PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT

179 Mellanby Ave. & 56 Main St. West, Port Colborne

Project Location:
179 Mellanby Ave,
56 Main St. W.
Port Colborne, ON
L3K 3T9

Prepared For:
ePrime Construction Management
14 Wilfrid Laurier Cres.
St. Catharines, ON
L2P 0A1

NIAGARA SOILS SOLUTIONS LTD.

Prepared By:
Niagara Soils Solutions Ltd.
3300 Merrittville Highway, Unit 5
Thorold, ON
L2V 4Y6

Date: November 8th, 2022
NSSL File No.: NS2290-02

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APPENDICES

1.0 INTRODUCTION & SCOPE OF WORK

Niagara Soils Solutions Ltd. [NSSL] was retained by ePrime Construction Management to complete a preliminary Phase Two Environmental Site Assessment of the properties located at 179 Mellanby Avenue and 56 Main Street West in the City of Port Colborne, Ontario. The environmental investigation was recommended following the completion of NSSL's recent Phase One ESA report [October 2022] that documented the presence of fill material across the two properties and a historic paint shop within the southeastern part of the 179 Mellanby lot, and an underground storage tank [UST] noted within the roadway along the western property line. The preliminary Phase Two ESA was completed in general accordance with the requirements of O. Reg 153/04 as amended. The scope of work completed was as follows:

- Underground utility service locates were completed using Ontario One Call and private locating service.
- The preliminary Phase Two ESA work and excess soils assessment was completed in conjunction with a concurrent geotechnical investigation completed by Niagara Testing and Inspection Ltd.
- Five [5] boreholes were drilled across the study site within the three [3] APEC areas [fill material, paint shop and UST]. One [1] borehole was completed via hand auguring/shovel.
- All test locations were analysed for the presence of fill material with soil samples from each location submitted for potential contaminants of concern.
- One [1] soil sample from each testing location was also evaluated for compliance against O. Reg 406/19 On-site and Excess Soil Management to provide initial insight regarding disposal of excess soil that may be generated for site re-development.
- Bedrock was encountered within BH1 – BH5 at approximately 0.5 – 0.7 m below ground surface [bgs].
- Six [6] select soil samples were submitted to AGAT Labs Ltd. for analysis of pH, Petroleum Hydrocarbons [PHCs] F1-F4, Benzene, Toluene, Ethylbenzene, and Xylene [BTEX] and Metals.
- Groundwater was not investigated at this time.

2.0 INVESTIGATION METHODOLOGY

2.1 Applicable Site Condition Standard

2.1.1 O. Reg 153/04

Under O. Reg. 153/04 as amended, the Ministry of the Environment, Conservation and Parks [MECP] has outlined Site Condition Standards [SCS] in the document "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" dated April 15, 2011. The SCS applicable to the preliminary Phase Two ESA property has been evaluated based upon the following rationale:

Property Use	Mixed commercial & residential
Grain Size	As per on-site field notes and indicated on the borehole logs the grain size was determined to be coarse textured soils.
Water Wells	Domestic water wells were not identified within 250 metres [m] of the Phase Two Property. Redevelopment of the site will be serviced by municipal water.
Within 30 m of a Waterbody	In accordance with O. Reg. 153/04, the lot does not include land that is within 30 m of a waterbody.
Depth to Bedrock	Based on the borehole results, there is less than 2 m of soil between ground surface and the top of the bedrock surface at the site.
pH	Soil pH values were reported between 7.07 and 7.36 [Total Average of 7.21] in the native soil samples.
Environmentally Sensitive Area	The Phase Two Property has not been identified to be within an environmentally sensitive area.
Area of Natural Significance	The Phase Two Property is not classified as an environmentally sensitive area under O. Reg. 153/04 as amended, as the Phase Two Property does not include land, or is within 30 m of land, that would be classified as an area of natural significance as defined by O. Reg. 153/04 as amended.

Therefore Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional [R/P/I] property use, coarse-textured soils were applied to the study site.

2.1.2 O. Reg 406/19

Table 7.1 Full Depth Excess Soil Quality Standards for Shallow Soils in a Non-Potable Ground Water Condition were utilized when considering the need to dispose of any excess soil generated during site re-development.

2.2 Soil Sampling

Seven [7] samples were collected from boreholes, BH1 to BH6, with six [6] "worst-case" samples submitted for analysis. Recovered soil samples were immediately logged for a description of soil type, moisture content, colour, texture, and visual evidence of impacts. Samples to be subjected to laboratory analyses were immediately placed into laboratory-supplied sample jars and stored in a cooler with ice.

Soil samples intended for Volatile Organic Compounds [VOC] and F1 fractions of Petroleum Hydrocarbon analysis were collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes, and sealed using Teflon lined septa lids. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontracting laboratory, AGAT Laboratories Ltd. [AGAT] in Stoney Creek, Ontario. The samples were transported and submitted to AGAT following Chain of Custody [COC] protocols for chemical analyses.

The soil sample analyses were completed by AGAT., located at 903 Barton Street, Stoney Creek, ON. AGAT is accredited by the Canadian Association for Laboratory Accreditation [CALA] in accordance with ISO/IEC 17025:1999 – "General Requirements for the Competence of Testing and Calibration Laboratories" for all the parameters analyzed during this investigation.

2.3 Quality Assurance and Quality Control Measures

All soil samples submitted as part of this Preliminary Phase Two ESA investigation were handled in accordance with laboratory analytical protocols in regard to holding time, preservation method, storage requirements, and container type. A Certificate of Analysis has been received for each sample submitted for analysis, and all Certificates of Analysis are appended to this report. The quality of the field data collected during this Preliminary Phase Two ESA are considered to be sufficient to meet the overall objective of this study. All activities completed as part of this Preliminary Phase Two ESA were conducted as per applicable regulatory requirements.

2.4 Soil Stratigraphy

Drilling field logs, as completed by NTIL are provided in Appendix A. Stratigraphy was generally described as a thin veneer of topsoil and gravel fill overlying a 'reworked' sandy silt to auger refusal at depths of about 0.5 to 0.7 m over Bedrock [Limestone] to borehole termination depth 4.1 metres below ground surface.

2.5 Soil Analyses

Soil sampling was completed on October 19th, 2022. Select samples were submitted to AGAT Laboratories Ltd. for analysis of pH, Petroleum Hydrocarbons [PHCs] F1-F4, Benzene, Toluene, Ethylbenzene, and Xylene [BTEX] and Metals. Reported results against O. Reg 153/04 and O. Reg 406/19 are summarized below with full laboratory reports provided in Appendix B.

O. Reg 153/04

When the soil test results were compared to Ontario Regulation 153/04 Table 7 for residential land use purposes all six samples exceeded for Metals, specifically either the Lead or Nickel parameters as shown below. All other parameters met the applicable criteria.

Sample Description	G / S Table 7 R/P/I	BH1	BH2	BH3	BH4	BH5	BH6
Lead	120 ug/g	88	64	**196**	**294**	**166**	**222**
Nickel	100 ug/g	**279**	**135**	**338**	**469**	**351**	**541**

R/P/I = residential/parkland/institutional

O. Reg 406/19

Six [6] samples from across the study lots were considered to be representative of the varying depths of excess soil material that could be removed from the site during site redevelopment. As the exact volume of soil material generated is currently unknown, additional samples may be required to comply with applicable regulations. Additionally, leachate analysis was not conducted on the soil samples at this time.

When the soil test results were compared to Ontario Regulation 406/19 Table 7.1 Full Depth Excess Soil Quality Standards for Shallow Soils in a Non-Potable Groundwater Condition for residential land use purposes all samples exceeded for Metals [either Lead or Nickel parameters or both]. When evaluated to industrial criteria only BH2 met applicable criteria.

Sample Description	G / S Table 7.1 R/P/I	BH1	BH2	BH3	BH4	BH5	BH6
Lead	120 ug/g	88	64	**196**	**294**	**166**	**222**
Nickel	100 ug/g	**279**	**135**	**338**	**469**	**351**	**541**

R/P/I = residential/parkland/institutional

Sample Description	G / S Table 7.1 I/C/C	BH1	BH2	BH3	BH4	BH5	BH6
Lead	120 ug/g	88	64	**196**	**294**	**166**	**222**
Nickel	270 ug/g	**279**	135	**338**	**469**	**351**	**541**

I/C/C = Industrial/Commercial/Community

3.0 CONCLUSIONS

Based on NSSL's preliminary Phase Two ESA and Excess Soils Assessment it appears that the fill material across both properties is impacted by Metals [Lead and Nickel] ranging in depth from surface 0 m to shallow bedrock 0.5 m-0.7 m below ground surface. As the impacted material **does not** meet O. Reg 153/04 standards the soil material must be excavated and removed prior to site redevelopment.

As the material **does not** meet O. Reg 406/19 Residential/Parkland/Institutional nor Industrial/Commercial/Community criteria for re-use purposes, the soil material must be either disposed of at a Ministry of the Environment, Conservation and Parks approved landfill or placed on a re-use site where it may be buried 1.5 metres below the surface and adhere to applicable stratified site conditions standards.

For aid in remedial planning purposes and costing the potential area of impact was estimated at 2,000 m^2. This area was determined utilizing the size of each parcel lot without the building footprints. The average depth of impacted soil across the site, based on field observations was 0.6 m. Therefore, the total volume of impacted material is approximately 1,400 m^3 or 2,940 metric tonnes [MT]. In 2021 to dispose of impacted soil material at Walker's landfill disposal costs were $45/MT, therefore an estimated cost for disposal purposes, not including excavating and transportation fees, should be considered to commence around $132,300. NSSL notes the information provided in the above paragraph are estimates only and based on excavating soil material to all property boundaries.

4.0 LIMITATIONS AND USE OF THE REPORT

Niagara Soils Solutions Ltd. prepared this Report for the account of ePrime Construction Management and is intended to provide a Phase Two Environmental Site Assessment on the properties at 179 Mellanby Avenue & 56 Main Street West, Port Colborne, Ontario. The material in it reflects Niagara Soils Solutions Ltd.'s best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Should additional parties require reliance on this report, written authorization from NSSL will be required. With respect to third parties, NSSL has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The investigation undertaken by NSSL with respect to this report and any conclusions or recommendations made in this report reflect NSSL's judgment based on the site conditions observed at the time of the Site inspection on the date[s] set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Phase Two Property, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Phase Two Property, which were unavailable for direct investigation, subsurface locations, which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Niagara Soils Solutions Ltd. has expressed professional judgement in gathering and analysing the information obtained and in the formulation of its conclusions.

