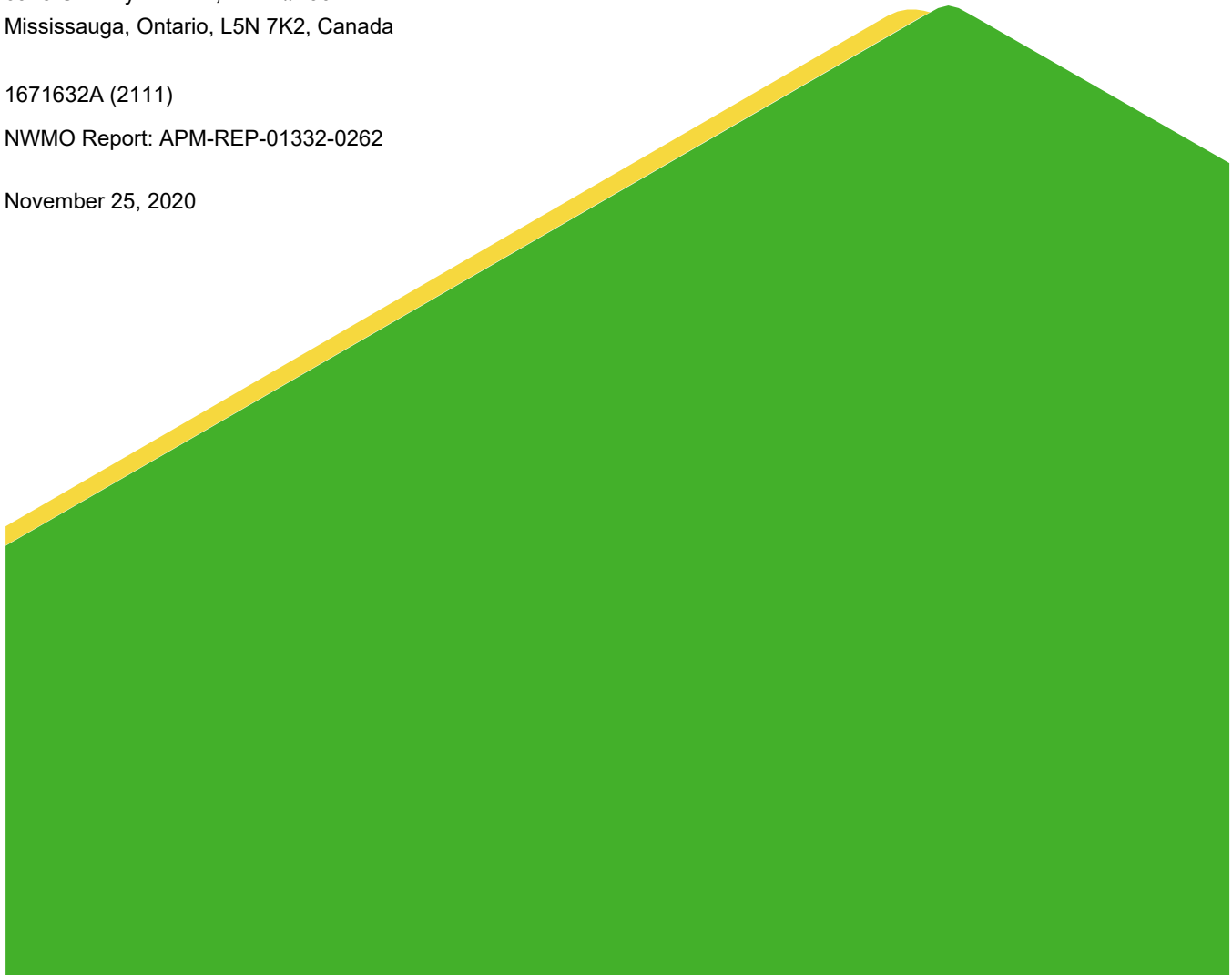
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1671632A (2111)

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WP01B SITE DEMOBILIZATION REPORT SITE INFRASTRUCTURE FOR IG_BH03

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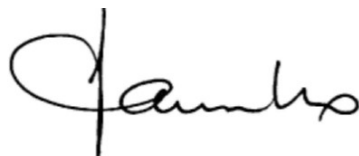
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Approved by: _____

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1.0 INTRODUCTION

The Initial Borehole Drilling and Testing project in the Wabigoon and Ignace Area, Ontario is part of Phase 2 Geoscientific Preliminary Field Investigations of the NWMO's Adaptive Phased Management (APM) Site Selection Phase. This project involves the drilling and testing of the first of three deep boreholes within the northern portion of the Revell batholith.

Work Package WP01 addresses site establishment and site infrastructure activities for the drilling and testing of boreholes IG_BH01, IG_BH02 and IG_BH03, and the construction of access roads to IG_BH02 and IG_BH03 in the Wabigoon and Ignace area (Figure 1). The area is located a direct distance of approximately 21 km southeast of the Wabigoon Lake Ojibway Nation and a direct distance of 43 km northwest of the Town of Ignace.

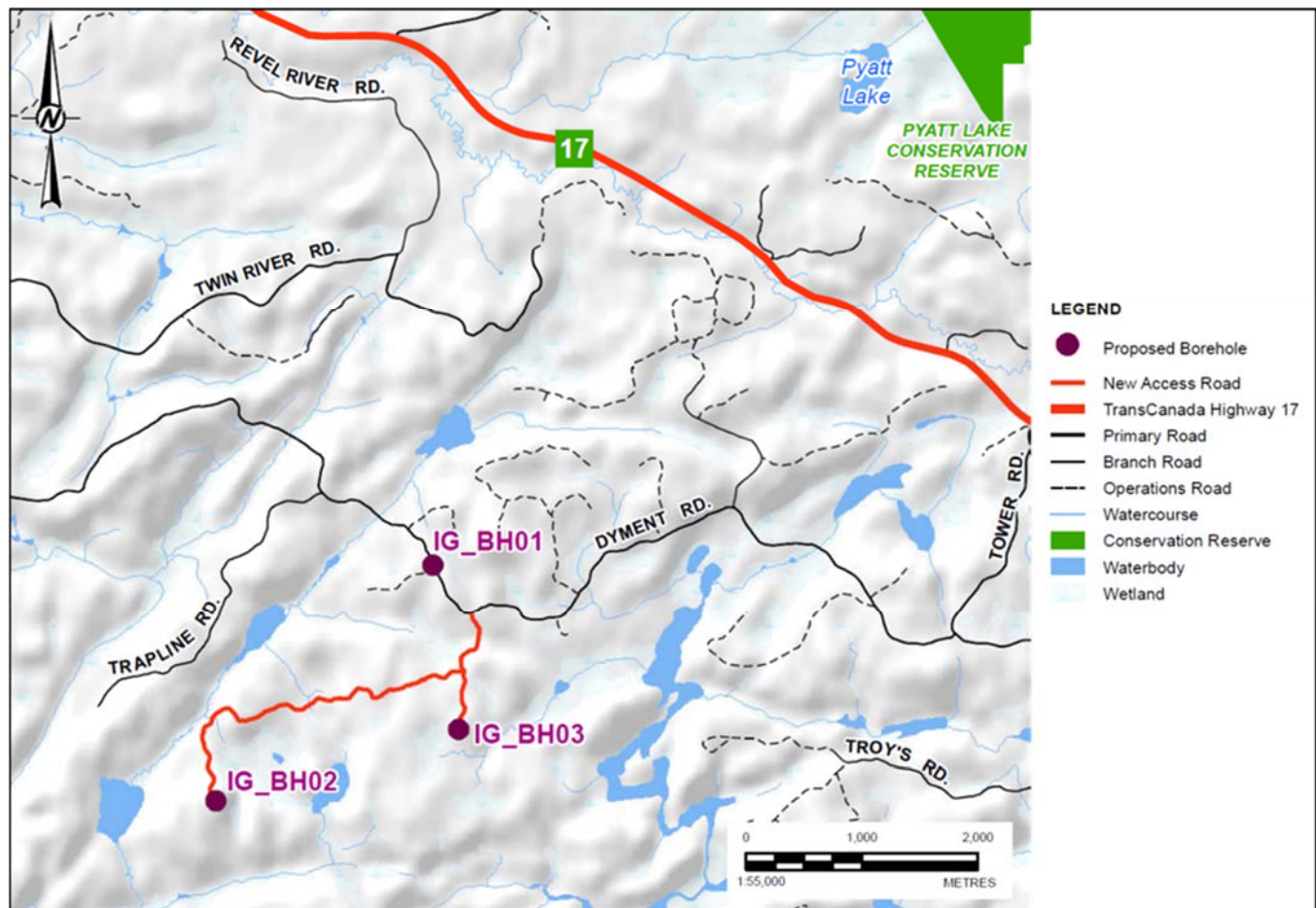


Figure 1: The location of IG_BH03 in relation to the Wabigoon / Ignace area.

This report describes the site infrastructure demobilization and site decommissioning activities that took place at IG_BH03 in November and December 2019 and July 2020. An aerial photo of the IG_BH03 site while in operation during in August 2019 is provided in Appendix A (Photo 1).

2.0 DEMOBILIZATION AND DECOMMISSIONING ACTIVITIES

Demobilization and decommissioning activities at IG_BH03 described in this report took place during the following periods:

- August 2019 - Excavation and removal of hydrocarbon impacted soils associated with a hydraulic fluid spill from a skid steer machine.
- September 2019 – Removal of two light towers.
- November – December 2019 – Removal of the workover rig and drill pad matting, temporary buildings, power system, communication system, waste and recycling bins, two light towers and security fencing, a general clean-up of the site, and an interim site decommissioning inspection by Golder.
- July 2020 – Removal of silt fencing, buried electrical conduits, general clean-up of the site, and final site decommissioning inspection by Golder.