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

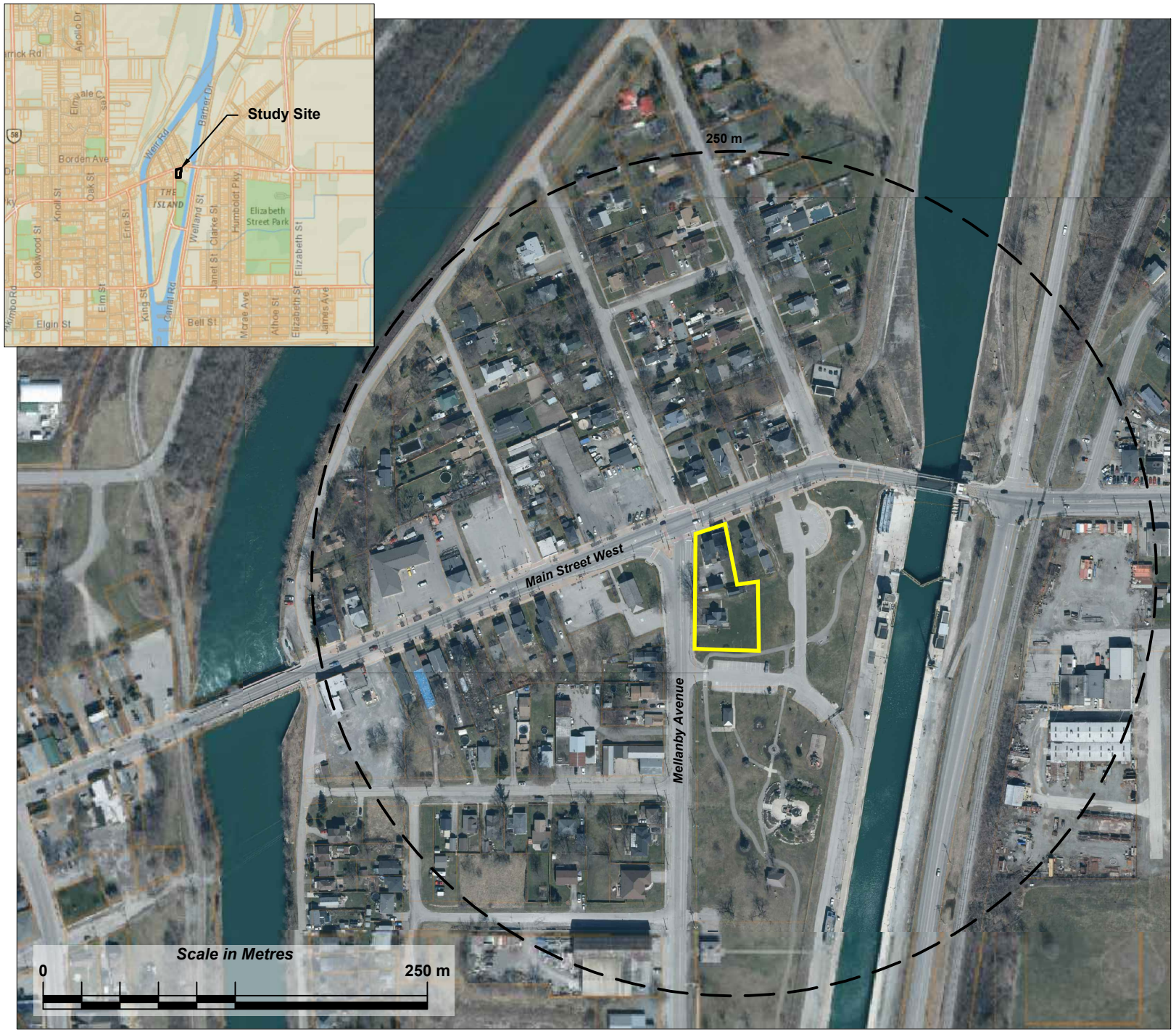
Yours very truly,
Niagara Soils Solutions Ltd.

John Monkman, P.Eng., FEC
President

Jodie Glasier, M.MM, PD-EMA, EP
Vice President

FIGURES

1. Site Location Map
2. Site Layout and Features
3. Potentially Contaminating Activities
4. Areas of Potential Environmental Concern
5. Sample Locations
6. Soil Results
7. Excess Soil Results



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase Two ESA Property Boundary
- 250 m Study Area

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
ePrime Construction Management

PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
SITE LOCATION PLAN

DRAWN BY: DN

CHECKED BY: JM

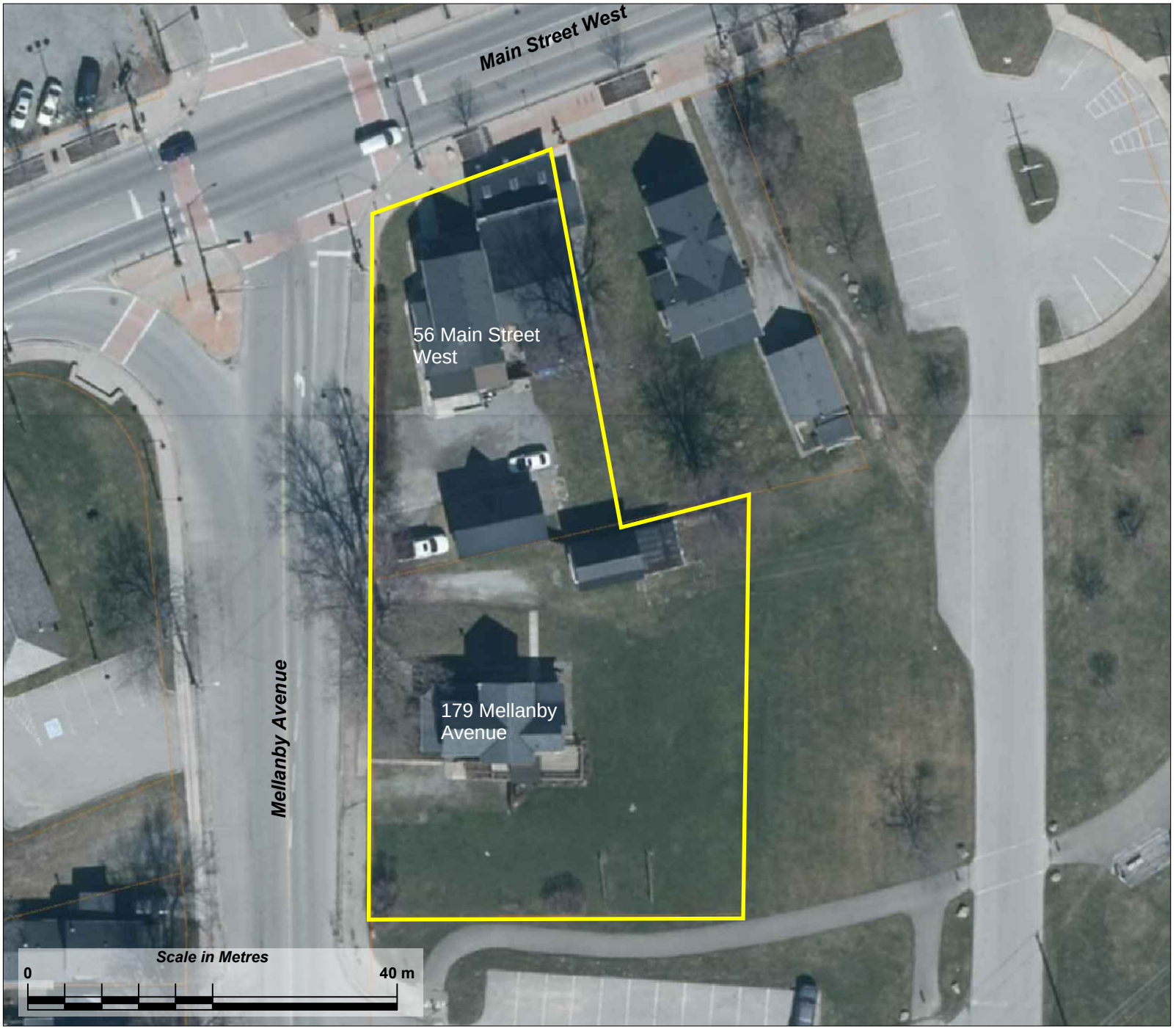
DATE: November 2022

PROJECT NO: NS2290-02

SCALE: AS SHOWN

NO:

Figure 1



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

Phase Two ESA Property Boundary

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
ePrime Construction Management