The demobilization of site facilities was carried out by Taranis Contracting Group Ltd. (Taranis) and their subcontractors, the demobilization of the drill was carried out by Rodren Drilling Ltd. (Rodren), and the removal of perimeter snow and silt fencing and final site clean-up was carried out by Ricci Trucking (Ricci), all under the supervision of Golder.

2.1 Impacted Soil Clean-up

The excavation and removal of petroleum hydrocarbon impacted soils resulting from a hydraulic fluid leak onto the ground southwest of the drill pad at the IG_BH03 drill site, was carried out on August 16, 2019 and August 30, 2019 by Golder. The source of the spill was leakage from a skid steer machine owned and operated by Rodren and was first noticed in July 2019 in the area where the skid steer was parked. A technical memorandum describing the clean-up activities is provided in Appendix B.

2.2 Site TrailersOffice Trailers

Three mobile office trailers were located on the north side of site for use as field offices for Golder, the NWMO, and Rodren. The three office trailers were removed by SecureStore (a Taranis subcontractor) on November 26, 2019, and were transported to their facility in Shuniah, Ontario. A photo of the Golder office trailer being removed is shown in Appendix A (Photo 2).

Core Logging and Storage Seacans

Two 12 m long modified shipping containers (seacans) were located at the southeast corner of site near the drill rig for use as work areas during WP02 through WP09. Upon completion of drilling and testing at IG_BH03, the two seacans were removed by SecureStore on November 26, 2019, and transported to their facility in Shuniah, Ontario. A photo of the core storage seacan being removed is shown in Appendix A (Photo 3).

Washrooms

The site washroom system consisted of three separate structures. The heated / insulated washcart was divided into men's and women's sections with separate entrances. Wastewater from the washcart flowed into the exterior 6,000 L septic tank located directly west of the washcart. Fresh water was supplied from a heated seacan containing a water storage tank. The washcart, wastewater tank and freshwater seacan were removed by SecureStore on November 26, 2019. A photo of the washcart removal is shown in Appendix A (Photo 4).

2.3 Site Internet and Wi-Fi

Cellular signals from the local mobile network were amplified for all site workers through the use of a Uniden cellular signal booster. Internet service for the site was provided through the local cellular network with a Bell Canada ZTE MF288 Turbo Hub. Emergency satellite communications were provided by a handheld Garmin In-Reach SE. Following the demobilization of the site, the Uniden cellular booster was moved to IG_BH02 drill site. The Bell Canada ZTE MF288 Turbo Hub and Garmin In-Reach SE were both rental units which were returned to suppliers on December 4, 2019.

2.4 Power and Lighting

Power Generation

A CAT XQ100 diesel-electric generator was set up on the east side of site, and used to power the site trailers, core logging and core storage seacans, freshwater supply system, washcart, and the core extrusion seacan. The generator was set up inside a secondary containment tray which was sized so that the entire generator could fit within the walls of the containment, and so that the secondary containment capacity exceeded the capacity of fluids stored by the generator.

A 4,500 L double-walled fuel storage tank was located adjacent to the generator and was placed inside secondary containment with an overflow storage capacity which exceeded the capacity of fluids within the tank. The tank was placed on concrete pads to provide a stable foundation beneath the tank. Fibre matting was placed beneath the concrete pads to prevent punctures to the containment from the concrete pads. The fuel tank was surrounded by four concrete bollards to protect it from vehicular traffic and heavy machinery.

On November 26, 2019 the generator, fuel storage tank, and protective barricades were removed from site and taken by Taranis to their facility in Thunder Bay, Ontario. The secondary containment berms were folded up and transported to IG_BH02 for additional spill protection capacity. The fibre matting and concrete pads were discarded as non-hazardous waste. A photo showing the generator removal and emptying of the fuel tank prior to removal is shown in Appendix A (Photo 5).

Power Distribution

Power from the main site generator was distributed to the site facilities via double jacketed electrical cables. The majority of the power cables were mounted to the perimeter fencing and were removed on November 26, 2019. In areas where the electrical cables passed through a trafficable area, they were buried underground inside ABS conduits, and could not be removed in November 2019 due to frozen ground conditions. The buried underground cables and conduits were later removed by Ricci on July 7, 2020.

Lighting

Of the four 8-kW diesel powered light towers that were originally installed at site, two were removed in September 2019 due to the reduced lighting requirements during the testing phases of the program. The remaining two light towers were later removed on November 26, 2019. The secondary spill containment systems beneath each light tower were folded up and transported to the IG_BH02 drill site for additional spill tray capacity at that site.

2.5 Fencing

The security fencing at IG_BH03 was removed by Taranis on December 4, 2019. Snow and silt fencing had been installed around the perimeter of the drill site to mitigate the discharge of suspended sediments in the surface

water runoff. The snow and silt fences could not be removed due to frozen ground conditions. The snow and silt fencing was later removed on July 7, 2020 by Ricci.

2.6 Drilling Equipment

The Rodren workover rig was removed on November 29, 2019 and transported directly to IG_BH02 for use at that location. Beneath the workover rig was a secondary containment system with a central sump which captured any drill fluid spills that could potentially occur in the drill rig or drill fluid circulation system. Rig matting was placed over top of the central sump system, to provide a level and solid foundation for the drill rig infrastructure. The rig matting and secondary containment system was removed on November 30, 2019, and transported to Rodren's facility in Winnipeg, Manitoba. A photo of the workover rig removal is shown in Appendix A (Photo 6).

No evidence of staining was observed beneath the workover rig or secondary containment system during removal. Approximately 3 m³ of pit run aggregate was later brought to site by Ricci on July 7, 2020 and used to backfill and level the sump area around the borehole.

2.7 Solid Waste

Solid waste was managed during operations on an ongoing basis using one garbage bin and one recycling bin, which were placed near the front entrance to the drill site, for ease of access by the garbage and recycling truck. The garbage and recycling bins were removed on December 4, 2019 by B&M Deliveries (Taranis subcontractor) of Dryden, Ontario. Waste material was transported by B&M Deliveries to the Town of Dryden Landfill Site for disposal.

2.8 Borehole Security

A locking protective casing was custom fabricated and installed at the IG_BH03 well head. The protective casing included a monopod bracket to allow for mounting of a Westbay monopod during future testing programs, to access the Westbay MP-38 monitoring system. The protective casing was installed on December 10, 2019 as shown in Appendix A (Photo 7). A final as-built survey of the borehole was performed by Rugged Geomatics Inc. on January 14, 2020, after the protective casing was installed.

3.0 FINAL SITE INSPECTION AND SUMMARY

Following completion of all site demobilization and decommissioning activities, a site walkover inspection was performed by Golder on July 8, 2020 accompanied by an NWMO representative. The objective of the inspection was to check for the presence of any remaining stained soils or litter which may still be present but had been obscured by the snow during the initial demobilization in December 2019. A grid pattern was walked across the entire site and it was visually confirmed that there was no remaining soil staining or litter at the site.

The completion of demobilization and decommissioning activities was documented as they took place and the results recorded on a site decommissioning checklist. The checklist was signed off by Golder representatives upon completion and is provided in Appendix C. A photo of the IG_BH03 drill site taken on July 8, 2020 upon completion of demobilization and decommissioning is provided in Appendix A (Photo 8). An aerial photo of the IG_BH03 drill site taken after Golder's July 8, 2020 departure is provided in Appendix A (Photo 9).

4.0 REFERENCES

Golder, 2018. WP1 – Site Infrastructure Plan and Access Road Construction Plan – Ignace Boreholes IG_BH01, IG_BH02 and IG_BH03 – Golder Associates, July 2018.

APPENDIX A

Site Photos – IG_BH03



Photo 1: Aerial drone photo of the commissioned IG_BH03 site (facing south), taken in August 2019.



Photo 2: Facing West towards the Golder office trailer being removed from the north side of the site, November 26, 2019.



Photo 3: Facing northeast towards the core storage seacan as it is being removed, November 26, 2019.



Photo 4: Facing west towards the washcart as it is being removed, November 26, 2019.



Photo 5: Facing East towards the generator and fuel storage tank. The fuel storage tank is being emptied prior to removal, November 26, 2019.



Photo 6: Facing south towards the workover rig as it is removed from the IG_BH03 drill pad, and moved to the IG_BH02 drill pad, November 30, 2019.



Photo 7: Facing east towards IG_BH03 with locking protective casing and monopod bracket, and backfilled drilling sump, July 7, 2020.



Photo 4: Facing northwest at IG_BH03 during the final site walkover performed, July 8, 2020.



Photo 9: Aerial drone photo of the IG_BH03 site (facing south) following demobilization. Photo was taken in July 2020. Discolorations visible in the gravel fill were caused by recent digging to remove underground infrastructure.

APPENDIX B

**Excavation and Removal of Impacted Soils
Associated with a Hydraulic Fluid Spill at
IG_BH03**

December 5, 2019

Project No. 1671632A (2101)

Maria Sanchez- Rico Castejon, Sarah Hirschorn, Geoff Crann

NWMO

204 Main Street

Ignace, Ontario, POT 1T0

EXCAVATION AND REMOVAL OF IMPACTED SOILS ASSOCIATED WITH A HYDRAULIC FLUID SPILL AT IG_BH03 TEST SITE, IGNACE, ON

This technical memorandum describes the excavation and removal of petroleum hydrocarbon impacted soils carried out on August 16, 2019 and August 30, 2019 by Golder Associates Ltd. ("Golder") resulting from a hydraulic fluid leak onto the ground southwest of the drill pad at the IG_BH03 drill site in Ignace, ON ("the Site").

The source of the spill was leakage from a skid steer machine owned and operated by Rodren Drilling Inc. (Rodren) and was first noticed in July 2019 in the area where the skid steer was parked (see Figure 1). The excavation of the impacted soils was carried out by Ricci's Trucking Inc. ("Ricci") with support from Rodren, under the direction of the Golder Site Supervisor, who was also responsible for directing and documenting remedial activities, and collecting samples for laboratory analysis.

SCOPE OF WORK

The following tasks were carried out.

- Removal of impacted soils from the spill location based on visual and field screening methods. The excavation was completed in two stages, and initial excavation of a 2m x 6m sized area to a depth of 0.3m below surface on August 16, 2019 and a follow-up excavation of a 3.5m x 2m sized area (east side of the original investigation) to an additional depth of 0.7m below surface.
- Collection of confirmatory soil samples from the floor and walls of the excavation for screening of organic vapour and combustible vapour concentrations, and visual/olfactory inspection. A total of 12 initial (EX101-1 to EX101-12) and 3 follow-up confirmatory samples (EX102-1 to EX102-3) were collected from the floor and walls of the excavations.
- Submission of five of the above noted samples from the completed excavation floor and walls in the spill area after impacted soil removal for laboratory analysis. The samples were submitted to Bureau Veritas Laboratories ("BV Labs") for analysis of petroleum hydrocarbon fractions F1 to F4 ("PHC F1-F4") and benzene, toluene, ethylbenzene and xylenes ("BTEX").
- Submission of a composite waste characterization sample of the accumulated excavated soils for toxicity characteristic leaching procedure (TCLP) testing, to determine disposal options.
- Preparation of this factual report summarizing the remedial activities undertaken and the results.

INITIAL SOIL EXCAVATION

The initial soil excavation (EX101) took place on August 16, 2019 during which a 2m x 6m area was excavated to a depth of approximately 0.3m (see Figure 2). The excavated soils were placed in large soil bags for future off-site disposal. Photographs taken during the excavation are provided in Attachment A.

A total of 12 confirmatory soil samples (EX101-1 to EX101-12) were collected from the walls and the base of the excavation, and screened for combustible vapours using an RKI Eagle II Gas Monitor calibrated to the manufacturer's specifications and methods. Each confirmatory sample was also assessed for visual and olfactory signs of hydrocarbon impacts.

None of the confirmatory samples had detectable headspace readings and showed no visual or olfactory signs of hydrocarbon impacts. Four of the samples (EX101-1, EX101-2, EX101-8 and EX101-10) were submitted to BV Labs for analysis of PHC F1-F4 and BTEX. A composite soil sample TCLP-101 was submitted to BV Labs for TCLP analysis (metals and inorganics) to determine waste classification. Analytical results are provided in Attachment B.

The analytical results for the confirmatory samples were compared to MECP Table 2 Standards (which are the potable generic site condition standards for residential/parkland/institutional land use and coarse textured soil, as set out in the MECP document entitled "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011). One of the confirmatory samples, EX101-1, had a detection of PHC F3 in excess of the MECP Table 2 Standard, with all other parameters non-detect or below the standard. All parameters for the other three samples were below the method detection limits (MDLs).

To address this result, additional soil was subsequently excavated from the east end of the floor of the original excavation, as described below.

FOLLOW-UP SOIL EXCAVATION

A follow-up soil excavation (EX102) took place on August 30, 2019. The follow-up excavation was hand dug by Rodren under Golder supervision, and the additional soil placed inside the bags containing the soil from the initial investigation. An additional 0.4m of soil was removed at the east end of the original investigation (see Figure 3) in an area 3.5m x 2m in size. Photographs are provided in Attachment A.

Three additional confirmatory samples (EX102-1, EX102-2 and EX102-3) were collected from base of the excavation, and screened for combustible vapours using an RKI Eagle II Gas Monitor calibrated to the manufacturer's specifications and methods. Each confirmatory sample was also assessed for visual and olfactory signs of hydrocarbon impacts.

None of the confirmatory samples had detectable headspace readings and showed no visual or olfactory signs of hydrocarbon impacts. One sample (EX102-1) was submitted to BV Labs for analysis of PHC F1-F4 and BTEX. Analytical results are provided in Attachment B.

The final confirmatory sample, EX102-1 was non-detect for all tested parameters, and so the excavation and removal of impacted soils at the skid steer was considered complete.

IMPACTED SOIL DISPOSAL

The TCPL results (Attachment B) were compared to O. Reg. 558, as amended, Schedule 4 Leachate Quality Criteria (Schedule 4 Criteria). Leachate concentrations met Schedule 4 Criteria and, as such, the soil is classified as non-hazardous, and was subsequently disposed at the Ignace municipal landfill.

CLOSURE

We trust that this letter report meets your immediate requirements. Please do not hesitate to contact us should you have any questions.

Yours Very Truly,

GOLDER ASSOCIATES LTD.



Peter Thwaites, BES (Hons.), C.Tech
Environmental Specialist



George Schneider , M.Sc., P.Geo.
Senior Geoscientist - Principal

PT/GWS/

Attachments: Figure 1 - Sketch Map Showing Impacted Soil Excavation Area IG_BH03 Drill Site
Figure 2 - Sample Locations for Initial Excavation "101" to 0.3m Depth – IG_BH03 Drill Site
Figure 3 - Sample Locations for Final Excavation "102" to 0.7m Depth – IG_BH03 Drill Site
Attachment A – Photographs
Attachment B – BV Lab Results

[https://golderassociates.sharepoint.com/sites/13226g/technical work bh03/wp01b site setup/09 - skidsteer excavation 14aug2019/report final/1671632a-2101-skid steer excavation_r1a.docx](https://golderassociates.sharepoint.com/sites/13226g/technical%20work/bh03/wp01b/site%20setup/09%20-%20skidsteer%20excavation%2014aug2019/report%20final/1671632a-2101-skid%20steer%20excavation_r1a.docx)

ATTACHMENT A

Photographs



Photo 1 – General view of the skid steer parking location area and stained soil, facing west.



Photo 2 – View of the initial excavation and impacted soil stored in soil bags

CLIENT

NWMO

CONSULTANT



YYYY-MM-DD 2019-09-17

TAKEN BY KB

CHECKED BY GWS

PROJECT

**Skid Steer Hydraulic Fluid Leak Confirmatory Sampling,
IG_BH03, Ignace, Ontario**

TITLE

Photographic Record

PROJECT No. 1671632A (2101)

FIGURE

A1



Photo 3 – View of follow-up excavation dig area prior to digging



Photo 4 – View of the completed follow-up excavation

CLIENT

NWMO

CONSULTANT



YYYY-MM-DD 2019-09-17

TAKEN BY PT

CHECKED BY GWS

PROJECT

**Skid Steer Hydraulic Fluid Leak Confirmatory Sampling,
IG_BH03, Ignace, Ontario**

TITLE

Photographic Record

PROJECT No. 1671632A (2101)

FIGURE

A2

ATTACHMENT B

BV Lab Results



Your Project #: 1671632 (2101)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 731068-01-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/08/28
Report #: R5858193
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N4962

Received: 2019/08/23, 09:00

Sample Matrix: Soil
Samples Received: 4

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	4	N/A	2019/08/27	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	4	2019/08/27	2019/08/28	CAM SOP-00316	CCME CWS m
Moisture	4	N/A	2019/08/24	CAM SOP-00445	Carter 2nd ed 51.2 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.

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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) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.



Your Project #: 1671632 (2101)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 731068-01-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/08/28
Report #: R5858193
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N4962
Received: 2019/08/23, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

=====

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BUREAU
VERITAS

BV Labs Job #: B9N4962
Report Date: 2019/08/28

Golder Associates Ltd
Client Project #: 1671632 (2101)
Site Location: Ignace, Ontario
Sampler Initials: KB

O.REG 153 PHCS, BTEX/F1-F4 (SOIL)

BV Labs ID		KPD693	KPD694	KPD695	KPD696		
Sampling Date		2019/08/14 08:30	2019/08/14 08:45	2019/08/14 09:45	2019/08/14 10:15		
COC Number		731068-01-01	731068-01-01	731068-01-01	731068-01-01		
	UNITS	EX101-1	EX101-2	EX101-8	EX101-10	RDL	QC Batch
Inorganics							
Moisture	%	7.2	3.0	3.5	2.6	1.0	6298599
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	6301375
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	6301375
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	6301375
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	6301375
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	0.040	6301375
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	0.040	6301375
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	6301375
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	6301375
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	20	<10	<10	<10	10	6302794
F3 (C16-C34 Hydrocarbons)	ug/g	520	<50	<50	<50	50	6302794
F4 (C34-C50 Hydrocarbons)	ug/g	81	<50	<50	<50	50	6302794
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		6302794
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	100	100	98	98		6301375
4-Bromofluorobenzene	%	101	103	100	100		6301375
D10-Ethylbenzene	%	107	102	102	95		6301375
D4-1,2-Dichloroethane	%	97	96	94	94		6301375
o-Terphenyl	%	99	93	94	97		6302794
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



BUREAU
VERITAS

BV Labs Job #: B9N4962
Report Date: 2019/08/28

Golder Associates Ltd
Client Project #: 1671632 (2101)
Site Location: Ignace, Ontario
Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KPD693
Sample ID: EX101-1
Matrix: Soil

Collected: 2019/08/14
Shipped:
Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6301375	N/A	2019/08/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6302794	2019/08/27	2019/08/28	Prabhjot Gulati
Moisture	BAL	6298599	N/A	2019/08/24	Mithunaa Sasitheepan