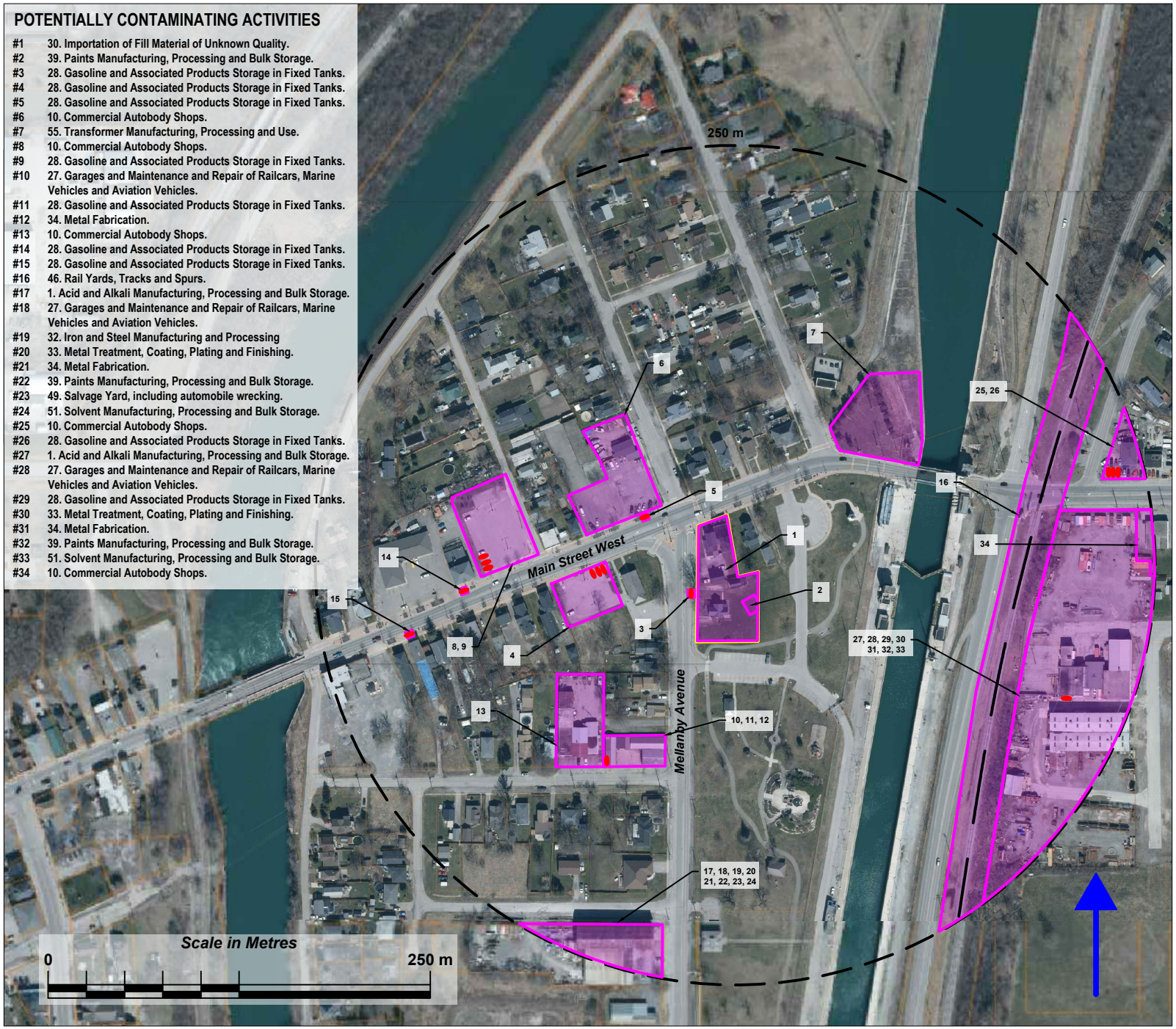
PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
SITE LAYOUT & FEATURES

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	November 2022
PROJECT NO:	NS2290-02
SCALE:	AS SHOWN
NO:	Figure 2

POTENTIALLY CONTAMINATING ACTIVITIES

#1	30. Importation of Fill Material of Unknown Quality.
#2	39. Paints Manufacturing, Processing and Bulk Storage.
#3	28. Gasoline and Associated Products Storage in Fixed Tanks.
#4	28. Gasoline and Associated Products Storage in Fixed Tanks.
#5	28. Gasoline and Associated Products Storage in Fixed Tanks.
#6	10. Commercial Autobody Shops.
#7	55. Transformer Manufacturing, Processing and Use.
#8	10. Commercial Autobody Shops.
#9	28. Gasoline and Associated Products Storage in Fixed Tanks.
#10	27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles.
#11	28. Gasoline and Associated Products Storage in Fixed Tanks.
#12	34. Metal Fabrication.
#13	10. Commercial Autobody Shops.
#14	28. Gasoline and Associated Products Storage in Fixed Tanks.
#15	28. Gasoline and Associated Products Storage in Fixed Tanks.
#16	46. Rail Yards, Tracks and Spurs.
#17	1. Acid and Alkali Manufacturing, Processing and Bulk Storage.
#18	27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles.
#19	32. Iron and Steel Manufacturing and Processing
#20	33. Metal Treatment, Coating, Plating and Finishing.
#21	34. Metal Fabrication.
#22	39. Paints Manufacturing, Processing and Bulk Storage.
#23	49. Salvage Yard, including automobile wrecking.
#24	51. Solvent Manufacturing, Processing and Bulk Storage.
#25	10. Commercial Autobody Shops.
#26	28. Gasoline and Associated Products Storage in Fixed Tanks.
#27	1. Acid and Alkali Manufacturing, Processing and Bulk Storage.
#28	27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles.
#29	28. Gasoline and Associated Products Storage in Fixed Tanks.
#30	33. Metal Treatment, Coating, Plating and Finishing.
#31	34. Metal Fabrication.
#32	39. Paints Manufacturing, Processing and Bulk Storage.
#33	51. Solvent Manufacturing, Processing and Bulk Storage.
#34	10. Commercial Autobody Shops.



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase Two ESA Property Boundary
- 250 m Study Area
- PCA Areas
- Underground Storage Tanks [UST]
- Inferred Groundwater Flow Direction

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
ePrime Construction Management

PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
POTENTIALLY CONTAMINATING ACTIVITIES

DRAWN BY: DN

CHECKED BY: JM

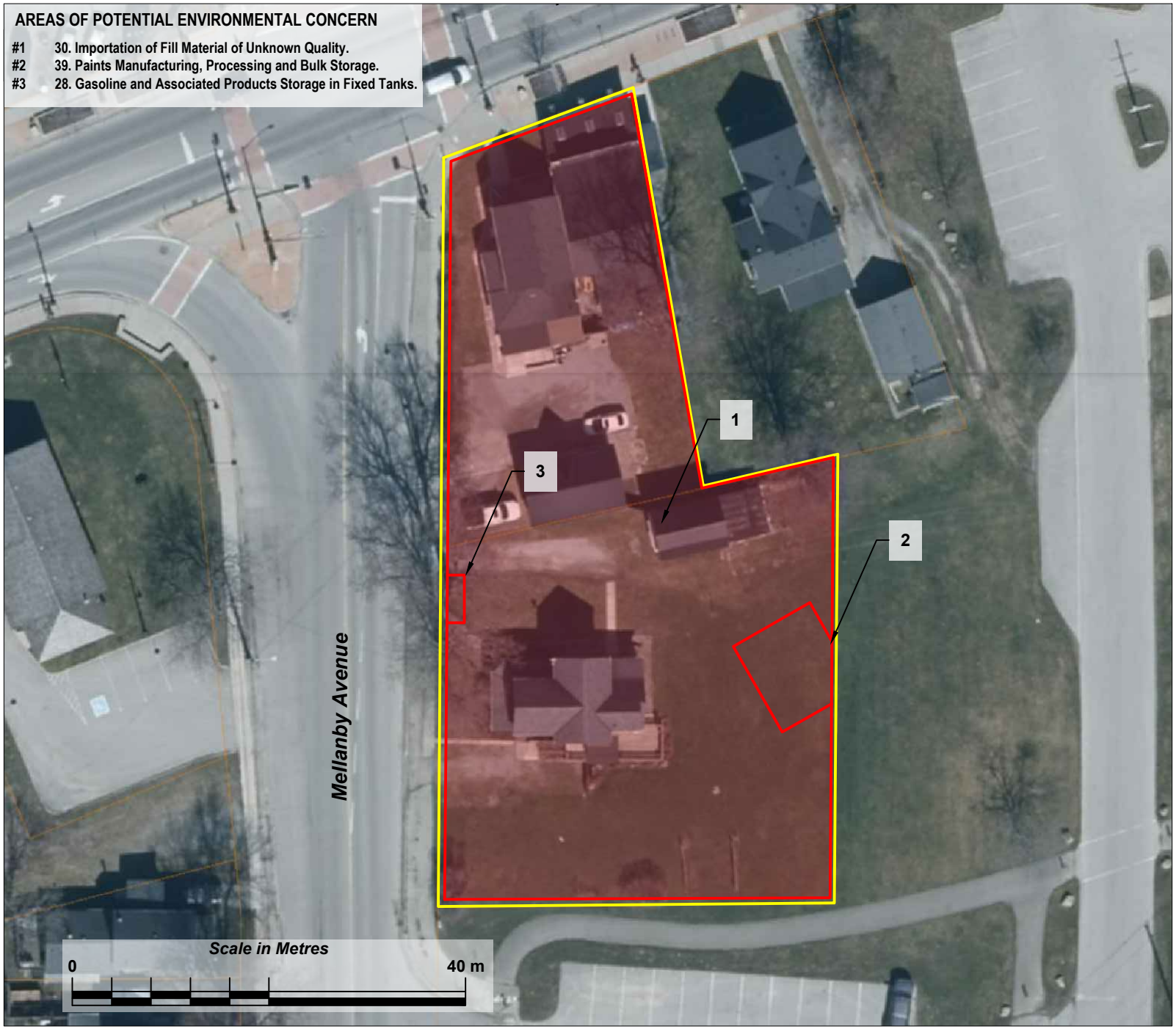
DATE: November 2022

PROJECT NO: NS2290-02

SCALE: AS SHOWN

NO:

Figure 3



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase Two ESA Property Boundary
- APEC Areas

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
ePrime Construction Management

PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

DRAWN BY: DN

CHECKED BY: JM

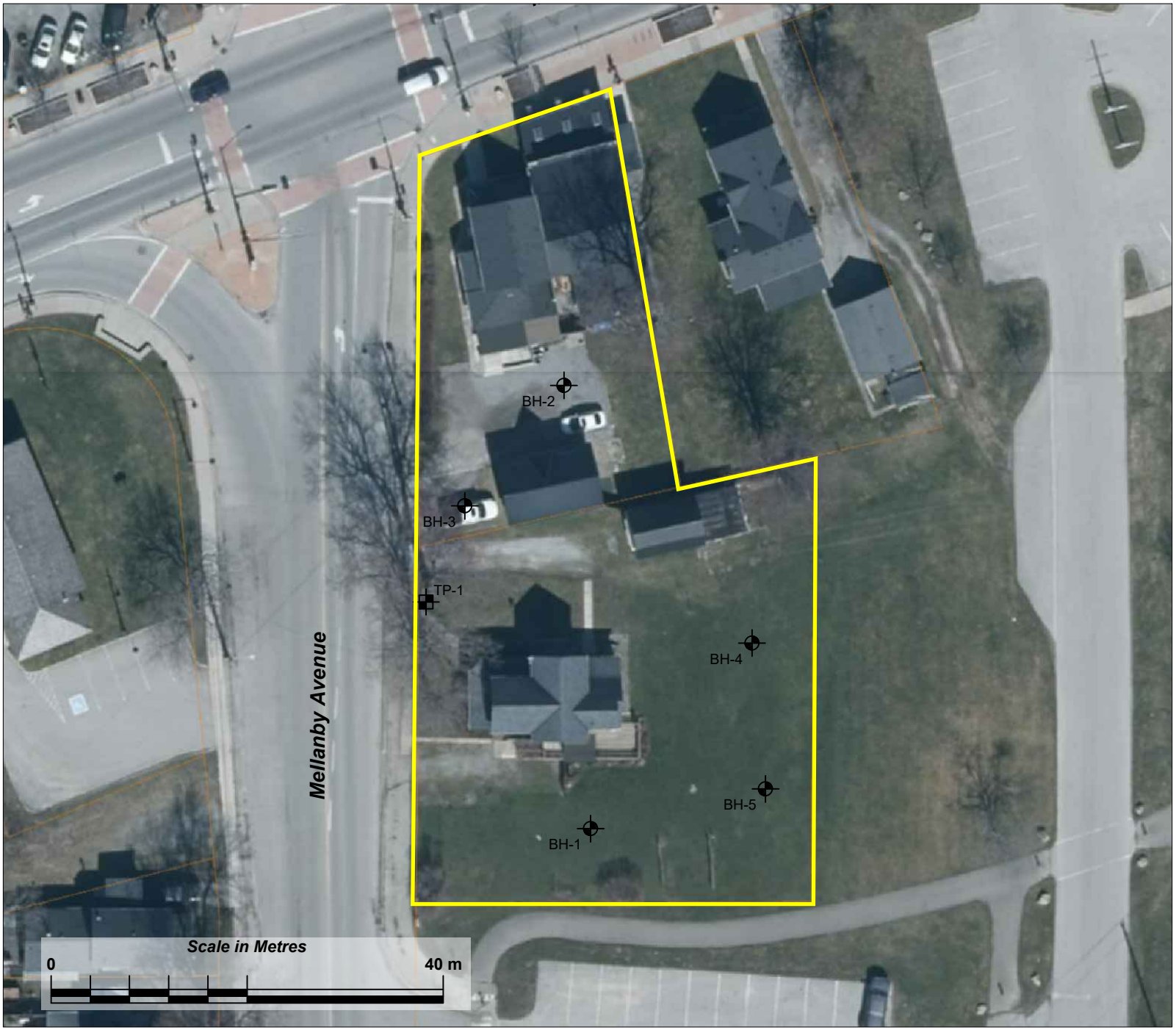
DATE: November 2022

PROJECT NO: NS2290-02

SCALE: AS SHOWN

NO:

Figure 4



LEGEND

- Phase Two ESA Property Boundary
- TP-1 — Test Pit Location
- BH-1 — Borehole Location

NIAGARA SOILS SOLUTIONS LTD.

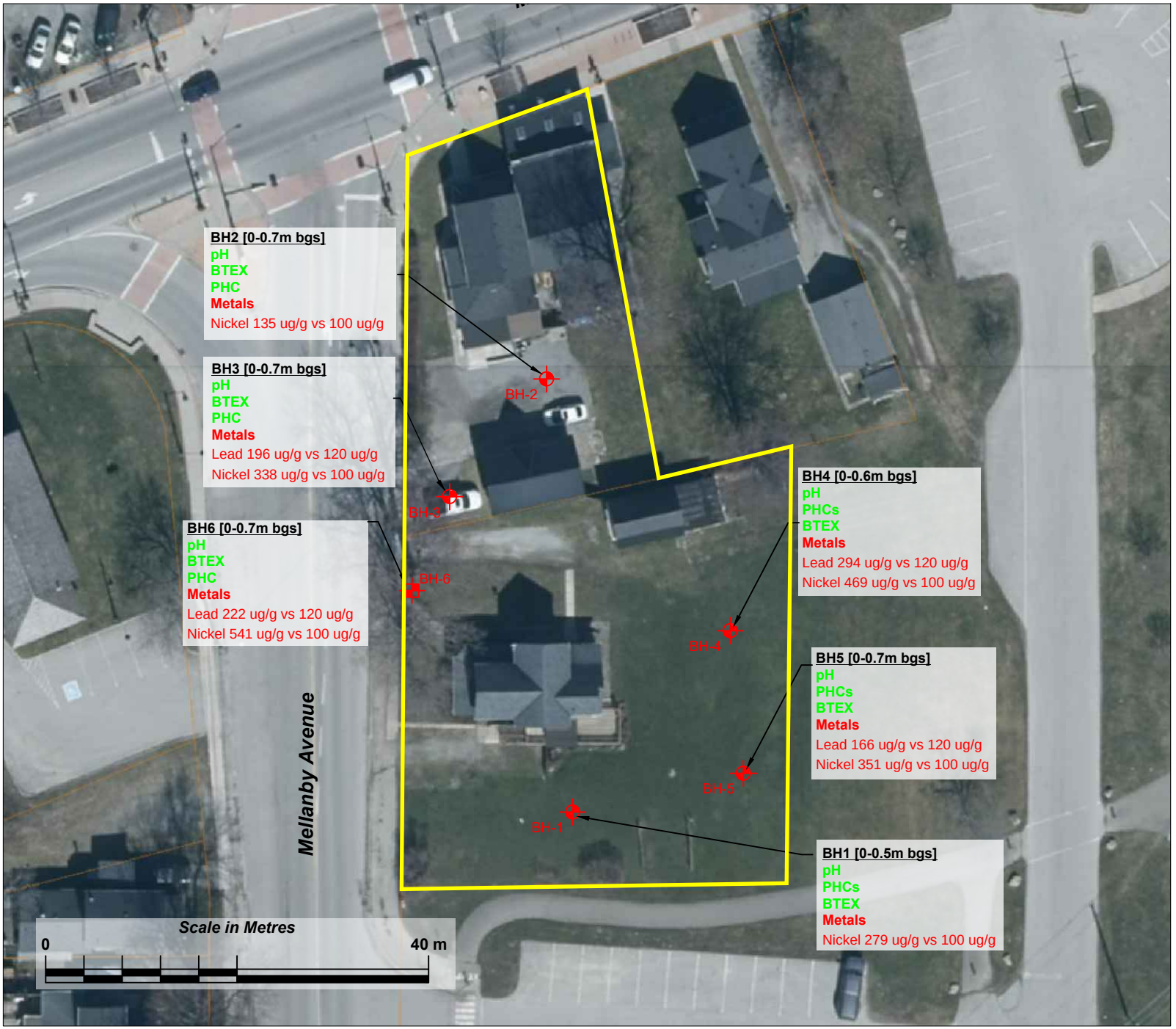
CLIENT:
ePrime Construction Management

PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
TEST PIT AND BOREHOLE LOCATION MAP

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	November 2022
PROJECT NO:	NS2290-02
SCALE:	AS SHOWN
NO:	Figure 5

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase Two ESA Property Boundary
- TP-1 Test Pit Location
- BH-1 Borehole Location
- Meets Applicable Criteria
- Exceeds Applicable Criteria

Results Compared to O. Reg. 153/04, Table 7 - Shallow Soils, Non-Potable, Residential, Coarse-Criteria

NIAGARA SOILS SOLUTIONS LTD.

CLIENT: **ePrime Construction Management**

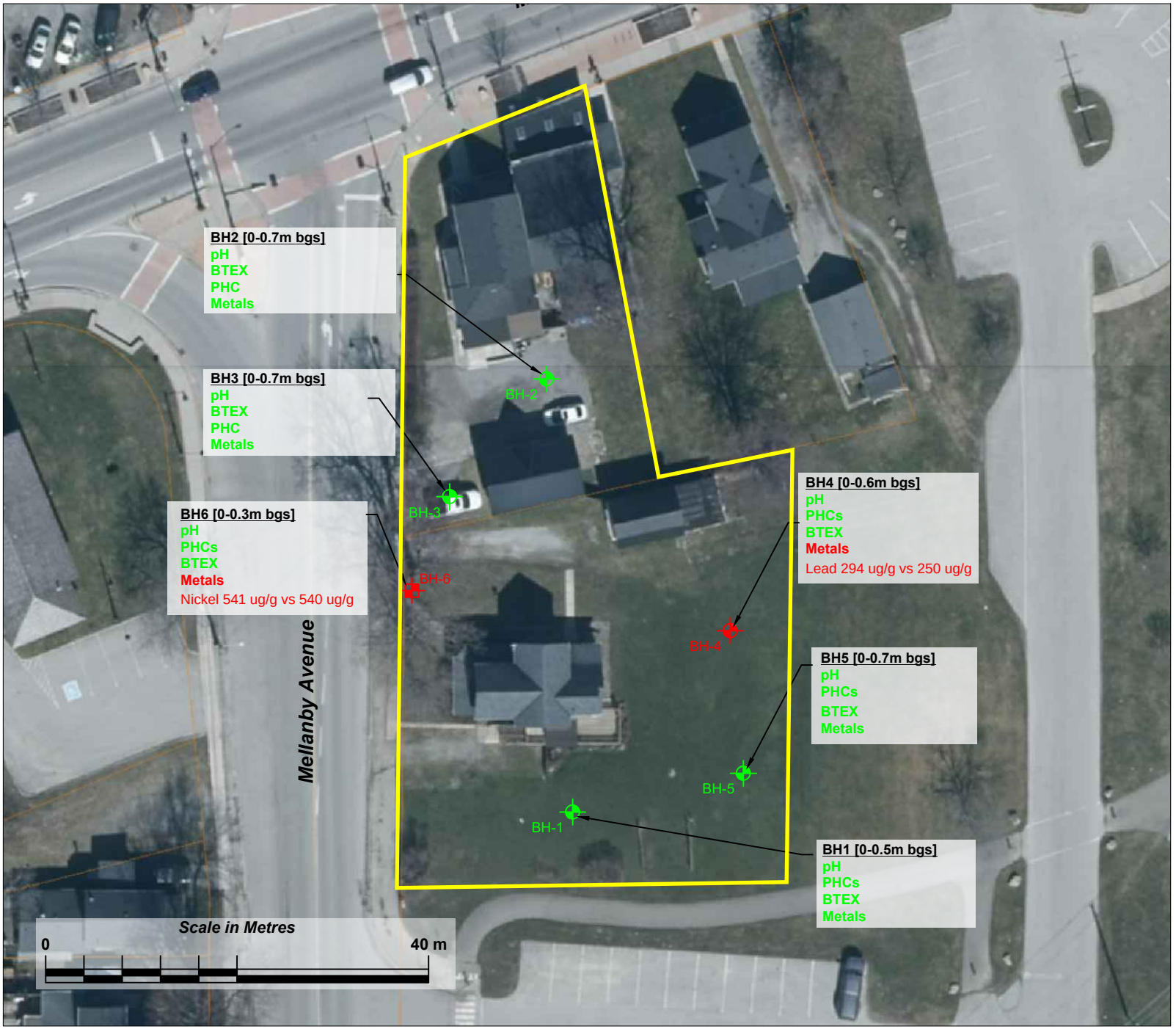
PROJECT:

PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:

SOIL RESULTS

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	November 2022
PROJECT NO:	NS2290-02
SCALE:	AS SHOWN
NO:	Figure 6



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase Two ESA Property Boundary
- TP-1 Test Pit Location
- BH-1 Borehole Location
- Meets Applicable Criteria
- Exceeds Applicable Criteria

Results Compared to O. Reg. 406/19, Table 7.1 - Full Depth Shallow Soils in a Non-Potable Ground Water condition Volume Independent - I/C/C, coarse

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
ePrime Construction Management

PROJECT:
PRELIMINARY PHASE TWO ESA & EXCESS SOILS ASSESSMENT
179 Mellanby Avenue &
56 Main Street West,
Port Colborne, Ontario

TITLE:
EXCESS SOIL RESULTS

DRAWN BY: DN

CHECKED BY: JM

DATE: November 2022

PROJECT NO: NS2290-02

SCALE: AS SHOWN

NO:

Figure 7

APPENDIX A

FIELD LOGS

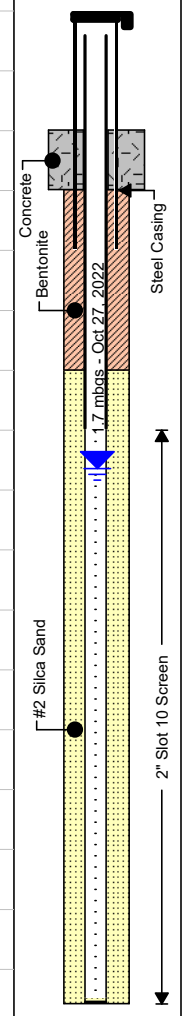
RECORD OF BOREHOLE: BH/MW-1

PROJECT NO.: NT22224
PROJECT: Proposed High Rise Building
LOCATION: 179 Mellanby Ave & 56 Main St W, Port Colborne
CLIENT: E Prime Construction Management

DRILLING COMPANY: Elements Geo Corp
DRILLING METHOD: 150 mm Solid Stem Augers
DRILL RIG: Track Mounted D-70
BOREHOLE COORDINATE (UTM): 643101 E, 4751270 N

SHEET 1 of 1
DATE STARTED: Oct 19, 2022
DATE COMPLETED: October 19, 2022
DATUM: Temporary Benchmark

SOIL PROFILE			SAMPLES					FIELD TESTING		LAB TESTING			
LITHOLOGY PLOT	ELEVATION (m / mbgs)	DESCRIPTION	TYPE	NUMBER	SPT 'N' VALUE	RECOVERY (%)	DEPTH SCALE ft / m	SPT (N) 25 50 75 100 / HAND PENETROMETER (kPa) 100 200 300 400	COV (ppm / %LEL)	MOISTURE CONTENT (%) 10 20 30 40	WELL INSTALLATION	COMMENTS and ADDITIONAL LAB TESTING
	99.3	Ground Surface										
	0.0	**100 mm Topsoil** rootlets and organics	SS	1	2,3, 50/100mm			3		32.7		
	98.8	**Sandy Silt Reworked** brown some clay trace gravel and organics very loose										
	0.5	**Bedrock - Cherty Limestone transitioning to Dolostone with depth** **Run 1** 0.48 m - 1.68 m RQD: 0% (Very Poor) Recovery: 28% Highly Fractured Occassional Rubble Zones	RC	1								
	97.6											
	1.7	**Run 2** 1.68 m - 3.07 m RQD: 0% (Very Poor) Recovery: 44% Highly Fractured Occassional Rubble Zones	RC	2								
	96.2											
	3.1	**Run 3** 3.07 m - 4.44 m RQD: 52% (Fair) Recovery: 100% Highly Fractured Occassional Rubble Zones	RC	3								
	94.8											
	4.4	End of Borehole										



RQD - Rock Quality Designation
0 - 25% (Very Poor)
25 - 50% (Poor)
50 - 75% (Fair)
75 - 90% (Good)
90 - 100% (Excellent)

RQD values possibly affected by core recovery methods.

Groundwater Level Upon Completion:
Secondary Groundwater Level:

INITIAL WATER LEVEL: 0.4 mbgs
SECONDARY WATER LEVEL: 1.7 mbgs
BOREHOLE CAVE UPON COMPLETION: Open

INITIAL WATER LEVEL DATE: Oct 19, 2022
SECONDARY WATER LEVEL DATE: Oct 27, 2022

NTiL NIAGARA TESTING & INSPECTION LTD.

LOGGED: D.Nyland
COMPILED: D.Neill
CHECKED: J.Monkman

Niagara Testing and Inspection Ltd.
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6

Note: This borehole log has been prepared for Geotechnical purposes and does not necessarily contain information suitable for an Environmentall assessment of the subsurface conditions. Borehole details as presented, do not constitute a through understanding of all potential conditions present and require interpretative assistance from a qualified Geotechnical Engineer.

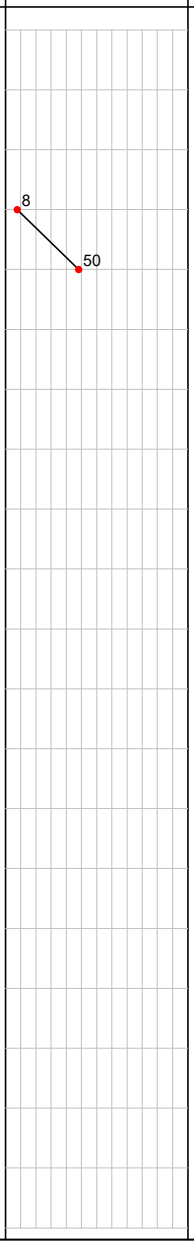
RECORD OF BOREHOLE: BH/MW-2

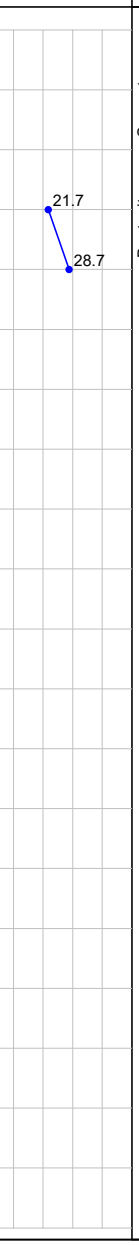
PROJECT NO.: NT22224
PROJECT: Proposed High Rise Building
LOCATION: 179 Mellanby Ave & 56 Main St W, Port Colborne
CLIENT: E Prime Construction Management

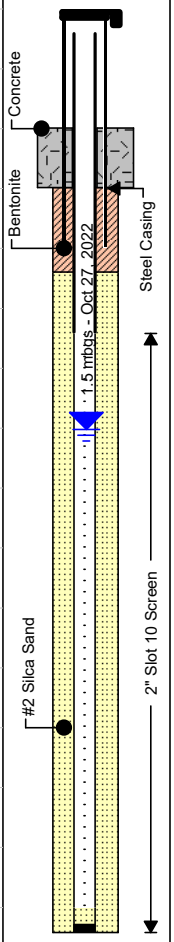
DRILLING COMPANY: Elements Geo Corp
DRILLING METHOD: 150 mm Solid Stem Augers
DRILL RIG: Track Mounted D-70
BOREHOLE COORDINATE (UTM): 643103 E, 4751312 N

SHEET 1 of 1
DATE STARTED: Oct 19, 2022
DATE COMPLETED: October 19, 2022
DATUM: Temporary Benchmark

ELEVATION (m / mbgs)	DESCRIPTION	TYPE	NUMBER	SPT 'N' VALUE	RECOVERY (%)
99.7	Ground Surface				
0.0	**100 mm Gravel Fill** sand and gravel parking area compact				
	Sandy Silt Reworked brown some clay trace gravel loose	SS	1	2,3, 50/100mm	
99.0		SS	2	50/75mm	
0.7	**Bedrock - Cherty Limestone transitioning to Dolostone with depth** **Run 1** 0.69 m - 1.24 m RQD: 23% (Very Poor) Recovery: 100%	RC	1		
98.4 1.2	Highly Fractured Occassional Rubble Zones **Run 2** 1.24 m - 2.67 m RQD: 9% (Very Poor) Recovery: 66%	RC	2		
97.0 2.7	Highly Fractured Occassional Rubble Zones **Run 3** 2.67 m - 3.71 m RQD: 0% (Very Poor) Recovery: 32%	RC	3		
96.0 3.7	Highly Fractured Occassional Rubble Zones **Run 4** 3.71 m - 4.09 m RQD: 0% (Very Poor) Recovery: 53%	RC	4		
95.6 4.1	Highly Fractured Occassional Rubble Zones End of Borehole				







RQD - Rock Quality Designation
0 - 25% (Very Poor)
25 - 50% (Poor)
50 - 75% (Fair)
75 - 90% (Good)
90 - 100% (Excellent)

RQD values possibly affected by core recovery methods.

Groundwater Level Upon Completion:
Secondary Groundwater Level:

INITIAL WATER LEVEL: Dry
SECONDARY WATER LEVEL: 1.5 mbgs
BOREHOLE CAVE UPON COMPLETION: Open

INITIAL WATER LEVEL DATE: Oct 19, 2022
SECONDARY WATER LEVEL DATE: Oct 27, 2022

NIAGARA TESTING & INSPECTION LTD.

LOGGED: D.Nyland
COMPILED: D.Neill
CHECKED: J.Monkman

Niagara Testing and Inspection Ltd.
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6

Note: This borehole log has been prepared for Geotechnical purposes and does not necessarily contain information suitable for an Environmentall assessment of the subsurface conditions. Borehole details as presented, do not constitute a through understanding of all potential conditions present and require interpretative assistance from a qualified Geotechnical Engineer.