BV Labs ID: KPD694
Sample ID: EX101-2
Matrix: Soil

Collected: 2019/08/14
Shipped:
Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6301375	N/A	2019/08/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6302794	2019/08/27	2019/08/28	Prabhjot Gulati
Moisture	BAL	6298599	N/A	2019/08/24	Mithunaa Sasitheepan

BV Labs ID: KPD695
Sample ID: EX101-8
Matrix: Soil

Collected: 2019/08/14
Shipped:
Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6301375	N/A	2019/08/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6302794	2019/08/27	2019/08/28	Prabhjot Gulati
Moisture	BAL	6298599	N/A	2019/08/24	Mithunaa Sasitheepan

BV Labs ID: KPD696
Sample ID: EX101-10
Matrix: Soil

Collected: 2019/08/14
Shipped:
Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6301375	N/A	2019/08/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6302794	2019/08/27	2019/08/28	Prabhjot Gulati
Moisture	BAL	6298599	N/A	2019/08/24	Mithunaa Sasitheepan



BUREAU
VERITAS

BV Labs Job #: B9N4962

Report Date: 2019/08/28

Golder Associates Ltd

Client Project #: 1671632 (2101)

Site Location: Ignace, Ontario

Sampler Initials: KB

GENERAL COMMENTS

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

Package 1	1.0°C
-----------	-------

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9N4962

Report Date: 2019/08/28

QUALITY ASSURANCE REPORT

Golder Associates Ltd

Client Project #: 1671632 (2101)

Site Location: Ignace, Ontario

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6301375	1,4-Difluorobenzene	2019/08/27	103	60 - 140	100	60 - 140	98	%		
6301375	4-Bromofluorobenzene	2019/08/27	100	60 - 140	100	60 - 140	101	%		
6301375	D10-Ethylbenzene	2019/08/27	101	60 - 140	93	60 - 140	96	%		
6301375	D4-1,2-Dichloroethane	2019/08/27	101	60 - 140	97	60 - 140	94	%		
6302794	o-Terphenyl	2019/08/28	100	60 - 130	96	60 - 130	97	%		
6298599	Moisture	2019/08/24							4.7	20
6301375	Benzene	2019/08/27	84	60 - 140	83	60 - 140	<0.020	ug/g		
6301375	Ethylbenzene	2019/08/27	85	60 - 140	85	60 - 140	<0.020	ug/g		
6301375	F1 (C6-C10) - BTEX	2019/08/27					<10	ug/g	NC	30
6301375	F1 (C6-C10)	2019/08/27	91	60 - 140	94	80 - 120	<10	ug/g	NC	30
6301375	o-Xylene	2019/08/27	83	60 - 140	84	60 - 140	<0.020	ug/g		
6301375	p+m-Xylene	2019/08/27	83	60 - 140	84	60 - 140	<0.040	ug/g		
6301375	Toluene	2019/08/27	82	60 - 140	82	60 - 140	<0.020	ug/g		
6301375	Total Xylenes	2019/08/27					<0.040	ug/g		
6302794	F2 (C10-C16 Hydrocarbons)	2019/08/28	101	50 - 130	97	80 - 120	<10	ug/g	NC	30
6302794	F3 (C16-C34 Hydrocarbons)	2019/08/28	101	50 - 130	97	80 - 120	<50	ug/g	NC	30
6302794	F4 (C34-C50 Hydrocarbons)	2019/08/28	97	50 - 130	93	80 - 120	<50	ug/g	NC	30

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 $\leq 2 \times$ RDL).



BUREAU
VERITAS

BV Labs Job #: B9N4962

Report Date: 2019/08/28

Golder Associates Ltd

Client Project #: 1671632 (2101)

Site Location: Ignace, Ontario

Sampler Initials: KB

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, 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.



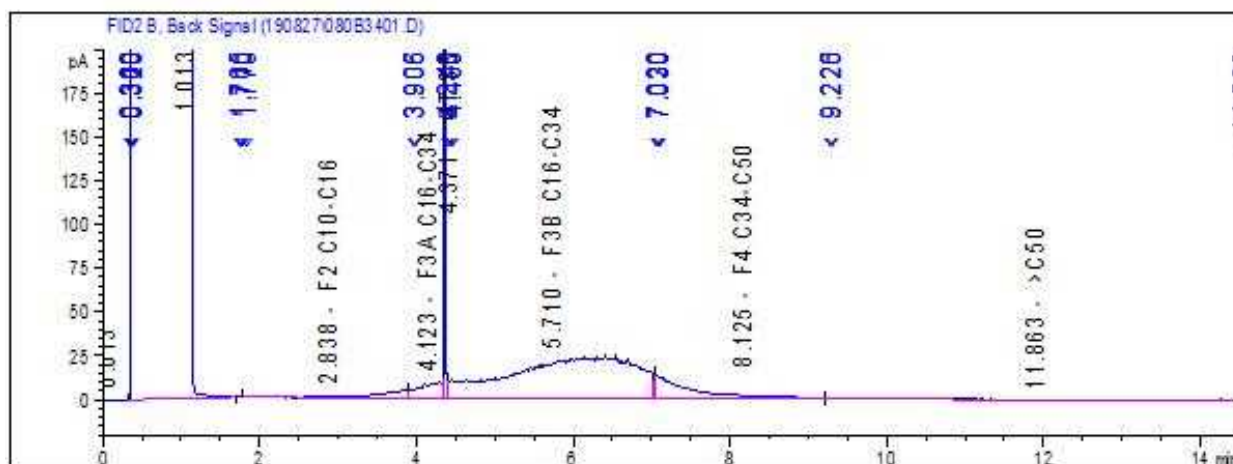
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlab.com

CHAIN OF CUSTODY RECORD

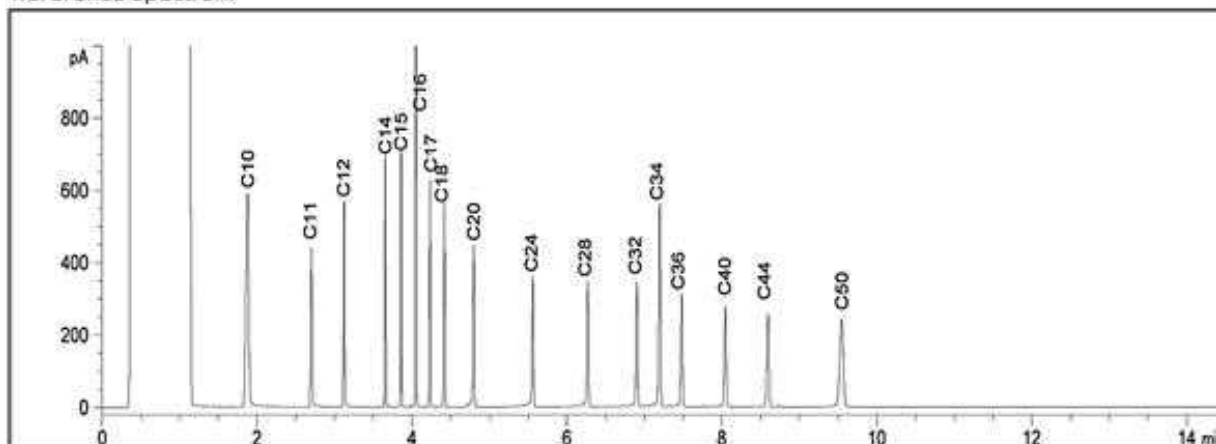
Page 1 of 1

INVOICE TO:						REPORT TO:						PROJECT INFORMATION:						Laboratory Use Only:											
Company Name: #21375 Golder Associates Ltd						Company Name: Natalie Solis Adrienne Kowalchuk						Quotation #: B80683						BV Labs Job #:						Bottle Order #:					
Attention: Accounts Payable						Attention: Natalie Solis						P.O.#:						731058											
Address: 210 Sheldon Drive						Address:						Project: 1671632(2101) KB						COC #:						Project Manager:					
Cambridge ON N1T 1A8												Project Name: IGNACE -						Ema Gitej											
Tel: (519) 620-8182 Fax:						Tel: Kbourdeau@golder.com						Site #: BH03						C#731058-01-01											
Email: AP_CustomerService@golder.com						Email: Natalie.Solis@golder.com						Sampled By: Kirk Bourdeau																	
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)												Other Regulations						Special Instructions											
<input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input checked="" type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input checked="" type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table _____												<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Other _____																	
Include Criteria on Certificate of Analysis (Y/N)?																													
Sample Barcode Label		Sample (Location) Identification				Date Sampled		Time Sampled		Matrix		Field Filtered (please circle): Metals / Hg / Cr VI																	
1		Ex 101-1				19/08/14		0830		Soil		NA ✓																	
2		Ex 101-2				↓		0845		Soil		✓																	
3		Ex 101-8				↓		0945		Soil		✓																	
4		Ex 101-10				↓		1015		Soil		✓																	
5																													
6																													
7																													
8																													
9																													
10																													
RELINQUISHED BY: (Signature/Print) Kirk Bourdeau						Date: (YY/MM/DD) 19/08/20		Time: 1705		RECEIVED BY: (Signature/Print) [Signature]						Date: (YY/MM/DD) 03/12/23		Time: 09:00		# jars used and not submitted		Laboratory Use Only							
																						Temperature (°C) on Receipt 21/3							
																						Custody Seal Present Intact Yes No							
* 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.																													
* 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.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.																													
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS																													