RECORD OF BOREHOLE: BH-3

PROJECT NO.: NT22224
PROJECT: Proposed High Rise Building
LOCATION: 179 Mellanby Ave & 56 Main St W, Port Colborne
CLIENT: E Prime Construction Management

DRILLING COMPANY: Elements Geo Corp
DRILLING METHOD: 150 mm Solid Stem Augers
DRILL RIG: Track Mounted D-70
BOREHOLE COORDINATE (UTM): 643093 E, 4751299 N

SHEET 1 of 1
DATE STARTED: Oct 19, 2022
DATE COMPLETED: October 19, 2022
DATUM: Temporary Benchmark

SOIL PROFILE			SAMPLES					FIELD TESTING		LAB TESTING		
LITHOLOGY PLOT	ELEVATION (m / mbgs)	DESCRIPTION	TYPE	NUMBER	SPT 'N' VALUE	RECOVERY (%)	DEPTH SCALE ft / m	SPT (N) 25 50 75 100 / HAND PENETROMETER (kPa) 100 200 300 400	COV (ppm / %LEL)	MOISTURE CONTENT (%) 10 20 30 40	WELL INSTALLATION	COMMENTS and ADDITIONAL LAB TESTING
	99.6	Ground Surface										
	0.0	**75 mm Gravel Fill** sand and gravel parking area compact										
		Sandy Silt Reworked brown some clay trace gravel and organics	AU	1	Auger Sample					19.8	0.7 mbgs	
	98.9 0.7	loose Auger refusal on inferred bedrock. End of Borehole										

Groundwater Level Upon Completion:
Secondary Groundwater Level:

INITIAL WATER LEVEL: 0.7 mbgs
SECONDARY WATER LEVEL: NA
BOREHOLE CAVE UPON COMPLETION: Open

INITIAL WATER LEVEL DATE: Oct 19, 2022
SECONDARY WATER LEVEL DATE: NA

NIAGARA TESTING & INSPECTION LTD.

LOGGED: D.Nyland
COMPILED: D.Neill
CHECKED: J.Monkman

Niagara Testing and Inspection Ltd.
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6

RECORD OF BOREHOLE: BH-4

PROJECT NO.: NT22224
PROJECT: Proposed High Rise Building
LOCATION: 179 Mellanby Ave & 56 Main St W, Port Colborne
CLIENT: E Prime Construction Management

DRILLING COMPANY: Elements Geo Corp
DRILLING METHOD: 150 mm Solid Stem Augers
DRILL RIG: Track Mounted D-70
BOREHOLE COORDINATE (UTM): 643119 E, 4751287 N

SHEET 1 of 1
DATE STARTED: Oct 19, 2022
DATE COMPLETED: October 19, 2022
DATUM: Temporary Benchmark

SOIL PROFILE			SAMPLES					FIELD TESTING		LAB TESTING		
LITHOLOGY PLOT	ELEVATION (m / mbgs)	DESCRIPTION	TYPE	NUMBER	SPT 'N' VALUE	RECOVERY (%)	DEPTH SCALE ft / m	SPT (N) 25 50 75 100 / HAND PENETROMETER (kPa) 100 200 300 400	COV (ppm / %LEL)	MOISTURE CONTENT (%) 10 20 30 40	WELL INSTALLATION	COMMENTS and ADDITIONAL LAB TESTING
	99.4	Ground Surface										
	0.0	**100 mm Topsoil** rootlets and organics										
		Sandy Silt Reworked brown some clay trace gravel and organics loose	AU	1	Auger Sample					36.9	0.6 mbgs	
	98.8 / 0.6	Auger refusal on inferred bedrock. End of Borehole										

ft / m: 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0 / 0.0 1.0 2.0 3.0 4.0 5.0 6.0

Groundwater Level Upon Completion:
Secondary Groundwater Level:

INITIAL WATER LEVEL: 0.6 mbgs
SECONDARY WATER LEVEL: NA
BOREHOLE CAVE UPON COMPLETION: Open

INITIAL WATER LEVEL DATE: Oct 19, 2022
SECONDARY WATER LEVEL DATE: NA

NTiL NIAGARA TESTING & INSPECTION LTD.

LOGGED: D.Nyland
COMPILED: D.Neill
CHECKED: J.Monkman

Niagara Testing and Inspection Ltd.
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6

RECORD OF BOREHOLE: BH-5

PROJECT NO.: NT22224
PROJECT: Proposed High Rise Building
LOCATION: 179 Mellanby Ave & 56 Main St W, Port Colborne
CLIENT: E Prime Construction Management

DRILLING COMPANY: Elements Geo Corp
DRILLING METHOD: 150 mm Solid Stem Augers
DRILL RIG: Track Mounted D-70
BOREHOLE COORDINATE (UTM): 643120 E, 4751276 N

SHEET 1 of 1
DATE STARTED: Oct 19, 2022
DATE COMPLETED: October 19, 2022
DATUM: Temporary Benchmark

SOIL PROFILE			SAMPLES					FIELD TESTING		LAB TESTING		
LITHOLOGY PLOT	ELEVATION (m / mbgs)	DESCRIPTION	TYPE	NUMBER	SPT 'N' VALUE	RECOVERY (%)	DEPTH SCALE ft / m	SPT (N) 25 50 75 100 / HAND PENETROMETER (kPa) 100 200 300 400	COV (ppm / %LEL)	MOISTURE CONTENT (%) 10 20 30 40	WELL INSTALLATION	COMMENTS and ADDITIONAL LAB TESTING
	99.3	Ground Surface										
	0.0	**75 mm Topsoil** rootlets and organics										
		Sandy Silt Reworked brown some clay trace gravel and organics loose	AU	1	Auger Sample					33.4	0.7 mbgs	
	98.6 0.7	Auger refusal on inferred bedrock. End of Borehole										

ft / m: 0.0 / 1.0 / 2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 7.0 / 8.0 / 9.0 / 10.0 / 11.0 / 12.0 / 13.0 / 14.0 / 15.0 / 16.0 / 17.0 / 18.0 / 19.0 / 20.0

Groundwater Level Upon Completion:
Secondary Groundwater Level:

INITIAL WATER LEVEL: 0.7 mbgs
SECONDARY WATER LEVEL: NA
BOREHOLE CAVE UPON COMPLETION: Open

INITIAL WATER LEVEL DATE: Oct 19, 2022
SECONDARY WATER LEVEL DATE: NA

NTiL NIAGARA TESTING & INSPECTION LTD.

LOGGED: D.Nyland
COMPILED: D.Neill
CHECKED: J.Monkman

Niagara Testing and Inspection Ltd.
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6

HAND AUGERED LOG SHEET

JOB NUMBER: LOCATION: NS2290-02

DATE: 179 Mellanby &56 West Main Street West

October 19, 2022

TEST PIT LOG: BH6

GSP Coord: 17T 643087 E 4751286 N

Stratigraphy		Sample Number	Depth (mbgs)	Comments (odour, staining, moisture, etc.)
Elevation (mbgs)	**Material Description**			
TBM	Topsoil		0-0.1	None
	Fill - Sandy Silt, Trace Gravel High Organics, Black to Brown, Dry and loose	BH6	0.1-0.3	None

Test Pit Size: 1' by 1'

Equipment Used: Shovel

Notes:

APPENDIX B

CERTIFICATES OF ANALYSIS – SOIL

AGAT Laboratories

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CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD
3300 MERRITTVILLE HIGHWAY
THOROLD, ON L2V 4Y6
905-407-4030
ATTENTION TO: Jodie Glasier
PROJECT: NS2290-05
AGAT WORK ORDER: 22H960411
SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Nov 07, 2022
PAGES (INCLUDING COVER): 10
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

O. Reg. 406/19 Characterization Package - Inorganics (Soil)

DATE RECEIVED: 2022-10-21

DATE REPORTED: 2022-11-07

					SAMPLE DESCRIPTION:	BH1	BH2	BH3		BH4
					SAMPLE TYPE:	Soil	Soil	Soil		Soil
					DATE SAMPLED:	2022-10-19 12:00	2022-10-19 12:00	2022-10-19 12:00		2022-10-19 12:00
Parameter	Unit	G / S: A	G / S: B	RDL		4445536	4445550	4445551	RDL	4445552
Antimony	µg/g	7.5	7.5	0.8		<0.8[<A]	<0.8[<A]	<0.8[<A]	0.8	<0.8[<A]
Arsenic	µg/g	18	18	1		6[<A]	5[<A]	9[<A]	1	6[<A]
Barium	µg/g	390	390	2.0		123[<A]	92.7[<A]	99.7[<A]	2.0	211[<A]
Beryllium	µg/g	4	4	0.4		0.8[<A]	0.6[<A]	1.0[<A]	0.4	0.9[<A]
Boron	µg/g	120	120	5		12[<A]	11[<A]	13[<A]	5	17[<A]
Cadmium	µg/g	1.2	1.2	0.5		0.9[<A]	<0.5[<A]	<0.5[<A]	0.5	0.8[<A]
Chromium	µg/g	160	160	5		27[<A]	21[<A]	28[<A]	5	30[<A]
Cobalt	µg/g	22	22	0.5		10.9[<A]	8.3[<A]	9.4[<A]	0.5	10.9[<A]
Copper	µg/g	140	140	1.0		62.4[<A]	30.5[<A]	40.2[<A]	1.0	74.4[<A]
Lead	µg/g	120	120	1		88[<A]	64[<A]	196[>B]	1	294[>B]
Molybdenum	µg/g	6.9	6.9	0.5		0.7[<A]	0.6[<A]	2.1[<A]	0.5	0.7[<A]
Nickel	µg/g	100	100	1		279[>B]	135[>B]	338[>B]	10	469[>B]
Selenium	µg/g	2.4	2.4	0.8		1.2[<A]	1.4[<A]	1.3[<A]	0.8	1.7[<A]
Silver	µg/g	20	20	0.5		0.9[<A]	<0.5[<A]	<0.5[<A]	0.5	<0.5[<A]
Thallium	µg/g	1	1	0.5		<0.5[<A]	<0.5[<A]	<0.5[<A]	0.5	<0.5[<A]
Uranium	µg/g	23	23	0.50		0.86[<A]	0.83[<A]	1.01[<A]	0.50	0.97[<A]
Vanadium	µg/g	86	86	0.4		32.4[<A]	32.3[<A]	35.9[<A]	0.4	38.1[<A]
Zinc	µg/g	340	340	5		295[<A]	108[<A]	102[<A]	5	300[<A]
pH, 2:1 CaCl2 Extraction	pH Units			NA		7.22	7.23	7.29	NA	7.07

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to O. Reg. 406/19 TABLE 7.1: Full Depth Shallow Soils in a Non-Potable Ground Water Condition Volume Independent - R/P/Ins, B Refers to Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4445536-4445552 pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.
Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