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C6 - C12

Diesel: C10 - C24

Jet Fuels: C6 - C16

Varsol: C8 - C12

Fuel Oils: C6 - C32

Creosote: C10 - C26

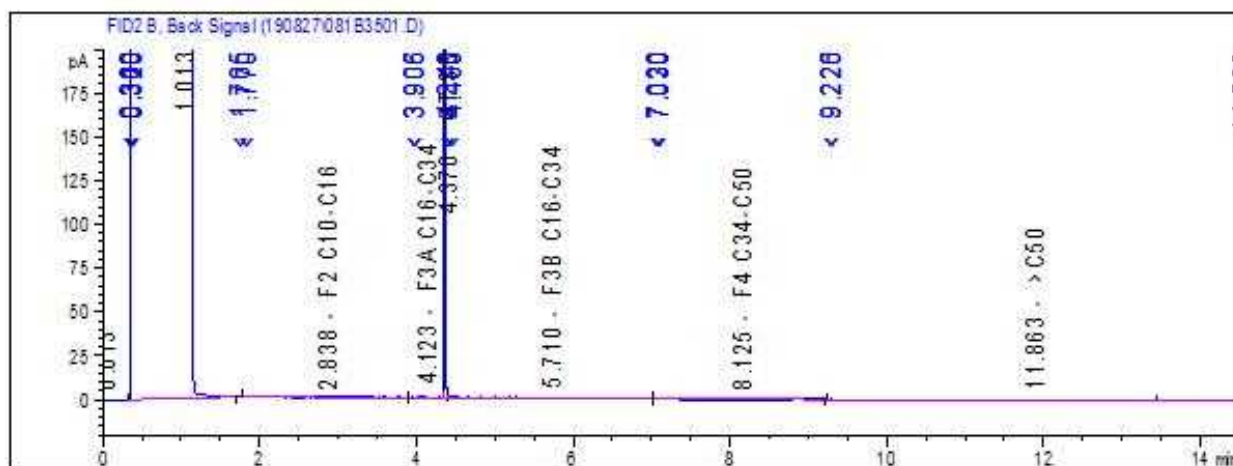
Kerosene: C8 - C16

Motor Oils: C16 - C50

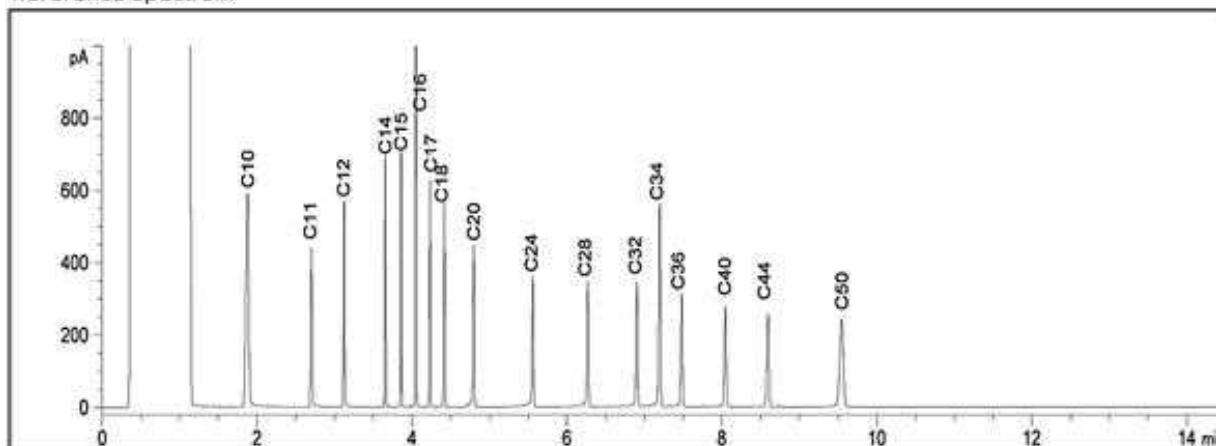
Asphalt: C18 - C50+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C6 - C12

Diesel: C10 - C24

Jet Fuels: C6 - C16

Varsol: C8 - C12

Fuel Oils: C6 - C32

Creosote: C10 - C26

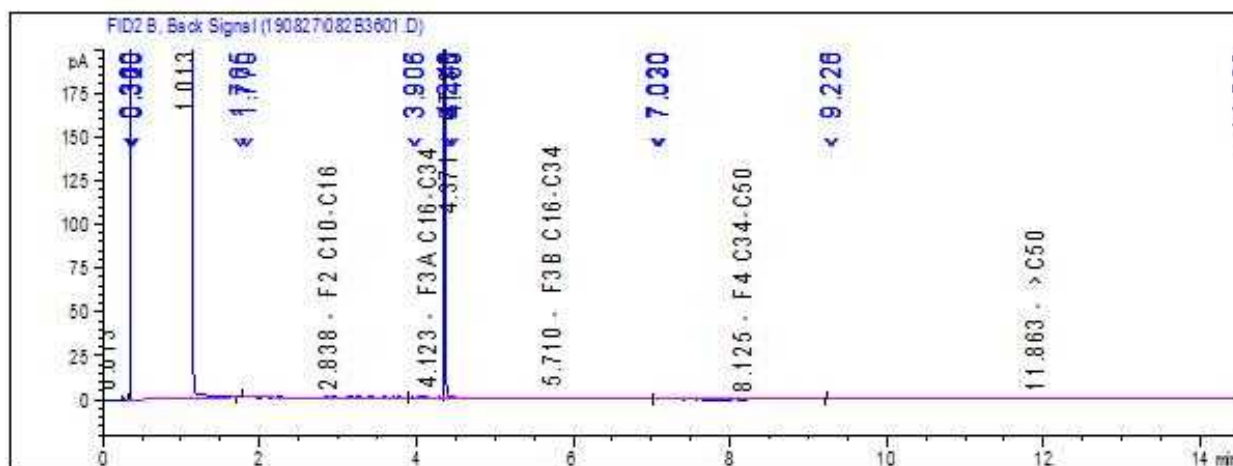
Kerosene: C8 - C16

Motor Oils: C16 - C50

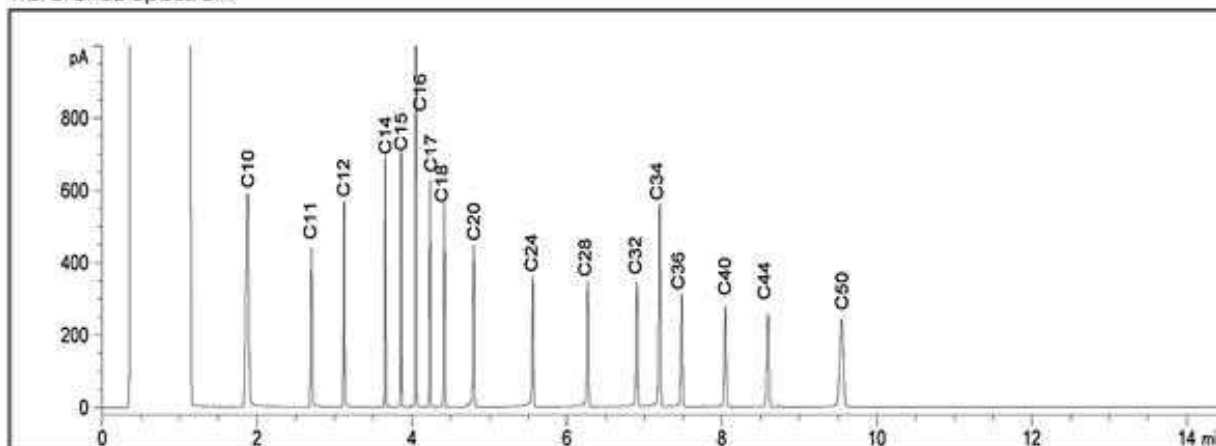
Asphalt: C18 - C50+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C6 - C12

Diesel: C10 - C24

Jet Fuels: C6 - C16

Varsol: C8 - C12

Fuel Oils: C6 - C32

Creosote: C10 - C26

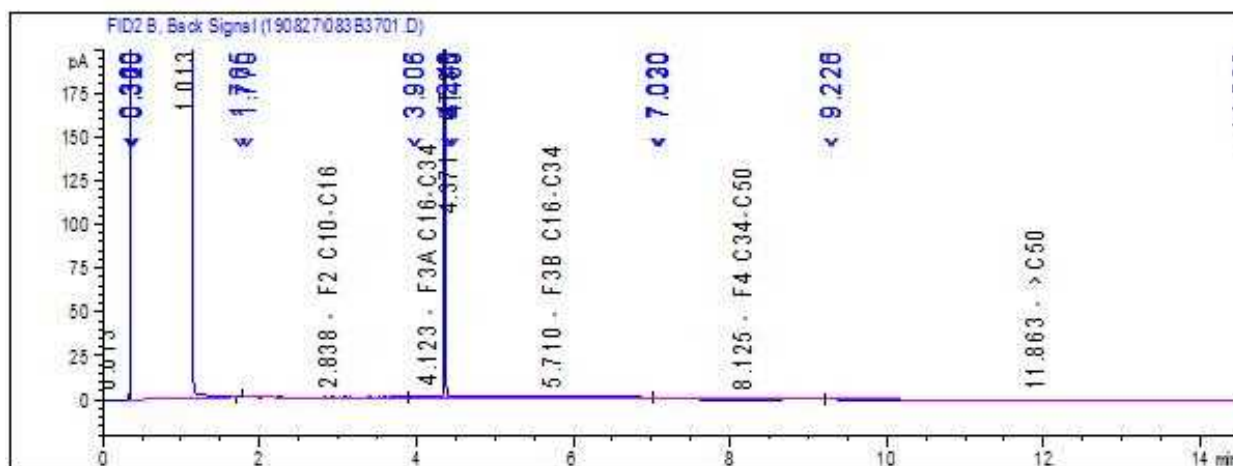
Kerosene: C8 - C16

Motor Oils: C16 - C50

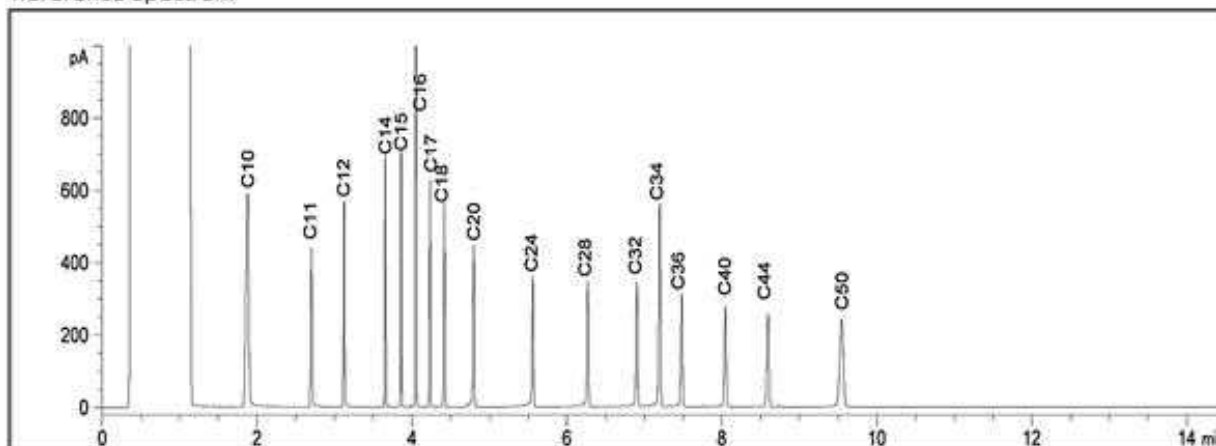
Asphalt: C18 - C50+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C6 - C12

Diesel: C10 - C24

Jet Fuels: C6 - C16

Varsol: C8 - C12

Fuel Oils: C6 - C32

Creosote: C10 - C26

Kerosene: C8 - C16

Motor Oils: C16 - C50

Asphalt: C18 - C50+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 1671632 (1700)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 646172-05-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/08/29
Report #: R5859805
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N4966

Received: 2019/08/23, 09:00

Sample Matrix: Soil
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2019/08/28	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2019/08/28	2019/08/29	CAM SOP-00449	SM 23 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2019/08/28	2019/08/28	CAM SOP-00447	EPA 6020B m
Nitrate(NO3) + Nitrite(NO2) in Leachate	1	N/A	2019/08/29	CAM SOP-00440	SM 23 4500-NO3I/NO2B
TCLP - % Solids	1	2019/08/27	2019/08/28	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2019/08/28	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2019/08/28	CAM SOP-00401	EPA 1311 Update I 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 #: 1671632 (1700)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 646172-05-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/08/29
Report #: R5859805
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N4966
Received: 2019/08/23, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

=====

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 #: B9N4966

Report Date: 2019/08/29

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

O.REG 558 TCLP INORGANICS PACKAGE (SOIL)

BV Labs ID		KPD702		
Sampling Date		2019/08/14 11:00		
COC Number		646172-05-01		
	UNITS	TCLP-101	RDL	QC Batch
Inorganics				
Leachable Fluoride (F-)	mg/L	0.19	0.10	6304001
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	6304003
Leachable Nitrite (N)	mg/L	<0.10	0.10	6304004
Leachable Nitrate (N)	mg/L	<1.0	1.0	6304004
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	6304004
Metals				
Leachable Arsenic (As)	mg/L	<0.2	0.2	6304051
Leachable Barium (Ba)	mg/L	<0.2	0.2	6304051
Leachable Boron (B)	mg/L	0.1	0.1	6304051
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	6304051
Leachable Chromium (Cr)	mg/L	<0.1	0.1	6304051
Leachable Lead (Pb)	mg/L	<0.1	0.1	6304051
Leachable Mercury (Hg)	mg/L	<0.001	0.001	6304051
Leachable Selenium (Se)	mg/L	<0.1	0.1	6304051
Leachable Silver (Ag)	mg/L	<0.01	0.01	6304051
Leachable Uranium (U)	mg/L	<0.01	0.01	6304051
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9N4966

Report Date: 2019/08/29

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

O.REG 558 TCLP LEACHATE PREPARATION (SOIL)

BV Labs ID		KPD702		
Sampling Date		2019/08/14 11:00		
COC Number		646172-05-01		
	UNITS	TCLP-101	RDL	QC Batch
Inorganics				
Final pH	pH	4.81		6302252
Initial pH	pH	7.98		6302252
TCLP - % Solids	%	100	0.2	6302247
TCLP Extraction Fluid	N/A	FLUID 1		6302251
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9N4966

Report Date: 2019/08/29

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KPD702
Sample ID: TCLP-101
Matrix: Soil

Collected: 2019/08/14
Shipped:
Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (WAD) in Leachates	SKAL/CN	6304003	N/A	2019/08/28	Barbara Kalbasi Esfahani
Fluoride by ISE in Leachates	ISE	6304001	2019/08/28	2019/08/29	Neil Dassanayake
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	6304051	2019/08/28	2019/08/28	Arefa Dabhad
Nitrate(NO3) + Nitrite(NO2) in Leachate	LACH	6304004	N/A	2019/08/29	Nimarta Singh
TCLP - % Solids	BAL	6302247	2019/08/27	2019/08/28	Jian (Ken) Wang
TCLP - Extraction Fluid		6302251	N/A	2019/08/28	Jian (Ken) Wang
TCLP - Initial and final pH	PH	6302252	N/A	2019/08/28	Jian (Ken) Wang



BUREAU
VERITAS

BV Labs Job #: B9N4966

Report Date: 2019/08/29

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

GENERAL COMMENTS

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

Package 1	1.0°C
-----------	-------

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9N4966

Report Date: 2019/08/29

QUALITY ASSURANCE REPORT

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
6304001	Leachable Fluoride (F-)	2019/08/29	95	80 - 120	100	80 - 120	<0.10	mg/L	0.93	25	<0.10	mg/L
6304003	Leachable WAD Cyanide (Free)	2019/08/28	87	80 - 120	101	80 - 120	<0.0020	mg/L	NC	20	<0.010	mg/L
6304004	Leachable Nitrate (N)	2019/08/29	100	80 - 120	99	80 - 120	<1.0	mg/L	NC	25	<1.0	mg/L
6304004	Leachable Nitrate + Nitrite (N)	2019/08/29	103	80 - 120	100	80 - 120	<1.0	mg/L	NC	25	<1.0	mg/L
6304004	Leachable Nitrite (N)	2019/08/29	113	80 - 120	104	80 - 120	<0.10	mg/L	NC	25	<0.10	mg/L
6304051	Leachable Arsenic (As)	2019/08/28	101	80 - 120	101	80 - 120			NC	35	<0.2	mg/L
6304051	Leachable Barium (Ba)	2019/08/28	NC	80 - 120	98	80 - 120			1.8	35	<0.2	mg/L
6304051	Leachable Boron (B)	2019/08/28	99	80 - 120	92	80 - 120			NC	35	<0.1	mg/L
6304051	Leachable Cadmium (Cd)	2019/08/28	103	80 - 120	98	80 - 120			NC	35	<0.05	mg/L
6304051	Leachable Chromium (Cr)	2019/08/28	95	80 - 120	96	80 - 120			NC	35	<0.1	mg/L
6304051	Leachable Lead (Pb)	2019/08/28	94	80 - 120	94	80 - 120			NC	35	<0.1	mg/L
6304051	Leachable Mercury (Hg)	2019/08/28	100	80 - 120	97	80 - 120			NC	35	<0.001	mg/L
6304051	Leachable Selenium (Se)	2019/08/28	100	80 - 120	98	80 - 120			NC	35	<0.1	mg/L
6304051	Leachable Silver (Ag)	2019/08/28	96	80 - 120	92	80 - 120			NC	35	<0.01	mg/L
6304051	Leachable Uranium (U)	2019/08/28	99	80 - 120	94	80 - 120			NC	35	<0.01	mg/L

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.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

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.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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 $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: B9N4966

Report Date: 2019/08/29

Golder Associates Ltd

Client Project #: 1671632 (1700)

Site Location: Ignace, Ontario

Sampler Initials: KB

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, 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.