SAMPLING SITE:

ATTENTION TO: Jodie Glasier

SAMPLED BY:DAMEN NYLAND

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-10-21

DATE REPORTED: 2022-11-07

					SAMPLE DESCRIPTION:	BH1	BH2	BH3	BH4
					SAMPLE TYPE:	Soil	Soil	Soil	Soil
					DATE SAMPLED:	2022-10-19 12:00	2022-10-19 12:00	2022-10-19 12:00	2022-10-19 12:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**4445536**	**4445550**	**4445551**	**4445552**
Benzene	µg/g	0.02	0.21	0.02		<0.02[<A]	<0.02[<A]	<0.02[<A]	<0.02[<A]
Toluene	µg/g	0.88	2.3	0.05		<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]
Ethylbenzene	µg/g		2	0.05		<0.05[<B]	<0.05[<B]	<0.05[<B]	<0.05[<B]
m & p-Xylene	µg/g			0.05		<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g			0.05		<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	0.12	3.1	0.05		<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]
F1 (C6 - C10)	µg/g			5		<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	55	5		<5[<A]	<5[<A]	<5[<A]	<5[<A]
F2 (C10 to C16)	µg/g	10	98	10		<10[<A]	<10[<A]	<10[<A]	<10[<A]
F3 (C16 to C34)	µg/g	300	300	50		<50[<A]	<50[<A]	67[<A]	<50[<A]
F4 (C34 to C50)	µg/g	2800	2800	50		<50[<A]	<50[<A]	<50[<A]	<50[<A]
Gravimetric Heavy Hydrocarbons	µg/g		2800	50		NA[A]	NA[A]	NA[A]	NA[A]
Moisture Content	%			0.1		24.5	13.9	21.5	29.5
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	60-140				102	114	95	91
Terphenyl	%	60-140				118	119	99	103

Certified By:

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-10-21 **DATE REPORTED: 2022-11-07**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to O. Reg. 406/19 TABLE 7.1: Full Depth Shallow Soils in a Non-Potable Ground Water Condition Volume Independent - R/P/Ins, B Refers to Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4445536-4445552 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: 

AGAT Laboratories

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Exceedance Summary

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

ATTENTION TO: Jodie Glasier

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
4445536	BH1	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	279
4445536	BH1	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	279
4445550	BH2	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	135
4445550	BH2	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	135
4445551	BH3	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Lead	µg/g	120	196
4445551	BH3	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	338
4445551	BH3	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Lead	µg/g	120	196
4445551	BH3	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	338
4445552	BH4	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Lead	µg/g	120	294
4445552	BH4	ON 406/19 T7.1 RP	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	469
4445552	BH4	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Lead	µg/g	120	294
4445552	BH4	ON T7 S RPI CT	O. Reg. 406/19 Characterization Package - Inorganics (Soil)	Nickel	µg/g	100	469

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Quality Assurance

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

Soil Analysis

RPT Date: Nov 07, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 406/19 Characterization Package - Inorganics (Soil)															
Antimony	4445616		<0.8	<0.8	NA	< 0.8	83%	70%	130%	84%	80%	120%	87%	70%	130%
Arsenic	4445616		3	3	NA	< 1	120%	70%	130%	98%	80%	120%	102%	70%	130%
Barium	4445616		58.5	59.8	2.2%	< 2.0	114%	70%	130%	105%	80%	120%	106%	70%	130%
Beryllium	4445616		0.5	0.5	NA	< 0.4	115%	70%	130%	99%	80%	120%	108%	70%	130%
Boron	4445616		7	8	NA	< 5	113%	70%	130%	113%	80%	120%	108%	70%	130%
Cadmium	4445616		<0.5	<0.5	NA	< 0.5	96%	70%	130%	104%	80%	120%	110%	70%	130%
Chromium	4445616		17	17	NA	< 5	119%	70%	130%	108%	80%	120%	112%	70%	130%
Cobalt	4445616		7.1	7.1	0.0%	< 0.5	120%	70%	130%	108%	80%	120%	109%	70%	130%
Copper	4445616		20.9	20.9	0.0%	< 1.0	106%	70%	130%	113%	80%	120%	108%	70%	130%
Lead	4445616		11	11	0.0%	< 1	105%	70%	130%	110%	80%	120%	108%	70%	130%
Molybdenum	4445616		<0.5	<0.5	NA	< 0.5	115%	70%	130%	111%	80%	120%	114%	70%	130%
Nickel	4445616		15	15	0.0%	< 1	114%	70%	130%	107%	80%	120%	106%	70%	130%
Selenium	4445616		<0.8	<0.8	NA	< 0.8	77%	70%	130%	102%	80%	120%	105%	70%	130%
Silver	4445616		<0.5	<0.5	NA	< 0.5	106%	70%	130%	102%	80%	120%	103%	70%	130%
Thallium	4445616		<0.5	<0.5	NA	< 0.5	115%	70%	130%	102%	80%	120%	104%	70%	130%
Uranium	4445616		0.54	0.54	NA	< 0.50	119%	70%	130%	110%	80%	120%	113%	70%	130%
Vanadium	4445616		27.3	27.5	0.7%	< 0.4	128%	70%	130%	104%	80%	120%	107%	70%	130%
Zinc	4445616		54	54	0.0%	< 5	114%	70%	130%	110%	80%	120%	112%	70%	130%
pH, 2:1 CaCl2 Extraction	4445552	4445552	7.07	7.22	2.1%	NA	99%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Certified By:

Amanjot Bhela

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
AMANJOT BHELA
CHEMIST

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Quality Assurance

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

Trace Organics Analysis

RPT Date: Nov 07, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	4446323		<0.02	<0.02	NA	< 0.02	103%	60%	140%	99%	60%	140%	94%	60%	140%
Toluene	4446323		<0.05	<0.05	NA	< 0.05	92%	60%	140%	90%	60%	140%	90%	60%	140%
Ethylbenzene	4446323		<0.05	<0.05	NA	< 0.05	102%	60%	140%	104%	60%	140%	100%	60%	140%
m & p-Xylene	4446323		<0.05	<0.05	NA	< 0.05	95%	60%	140%	92%	60%	140%	119%	60%	140%
o-Xylene	4446323		<0.05	<0.05	NA	< 0.05	91%	60%	140%	98%	60%	140%	86%	60%	140%
F1 (C6 - C10)	4446323		<5	<5	NA	< 5	NA	60%	140%	90%	60%	140%	91%	60%	140%
F2 (C10 to C16)	4443322		<10	<10	NA	< 10	94%	60%	140%	74%	60%	140%	62%	60%	140%
F3 (C16 to C34)	4443322		<50	<50	NA	< 50	102%	60%	140%	66%	60%	140%	68%	60%	140%
F4 (C34 to C50)	4443322		<50	<50	NA	< 50	97%	60%	140%	106%	60%	140%	102%	60%	140%

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

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960411

PROJECT: NS2290-05

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: NIAGARA SOILS SOLUTIONS LTD.
Contact: JODIE GLASIER
Address: 3300 MERRITTVILLE HIGHWAY
UNIT 5
Phone: 289-407-6341 Fax:
Reports to be sent to:
1. Email: JGLASIER@NSSL.CA
2. Email: JMONKMAN@NSSL.CA

Project Information:

Project: ~~NS2286-05~~ NS2290-05
Site Location: ~~4500 Montrose Road~~
Sampled By: DAMEN NYLAND
AGAT Quote #: 67368EB PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

(Please check all applicable boxes)

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

☑ Excess Soils R406
Table 1 *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
_____ *Region*

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
_____ *Indicate One*

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

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

Sample Matrix Legend

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

Laboratory Use Only

Work Order #: 21A96041
Cooler Quantity: 1 cg
Arrival Temperatures: 3.4 | 6.2 | 5.3
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: Free Ice

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☑ ~~Business~~ Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI ☐ Hg ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs; Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ BaP ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach; SPLP: ☑ Metals ☐ vOCs ☐ sVOCs	O. Reg 406: Excess Soils Characterization Package; pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
BH1	10-19	AM PM	2	S										☑	☑	☑	
BH2	↓	AM PM	↓	S											☑	☑	
BH3		AM PM		S											☑	☑	
BH4		AM PM		S											☑	☑	
		AM PM		S											☑	☑	
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															

'22OCT21 5:28PM

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Damen Nyland	Oct 21/22	1:55pm	A. Tsang	21-10-22	2:00pm
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time			

Page _____ of _____
N°

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

AGAT Laboratories

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CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD
3300 MERRITTVILLE HIGHWAY
THOROLD, ON L2V 4Y6
905-407-4030
ATTENTION TO: Jodie Glasier
PROJECT: NS2290-02
AGAT WORK ORDER: 22H960416
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer
DATE REPORTED: Nov 07, 2022
PAGES (INCLUDING COVER): 11
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

SAMPLING SITE:

ATTENTION TO: Jodie Glasier

SAMPLED BY:DAMEN NYLAND

O. Reg. 153(511) - Metals (Including Hydrides) (Soil)

DATE RECEIVED: 2022-10-21

DATE REPORTED: 2022-11-07

					SAMPLE DESCRIPTION:		BH6
					SAMPLE TYPE:		Soil
					DATE SAMPLED:		2022-10-19 12:00
Parameter	Unit	G / S: A	G / S: B	RDL	4445556	RDL	4445571
Antimony	µg/g	7.5	7.5	0.8	<0.8[<A]	0.8	<0.8[<A]
Arsenic	µg/g	18	18	1	6[<A]	1	10[<A]
Barium	µg/g	390	390	2.0	154[<A]	2.0	118[<A]
Beryllium	µg/g	4	4	0.4	1.3[<A]	0.4	0.9[<A]
Boron	µg/g	120	120	5	23[<A]	5	14[<A]
Cadmium	µg/g	1.2	1.2	0.5	0.5[<A]	0.5	0.9[<A]
Chromium	µg/g	160	160	5	37[<A]	5	30[<A]
Cobalt	µg/g	22	22	0.5	9.1[<A]	0.5	16.9[<A]
Copper	µg/g	140	140	1.0	47.2[<A]	1.0	86.3[<A]
Lead	µg/g	120	120	1	166[>B]	1	222[>B]
Molybdenum	µg/g	6.9	6.9	0.5	0.6[<A]	0.5	1.1[<A]
Nickel	µg/g	100	100	1	351[>B]	10	541[>B]
Selenium	µg/g	2.4	2.4	0.8	1.0[<A]	0.8	1.9[<A]
Silver	µg/g	20	20	0.5	<0.5[<A]	0.5	<0.5[<A]
Thallium	µg/g	1	1	0.5	<0.5[<A]	0.5	<0.5[<A]
Uranium	µg/g	23	23	0.50	1.05[<A]	0.50	0.96[<A]
Vanadium	µg/g	86	86	0.4	52.6[<A]	0.4	36.6[<A]
Zinc	µg/g	340	340	5	205[<A]	5	203[<A]

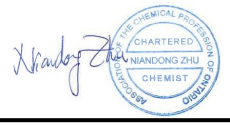
Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils, B Refers to O. Reg. 406/19 TABLE 7.1: Full Depth Shallow Soils in a Non-Potable Ground Water Condition Volume Independent - R/P/Ins

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4445571 Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

SAMPLING SITE:

ATTENTION TO: Jodie Glasier

SAMPLED BY:DAMEN NYLAND

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

DATE RECEIVED: 2022-10-21

DATE REPORTED: 2022-11-07

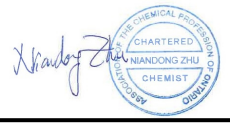
			SAMPLE DESCRIPTION:	**BH5**	**BH6**
			SAMPLE TYPE:	**Soil**	**Soil**
			DATE SAMPLED:	**2022-10-19 12:00**	**2022-10-19 12:00**
Parameter	**Unit**	**G / S**	**RDL**	**4445556**	**4445571**
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.36	7.11

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

4445556-4445571 pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil).