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #21375 Golder Associates Ltd		Company Name: <u>Adrian</u>		Quotation #: B70916		Maxxam Job #:	
Attention: Accounts Payable		Attention: <u>Michael Guncinger</u> <u>A Kowalchuk</u>		P.O. #: 1671632 (1700)		Bottle Order #:	
Address: 210 Sheldon Drive		Address:		Project: <u>IGNACE</u>		COC #:	
Cambridge ON N1T 1A8		Tel: <u>A Kowalchuk @ golder.com</u>		Project Name: <u>AWOS</u>		Project Manager:	
(519) 620-8182 x Fax		Email: <u>Michael_Guncinger@golder.com</u>		Site #: <u>Kirk Board</u>		Ema Gitej	
Tel: AP_CustomerService@golder.com		Email:		Sampled By:		C#646172-05-01	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY				Turnaround Time (TAT) Required:			
Regulation 153 (2011)		Other Regulations		Special Instructions		Please provide advance notice for rush projects	
<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		<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input checked="" type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality <input type="checkbox"/> PWGO <input type="checkbox"/> Other				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. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)	
Include Criteria on Certificate of Analysis (Y/N)?							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr-VI	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	# of Bottles
1	TCIP-101	19/08/14	11:00	Soil	NA	<input checked="" type="checkbox"/> Soluble Phosphorus (Metals only) (Pb, Ni, Cu, Mn) <input checked="" type="checkbox"/> Lead <input checked="" type="checkbox"/> Lead (Soluble) by Acid Digestion <input checked="" type="checkbox"/> Cadmium <input checked="" type="checkbox"/> Chromium (Total) <input checked="" type="checkbox"/> Chromium (Soluble) <input checked="" type="checkbox"/> Copper <input checked="" type="checkbox"/> Iron <input checked="" type="checkbox"/> Manganese <input checked="" type="checkbox"/> Mercury <input checked="" type="checkbox"/> Nickel <input checked="" type="checkbox"/> Silver <input checked="" type="checkbox"/> Zinc <input checked="" type="checkbox"/> Zinc (Soluble) by Acid Digestion <input checked="" type="checkbox"/> Zinc (Total) <input checked="" type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Barium <input checked="" type="checkbox"/> Bismuth <input checked="" type="checkbox"/> Boron <input checked="" type="checkbox"/> Bromine <input checked="" type="checkbox"/> Cadmium <input checked="" type="checkbox"/> Calcium <input checked="" type="checkbox"/> Chlorine <input checked="" type="checkbox"/> Cobalt <input checked="" type="checkbox"/> Chromium <input checked="" type="checkbox"/> Copper <input checked="" type="checkbox"/> Fluorine <input checked="" type="checkbox"/> Gallium <input checked="" type="checkbox"/> Germanium <input checked="" type="checkbox"/> Iodine <input checked="" type="checkbox"/> Iron <input checked="" type="checkbox"/> Lead <input checked="" type="checkbox"/> Lithium <input checked="" type="checkbox"/> Magnesium <input checked="" type="checkbox"/> Manganese <input checked="" type="checkbox"/> Mercury <input checked="" type="checkbox"/> Molybdenum <input checked="" type="checkbox"/> Nickel <input checked="" type="checkbox"/> Nitrogen <input checked="" type="checkbox"/> Potassium <input checked="" type="checkbox"/> Selenium <input checked="" type="checkbox"/> Silver <input checked="" type="checkbox"/> Sodium <input checked="" type="checkbox"/> Strontium <input checked="" type="checkbox"/> Sulfur <input checked="" type="checkbox"/> Tantalum <input checked="" type="checkbox"/> Tellurium <input checked="" type="checkbox"/> Thallium <input checked="" type="checkbox"/> Tin <input checked="" type="checkbox"/> Vanadium <input checked="" type="checkbox"/> Zirconium <input checked="" type="checkbox"/> Zinc	3
2							
3							
4							
5							
6							
7							
8							
9							
10							
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time
Kirk Bourdeau				C. H. H. H.		20/08/23	09:00
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'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.MAXXAM.CA/TERMS.							
* 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 HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.							
SAMPLER MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM							



Your Project #: 1671632A (2101)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 646310-05-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/09/10
Report #: R5874242
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B906829

Received: 2019/09/05, 10:01

Sample Matrix: Soil
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydrocarbons F2-F4 in Soil (1)	1	2019/09/07	2019/09/09	CAM SOP-00316	CCME CWS m
Moisture	1	N/A	2019/09/07	CAM SOP-00445	Carter 2nd ed 51.2 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.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.



Your Project #: 1671632A (2101)
Site#: BH03
Site Location: Ignace, Ontario
Your C.O.C. #: 646310-05-01

Attention: Natalie Solis

Golder Associates Ltd
210 Sheldon Drive
Cambridge, ON
CANADA N1T 1A8

Report Date: 2019/09/10
Report #: R5874242
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O6829
Received: 2019/09/05, 10:01

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

=====

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

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BUREAU
VERITAS

BV Labs Job #: B906829

Report Date: 2019/09/10

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

RESULTS OF ANALYSES OF SOIL

BV Labs ID		KRS478		
Sampling Date		2019/08/30 15:00		
COC Number		646310-05-01		
	UNITS	EX 102-1	RDL	QC Batch
Inorganics				
Moisture	%	14	1.0	6320460
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B906829
Report Date: 2019/09/10

Golder Associates Ltd
Client Project #: 1671632A (2101)
Site Location: Ignace, Ontario
Sampler Initials: PT

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID				KRS478		
Sampling Date				2019/08/30 15:00		
COC Number				646310-05-01		
	UNITS	Criteria	Criteria-2	EX 102-1	RDL	QC Batch
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	10	150	<10	10	6320437
F3 (C16-C34 Hydrocarbons)	ug/g	240	1300	<50	50	6320437
F4 (C34-C50 Hydrocarbons)	ug/g	120	5600	<50	50	6320437
Reached Baseline at C50	ug/g	-	-	Yes		6320437
Surrogate Recovery (%)						
o-Terphenyl	%	-	-	88		6320437
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)						
Table 1: Full Depth Background Site Condition Standards						
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use						
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)						
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition						
Soil - Agricultural or Other Property Use - Medium and Fine Textured Soil						



BUREAU
VERITAS

BV Labs Job #: B9O6829

Report Date: 2019/09/10

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

TEST SUMMARY

BV Labs ID: KRS478
Sample ID: EX 102-1
Matrix: Soil

Collected: 2019/08/30
Shipped:
Received: 2019/09/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6320437	2019/09/07	2019/09/09	Barbara Wowk
Moisture	BAL	6320460	N/A	2019/09/07	Gurpreet Kaur



BUREAU
VERITAS

BV Labs Job #: B9O6829

Report Date: 2019/09/10

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

GENERAL COMMENTS

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

Package 1	8.0°C
-----------	-------

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9O6829

Report Date: 2019/09/10

QUALITY ASSURANCE REPORT

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6320437	o-Terphenyl	2019/09/09	96	60 - 130	95	60 - 130	92	%		
6320437	F2 (C10-C16 Hydrocarbons)	2019/09/10	92	50 - 130	90	80 - 120	<10	ug/g	NC	30
6320437	F3 (C16-C34 Hydrocarbons)	2019/09/10	95	50 - 130	95	80 - 120	<50	ug/g	NC	30
6320437	F4 (C34-C50 Hydrocarbons)	2019/09/10	100	50 - 130	96	80 - 120	<50	ug/g	NC	30
6320460	Moisture	2019/09/07							0.64	20

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 $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: B906829

Report Date: 2019/09/10

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Service 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 TO:

#21375 Golder Associates Ltd

Company Name:

Golder Associates Ltd

Attention:

Accounts Payable

Address:

210 Sheldon Drive
Cambridge ON N1T 1A8

Tel:

(519) 620-8182 x

Email:

AP_CustomerService@golder.com

REPORT TO:

GOLDER ASSOCIATES

Attention:

Michael Gensinger Adrian Kowalchuk,
George Schneider
George_Schneider@golder.com

Address:

Adrian_Kowalchuk@golder.com

Tel:

Michael_Gensinger@golder.com

Email:

PThwaites@golder.com

PROJECT INFORMATION:

B70910 B80683

Quotation #:

1671632A(210)

P.O. #:

1671632(1700) 1671632A

Project:

IG-B403

Project Name:

IG-B403

Site #:

PThwaites

Submitted By:

PThwaites

Laboratory Use Only:

Maxxam Job #:

Bottle Order #:

646310

COC #:

Project Manager:

Erna Gitej

C#46310-05-01

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

Regulation 153 (2011)

☒ Table 1
☒ Table 2
☐ Table 3
☐ Table

☐ Res/Park
☐ Ind/Comm
☐ Agr/Other

☒ Medium/Fine
☐ Coarse
☐ For RSC

☐ CCME
☐ Reg 558
☐ MISA
☐ PWQO
☐ Other

☐ Sanitary Sewer Bylaw
☐ Storm Sewer Bylaw
☐ Municipality

Other Regulations

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)?

Y

Sample Barcode Label

Sample (Location) Identification

Date Sampled

Time Sampled

Matrix

Field Filtered (please circle):

Metals / Hg / Cr / V

Select Dissolved Metals by ICP/MS (incl SiO2)

Total Sulphur by Axiom ICP

Sulphide

Project Arsenic

Total Ammonia and Ammonium

Total Phosphorus (Colourimetric)

Field pH

Field Temperature

PhC F2-F4

Organic Nitrogen

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

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.

Job Specific Rush TAT (if applies to entire submission)

Date Required:

Time Required:

Rush Confirmation Number:

(call lab for #)

of Bottles

Comments

05-Sep-19 10:01

Erna Gitej

B906829

SWE

ENV-803

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

Time Sensitive

Temperature (°C) on Receipt

Custody Seal Present

Yes

No

Peter Thwaites / Peter Thwaites

19/09/02

16:00

John Colene Curran

20/09/02

10:01

0

8/8/8

Intact

White: Maxxa

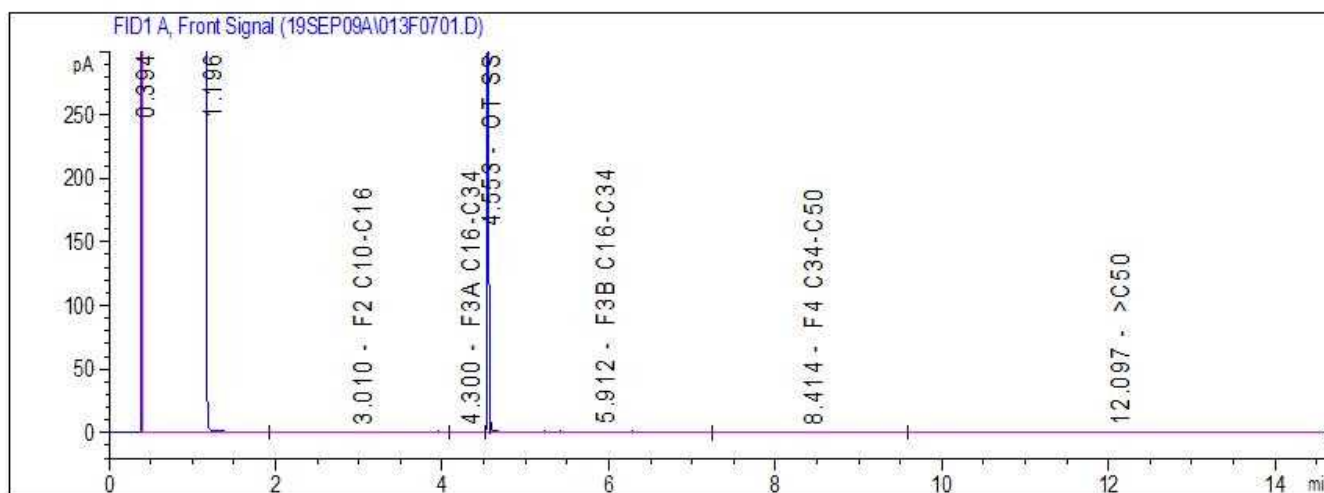
Yellow: Client

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'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.MAXXAM.CA/TERMS.

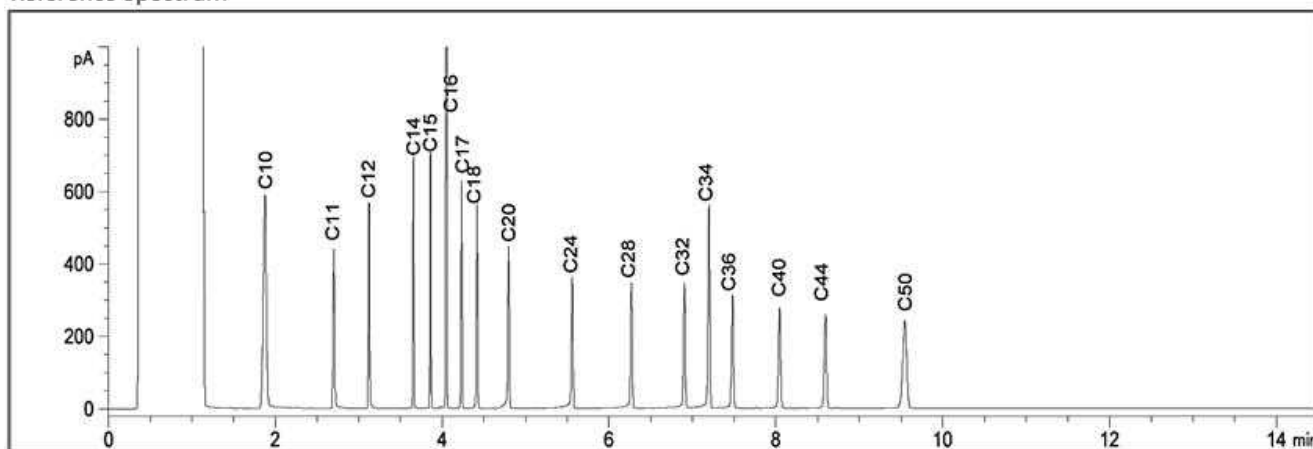
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: **C6 - C12**

Diesel: **C10 - C24**

Jet Fuels: **C6 - C16**

Varsol: **C8 - C12**

Fuel Oils: **C6 - C32**

Creosote: **C10 - C26**

Kerosene: **C8 - C16**

Motor Oils: **C16 - C50**

Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



BUREAU
VERITAS

BV Labs Job #: B9O6829

Report Date: 2019/09/10

Golder Associates Ltd

Client Project #: 1671632A (2101)

Site Location: Ignace, Ontario

Sampler Initials: PT

Exceedence Summary Table – Reg153/04 T1-Soil/Res

Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

Exceedence Summary Table – Reg153/04 T2-Soil/Agr-F/M

Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

APPENDIX C

**Site Decommissioning Checklist –
IG_BH03**

IG_BH03 - Ignace Drilling and Testing - Site Decommissioning Checklist

1671632

Item No.	Item	General Requirements	Date Completed	Checked by	Verified by	Comments
1.0	SITE PREPARATION					
1.1	Drill pad	Drill pad cleaned of debris and adequately graded.	July 7, 2020	ATK	GWS	Additional gravel placed at drill collar to infill drill sump.
1.3	General site levelling	General site cleaned of debris and adequately graded.	July 7, 2020	ATK	GWS	
1.4	General Site Condition	Site is free of oil sheens and staining.	July 8, 2020	ATK	GWS	
2.0	FENCING					
2.1	Silt fencing	Silt fencing removed from site.	July 7, 2020	ATK	GWS	
2.2	Snow fencing	Silt fencing removed from site.	July 7, 2020	ATK	GWS	
2.3	Modulok security fencing	Security fencing dismantled and removed from site.	Dec. 4, 2019	ATK	GWS	
3.0	OFFICE TRAILERS					
3.1	Trailer 1 (Golder)	Trailer removed from site.	Nov. 26, 2019	ATK	GWS	
3.2	Trailer 2 (NWMO)	Trailer removed from site.	Nov. 26, 2019	ATK	GWS	
3.3	Trailer 3 (Rodren)	Trailer removed from site.	Nov. 26, 2019	ATK	GWS	
4.0	CORE LOGGING AND STORAGE					
4.1	Core Logging Shipping Container	Core Logging Shipping Container removed from site.	Nov. 26, 2019	ATK	GWS	
4.2	Core Logging Table	Core logging table put away for storage.	Sept. 20, 2019	ATK	GWS	
4.3	Camera Racking	Camera tracking put away for storage.	Sept. 20, 2019	ATK	GWS	
4.4	Core Storage Shipping container	Core storage shipping container removed from site.	Nov. 26, 2019	ATK	GWS	
4.5	Commercial Refrigerator	Refrigerators removed from site.	Nov. 23, 2019	ATK	GWS	Transferred for use at IG_BH02
5.0	COMMUNICATIONS					
5.1	Satellite phone	Satellite phone removed from site.	Nov. 30, 2019	ATK	GWS	
5.2	Cellular internet	Cellular Internet Wi-Fi network removed from site.	Nov. 26, 2019	ATK	GWS	Transferred for use at IG_BH02
6.0	GENERATOR					
6.1	Generator	Generator removed from site.	Nov. 26 2019	ATK	GWS	

Item No.	Item	General Requirements	Date Completed	Checked by	Verified by	Comments
6.2	Secondary containment	Secondary spill containment removed from site.	Nov. 26, 2019	ATK	GWS	
6.3	Power distribution	Power distribution cables and panels removed from site.	Jul. 7, 2020	ATK	GWS	Majority removed in Nov. 2019. Remaining cables removed after ground thawed.
7.0	LIGHT TOWERS					
7.1	Light Tower	All light towers removed from site.	Nov. 26, 2019	ATK	GWS	
7.2	Secondary containment	All secondary spill containments for light towers removed from site.	Nov. 26, 2019	ATK	GWS	
8.0	FUEL STORAGE					
8.1	Fuel tank	Fuel Tank removed from site.	Nov. 26, 2019	ATK	GWS	
8.2	Secondary containment	Secondary spill containment removed from site.	Nov. 26, 2019	ATK	GWS	
8.3	Protective barricade	Protective barricades removed from site.	Nov. 26, 2019	ATK	GWS	
9.0	SANITARY FACILITIES					
9.1	Washroom	Washroom removed from site.	Nov. 26, 2019	ATK	GWS	
9.2	Water tank	Water tank removed from site.	Nov. 26, 2019	ATK	GWS	
9.3	Septic tank	Septic tank removed from site.	Nov. 26, 2019	ATK	GWS	
9.3	Temporary Washroom Facilities	Temporary washroom facilities removed from site.	Nov. 26, 2019	ATK	GWS	
10.0	GARBAGE BINS					
10.1	Garbage Bin	Garbage bin removed from site.	Dec. 4, 2019	ATK	GWS	
10.2	Recycling Bin	Recycle bin removed from site.	Dec. 4, 2019	ATK	GWS	
11.0	WELL HEAD					
11.1	Well Head Survey	Well head casing reference and Westbay casing is surveyed to benchmark.	Jan. 14, 2020	ATK	GWS	
11.2	Well Head Security	Well head protective casing is installed, painted for visibility, and locked for security.	Dec. 10, 2019	ATK	GWS	
12.0	OTHER					

IG_BH03 - Ignace Drilling and Testing - Site Decommissioning Checklist

1671632

Item No.	Item	General Requirements	Date Completed	Checked by	Verified by	Comments
12.1	Post-Thaw Site Condition	Post-thaw inspection for garbage and debris.	July 8, 2020	ATK	GWS	
12.2	Drill Rig	Removed from Drill Pad	Nov. 29, 2019	ATK	GWS	Transferred for use at IG_BH02
12.3	Drill Rig Foundation	Secondary containment and Timbers removed, Drill pad leveled	Nov. 30, 2019	ATK	GWS	

Completed by:

Adrian Kowalchuk

July 08, 2020

Adrian Kowalchuk (Golder)

Date:

George Schneider

Verified by:

August 13, 2020

George Schneider

Date:



golder.com