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

SAMPLING SITE:

ATTENTION TO: Jodie Glasier

SAMPLED BY:DAMEN NYLAND

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-10-21

DATE REPORTED: 2022-11-07

				SAMPLE DESCRIPTION:	BH5	BH6
				SAMPLE TYPE:	Soil	Soil
				DATE SAMPLED:	2022-10-19 12:00	2022-10-19 12:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**	**4445556**	**4445571**
Benzene	µg/g	0.21	0.02	0.02	<0.02[<B]	<0.02[<B]
Toluene	µg/g	2.3	0.88	0.05	<0.05[<B]	<0.05[<B]
Ethylbenzene	µg/g	2		0.05	<0.05[<A]	<0.05[<A]
m & p-Xylene	µg/g			0.05	<0.05	0.12
o-Xylene	µg/g			0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.12	0.05	<0.05[<B]	0.12[B]
F1 (C6 - C10)	µg/g			5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	25	5	<5[<B]	<5[<B]
F2 (C10 to C16)	µg/g	98	10	10	<10[<B]	<10[<B]
F3 (C16 to C34)	µg/g	300	300	50	<50[<A]	<50[<A]
F4 (C34 to C50)	µg/g	2800	2800	50	<50[<A]	<50[<A]
Gravimetric Heavy Hydrocarbons	µg/g	2800		50	NA[B]	NA[B]
Moisture Content	%			0.1	26.7	24.2
Surrogate	**Unit**		**Acceptable Limits**			
Toluene-d8	% Recovery		60-140		104	100
Terphenyl	%		60-140		87	96

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-10-21 **DATE REPORTED: 2022-11-07**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils, B Refers to O. Reg. 406/19 TABLE 7.1: Full Depth Shallow Soils in a Non-Potable Ground Water Condition Volume Independent - R/P/Ins
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4445556-4445571 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
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Exceedance Summary

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

ATTENTION TO: Jodie Glasier

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
4445556	BH5	ON 406/19 T7.1 RP	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Lead	µg/g	120	166
4445556	BH5	ON 406/19 T7.1 RP	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Nickel	µg/g	100	351
4445556	BH5	ON T7 S RPI CT	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Lead	µg/g	120	166
4445556	BH5	ON T7 S RPI CT	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Nickel	µg/g	100	351
4445571	BH6	ON 406/19 T7.1 RP	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Lead	µg/g	120	222
4445571	BH6	ON 406/19 T7.1 RP	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Nickel	µg/g	100	541
4445571	BH6	ON T7 S RPI CT	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Lead	µg/g	120	222
4445571	BH6	ON T7 S RPI CT	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Nickel	µg/g	100	541

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Quality Assurance

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

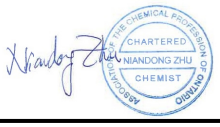
Soil Analysis

RPT Date: Nov 07, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Soil)															
Antimony	4454235		<0.8	<0.8	NA	< 0.8	85%	70%	130%	87%	80%	120%	74%	70%	130%
Arsenic	4454235		3	3	NA	< 1	127%	70%	130%	107%	80%	120%	109%	70%	130%
Barium	4454235		29.7	30.9	4.0%	< 2.0	109%	70%	130%	99%	80%	120%	107%	70%	130%
Beryllium	4454235		<0.4	<0.4	NA	< 0.4	103%	70%	130%	96%	80%	120%	107%	70%	130%
Boron	4454235		<5	<5	NA	< 5	101%	70%	130%	102%	80%	120%	104%	70%	130%
Cadmium	4454235		<0.5	<0.5	NA	< 0.5	94%	70%	130%	105%	80%	120%	114%	70%	130%
Chromium	4454235		11	11	NA	< 5	123%	70%	130%	108%	80%	120%	117%	70%	130%
Cobalt	4454235		4.0	4.2	4.9%	< 0.5	122%	70%	130%	109%	80%	120%	116%	70%	130%
Copper	4454235		9.1	9.2	1.1%	< 1.0	109%	70%	130%	111%	80%	120%	114%	70%	130%
Lead	4454235		12	13	8.0%	< 1	113%	70%	130%	109%	80%	120%	113%	70%	130%
Molybdenum	4454235		<0.5	<0.5	NA	< 0.5	114%	70%	130%	110%	80%	120%	118%	70%	130%
Nickel	4454235		8	8	0.0%	< 1	120%	70%	130%	107%	80%	120%	113%	70%	130%
Selenium	4454235		<0.8	<0.8	NA	< 0.8	101%	70%	130%	109%	80%	120%	117%	70%	130%
Silver	4454235		<0.5	<0.5	NA	< 0.5	109%	70%	130%	111%	80%	120%	108%	70%	130%
Thallium	4454235		<0.5	<0.5	NA	< 0.5	121%	70%	130%	100%	80%	120%	104%	70%	130%
Uranium	4454235		<0.50	<0.50	NA	< 0.50	123%	70%	130%	106%	80%	120%	112%	70%	130%
Vanadium	4454235		18.6	19.1	2.7%	< 0.4	123%	70%	130%	108%	80%	120%	119%	70%	130%
Zinc	4454235		39	39	0.0%	< 5	124%	70%	130%	115%	80%	120%	125%	70%	130%
O. Reg. 153(511) - ORPs (Soil)															
pH, 2:1 CaCl2 Extraction	4445376		7.25	7.32	1.0%	NA	99%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:



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Quality Assurance

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

Trace Organics Analysis

RPT Date: Nov 07, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	4445423		<0.02	<0.02	NA	< 0.02	95%	60%	140%	95%	60%	140%	100%	60%	140%
Toluene	4445423		<0.05	<0.05	NA	< 0.05	99%	60%	140%	91%	60%	140%	95%	60%	140%
Ethylbenzene	4445423		0.36	0.41	13.3%	< 0.05	101%	60%	140%	91%	60%	140%	96%	60%	140%
m & p-Xylene	4445423		1.29	1.44	11.3%	< 0.05	100%	60%	140%	95%	60%	140%	96%	60%	140%
o-Xylene	4445423		0.59	0.67	12.2%	< 0.05	100%	60%	140%	90%	60%	140%	89%	60%	140%
F1 (C6 - C10)	4445423		68	74	8.3%	< 5	83%	60%	140%	83%	60%	140%	87%	60%	140%
F2 (C10 to C16)	4453346		<10	<10	NA	< 10	101%	60%	140%	103%	60%	140%	81%	60%	140%
F3 (C16 to C34)	4453346		<50	<50	NA	< 50	105%	60%	140%	83%	60%	140%	68%	60%	140%
F4 (C34 to C50)	4453346		<50	<50	NA	< 50	77%	60%	140%	87%	60%	140%	79%	60%	140%

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

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: NIAGARA SOIL SOLUTIONS LTD

AGAT WORK ORDER: 22H960416

PROJECT: NS2290-02

ATTENTION TO: Jodie Glasier

SAMPLING SITE:

SAMPLED BY:DAMEN NYLAND

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 22H960416

Cooler Quantity: 1 cooler

Arrival Temperatures: 4.9 5.2 4.9
3.2 2.8 3.5

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: Free Ice

Report Information:

Company: NIAGARA SOILS SOLUTIONS LTD.
Contact: JODIE GLASIER
Address: 3300 MERRITTVILLE HIGHWAY
UNIT 5
Phone: 289-407-6341 Fax:
Reports to be sent to:
1. Email: JGLASIER@NSSL.CA
2. Email: JMONKMAN@NSSL.CA

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04 — Table 7 (Indicate One) — ☐ Ind/Com ☑ Res/Park ☐ Agriculture — Soil Texture (Check One): ☑ Coarse ☐ Fine

☑ Excess Soils R406 — Table 1 (Indicate One)

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm — Region

☐ Prov. Water Quality Objectives (PWQO)

☐ Other — Indicate One

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

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

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☑ Emergency ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

For "Same Day" analysis, please contact your AGAT CPM

Project Information:

Project: ~~NS2286-05~~ NS2290-02
Site Location: ~~4500 Montrose Road~~
Sampled By: DAMEN NYLAND
AGAT Quote #: 67368EB PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI. ☐ Hg. ☐ HWSB	BTEX, F1-F4 PHCs	Analyze F4G if required ☐ Yes ☐ No	PAHs	PCBs	VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ VOCs ☐ SVOCs	Excess Soils Characterization Package	Soil - EC/SAR	PHCs / BTEX	Metals by ICP	pH	Potentially Hazardous or High Concentration (Y/N)
BH5	10-19	AM PM	2	S											SPLP ☑ Metals ☐	☑	☑	X	X	X	
BH6	10-19	AM PM	2	S												☑	☑	X	X	X	
		AM PM		S												☑	☑				
		AM PM		S												☑	☑				
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Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Damen Nyland	Oct 21/22	1:55pm	T. Stephenson	21-10-22	2:00pm
Damen Nyland			A. Rivas		

'22 OCT 21 5:30pm

Page ____ of ____

N°:

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT