

**REMEDIATION ASSESSMENT**  
**3551 GARRISON ROAD, FORT ERIE**  
**NOVEMBER 28 – DECEMBER 31, 2024**

Prepared for:

Prepared by:

**Mr. Brad Brunton**

Innovative Properties Inc  
465 Central Avenue. Fort Erie, ON  
L2A 3T8

**Andre Breberina P. Geo**

35 Fairview Avenue  
Grimsby, On, L3M 3L4  
T: 1 (905) 945-7019  
F: 1 (905) 945-9735  
e-mail: [abreberina@hotmail.com](mailto:abreberina@hotmail.com)

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1 Copy – **Andre Breberina BES P. Geo.**

## **EXECUTIVE SUMMARY**

At the request of Mr. Brad Brunton of Innovative Properties Inc. (the Client), a soil and groundwater remediation program was conducted on a property municipally known as 3551 Garrison Road in the Town of Fort Erie, Ontario (the Site).

The Program was completed in accordance with the general requirements of CSA Standard Z769-00 'Phase II Environmental Site Assessment' which outlines the protocol for Phase II Environmental Site Assessments.

The remediation program scope of work was based on the following reports:

- Phase II ESA entitled "Phase II Environmental Site Assessment, 3551 Garrison Road, Fort Erie, On., January 18, 2024" was conducted by A. Breberina P. Geo.
- Phase I ESA entitled "Phase I Environmental Site Assessment, 3551 Garrison Road, Fort Erie, On., August 9, 2019" was conducted by Wood Environment & Infrastructure Solutions,
- "Phase I Environmental Site Assessment, 3571-3573 Garrison Road, Fort Erie (Ridgeway), Ontario", dated April 21, 1999, and prepared by Niagara Environmental Dynamics Ltd. (NEDL) for Gary Clemmenson c/o MacFrugal's (1999 Phase I ESA); and
- untitled report regarding tank removal and soil remediation at 3571 Garrison Road, dated January 6, 2000, and prepared by NEDL for Mr. Gary Clemmenson (2000 Tank Removal Report).

The findings of reports were reviewed to identify potential contaminating activities (PCAs) on the Site and adjacent properties which resulted in areas of potential environmental concern (APECs)::

*"The is a restaurant on the east portion of the Site and single detached dwelling estimated to have been erected in the 1960s. Both buildings are heated by natural gas and supplied by municipal water. There are two wells on Site which have been in disuse and the well heads could not be located.*

*The Site was developed for residential and commercial use by the mid 1950s. Commercial uses included both a restaurant and an retail fuel outlet (RFO) which operated from 1955 to 1997.*

*Five USTs were identified, including four tanks in a tank nest directly west of the restaurant (between the house and restaurant), and a fifth tank (diesel) located behind the restaurant. In 1999, the USTs and fueling infrastructure were decommissioned. which involved the following activities:*

- *the tanks (i.e., the source of potential impacts) have all been removed from the Site;*
- *the distribution piping was either removed or vacuumed dry;*
- *ground water was pumped from the tank excavation and removed from the Site;*
- *visibly impacted soils were removed from the Site; and*
- *one soil sample collected from the tank nest indicated the remaining materials were suitable to remain on-Site.*

*The assessment and remediation completed in 1999/2000 would not meet today's standards due to minimal soil sampling (one sample) and no ground water sampling. However, the removal of the residual fuel, tanks, and visibly impacted soils and ground water have greatly reduced the potential for remaining environmental issues associated with the former on-Site RFO.”*

The purpose of the 2024 Phase II ESA was to confirm that the fill quality, soils and ground water remaining at the Site meet today's environmental standards.

The findings of the Phase II ESA were as follows:

1. *Generally speaking, gravel sub-base fill was encountered to depths of between 0.15 m. to 0.33 m. Fill was also encountered in the former UST nests and consisted of a heterogenous mix of dark grey to grey clay silt to silt with some sand and gravel and some sand deposits in the lower part of the nests to a depth as much as 3.38 mbgs. Petroleum stains and odours to varying degrees in the fill. Perched water was noted in the former UST nests to depths of about 1.5 m and exhibited a sheen. Native soils below the fill consisted in brown clayey silt with some sand and gravel to about 2.27 mbgs. followed by a brown grey mottled silty clay of low permeability. The fill was found to have coarse texture and the native soil was found to have fine to medium texture.*
2. *Depth to groundwater ranged between 3.16 and 3.55 mbgs. Based on the ground water elevations taken December 14, 2023 the ground water flow direction is to the east. No free product, film, sheen or odours were noted in any of the ground water samples or identified by the interface probe. Perched water was noted in the former UST nests to depths of about 1.5 m and exhibited a sheen.*
3. *None of the soil samples exhibited concentrations of metals above SCS.*
4. *Soil samples A1230, A1233 and A1234 of native soil below the gravel sub-base of former pump island exhibited elevated concentrations of PHC and all were within the SCS. Soil samples A1231, A1235 to A1237 and A1239 of worst case samples of the fill from the fuel UST nest west of the restaurant exhibited elevated concentrations of PHC and all were within the SCS. Soil samples A1240 and A1241 of worst case samples of the fill from the heating oil UST nest south of the restaurant exhibited elevated concentrations of PHC and all were within the SCS, except for a concentration of PHC in the F2 fraction in sample A1240 from*

*BH10. Sample A1242 of the native soil was taken at 1.5 m below the pump island and exhibited no concentrations above the SCS or minimum detection limit. Sample A1244 and A1245 of the native soil taken at the fuel UST nest and heating oil UST nest, respectively, exhibited no concentrations above the SCS or minimum detection limit.*

5. *None of the groundwater samples exhibited concentrations of metals, BTEX or PHC above the SCS.*

The Phase II concluded:

1. *There is residual BTEX and PHC contamination in the soil beneath the former pump island, and the fill and walls and floor of the former UST nest. Soil samples of these areas meet the SCS, except for a concentration of PHC in the F2 fraction in sample A1240 of the fill from BH10 in the former UST nest on the south side of the restaurant. Samples A1244 and A1245 of the native soil taken at the fuel UST nest and heating oil UST nest, respectively, exhibited no concentrations above the SCS or minimum detection limit, and indicate that the petroleum impacted soils are confined to the original UST nests.*
2. *Perched groundwater in the former UST nests was not sampled in this Phase II, but there was evidence of sheen on the water during drilling operations. There has been some minor petroleum impacts to groundwater below the UST nests which is well within the SCS and has largely been mitigated by native silty clays of low permeability.*
3. *The results of the soil samples indicate that the petroleum contamination in the soil is confined to the former pump island and former UST nest and underlying groundwater in the native soil has not been adversely impacted. Therefore, the conditions do not represent an off-site liability.*
4. *While the perched groundwater in the former UST nests was not sampled and analyzed, a sheen on the water is still considered an exceedance under O. Reg 153/04.*
5. *There is only one soil sample, specifically, the fill sample from BH10 in the former heating oil UST nest that exceeds the SCS.*

The results of the Remediation Assessment are summarized as follows:

1. The program involved: location of underground utilities marked by public utilities; confirmatory soil sampling of the remedial excavation around BH10 and analysis; installation of a monitoring well each of the two former UST nests for two rounds of perched water sampling and analysis; assessment of the findings and reporting of same.

2. The remedial excavation was completed by Peters Construction Group with a backhoe on November 28, 2024. Soil from the excavation was placed directly in a triaxle dump truck. The excavation measured about 2 m long by 1.5 m wide by 2.3 m deep.
3. The amount of excavated soil amounted to about 18.18 tonnes, and was placed into a triaxle dump truck for direct disposal at King and Benton Regeneration Lands Inc. at 65 Canal Road in Welland.
4. Generally speaking, fill was also encountered in the former UST nests and consisted of a heterogenous mix of dark grey to grey clay silt to silt with some sand and gravel and some sand deposits in the lower part of the nests to a depth as much as 2.7 mbgs. Petroleum stains and odours to varying degrees in the fill.
5. Perched water was noted in the former UST nests to depths of about 1.5 m. No free product, film, sheen or odours were noted in any of the ground perched water samples or identified by the interface probe.
6. None of the soil samples exhibited concentrations above SCS or the minimum detection limit SCS.
7. None of the samples exhibited concentrations above the SCS in the initial sampling period or subsequent period.

No final soil, groundwater or perched water samples in the former USTs exhibited PHC or BTEX exhibit concentrations above the SCS, and therefore no further remedial work or investigation is warranted.

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## **1.0 INTRODUCTION**

At the request of Mr. Brad Brunton of Innovative Properties Inc. (the Client), a soil and groundwater remediation program was conducted on a property municipally known as 3551 Garrison Road in the Town of Fort Erie, Ontario (the Site).

The Phase II ESA was completed in accordance with the general requirements of CSA Standard Z769-00 'Phase II Environmental Site Assessment' which outlines the protocol for Phase II Environmental Site Assessments.

### **1.1 Site Location**

The Site is located on the south side of Garrison Road (Highway 3), approximately 250 metres (m) west of the intersection of Garrison Road and Ridge Road North, in the Village of Ridgeway, in the Town of Fort Erie, Ontario. The Site lies in a rural setting, in an area of mixed land uses (residential, commercial, recreational and undeveloped land uses).

### **1.1 Site Description**

The Site has been described as a rectangular-shaped property, approximately 0.97 hectares (ha) (2.39 acres) in area. The Site was occupied by a one-story, commercial building, operated as Tammy's Breck N Ridge, a restaurant serving breakfast and lunch, as well as a residential dwelling.

### **1.2 Applicable Site Condition Standard**

The applicable site condition standards (SCS) for specific site are provided under the Ministry of Environment's (MOE's) "Soil, Ground Water and Sediment Standards for Use Under Pat XV.1 of the Environmental Protection Act" dated July, 2011.

The SCS for a Site are based on its sensitivity, groundwater use, property use, soil texture and restoration depth. Based on these characteristics the SCS are selected from one of Tables 1 to 9 as listed in the 2011 Standards.

Site characteristics were noted as follows:

- i) Potable water supply is municipally supplied.
- ii) It is understood that there is the client intended change in land uses entirely to commercial use.
- iii) Soils encountered on the Site were in excess of 2 m in depth.
- iv) The Site has been determined not to be considered a sensitive site under Section 41, Ontario Regulation 153/04 as defined as follows:

Criteria	Decision for the Subject Site
41. (1) This section applies in relation to a property if,	
(a) the property is within an area of natural significance, or includes or is adjacent to such an area or part of such an area;	No
(b) the soil at the property has a pH value as follows: (i) for surface soil, less than 5 or greater than 9, (ii) for subsurface soil, less than 5 or greater than 11;	No
(c) the property is a shallow soil property;	No
(d) the property includes or is adjacent to a water body or includes land that is within 30 m of a water body;	No
(e) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property.	No

In Section (1) (a) above, "area of natural significance" means any of the following:

1. A provincial park designated by a regulation under the *Provincial Parks Act*.
2. A conservation reserve established under the *Public Lands Act*.
3. An area of natural and scientific interest (life science) identified by the Ministry of Natural Resources as having provincial significance.
4. A wetland identified by the Ministry of Natural Resources as having provincial significance.
5. An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.
6. An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act*.
7. A habitat of endangered or threatened species identified by the Ministry of Natural Resources.
8. Property within an area designated as a natural core area or natural linkage area within the area to which the Oak Ridges Moraine Conservation Plan under the *Oak Ridges Moraine Conservation Act, 2001*.

Based on the above, the appropriate Site Condition Standard (SCS) for the Site in accordance with the O. Reg 153/04, as amended, are the generic standards for the industrial/commercial/community land use in a non-potable groundwater situation (Table 3 – full depth clean-up).

## **2.0 BACKGROUND INFORMATION**

### **2.1 Physical Setting**

Based on previous reports:

- “The Site lies at an approximate elevation of 182 metres above sea level (masl) (Google Earth). The UTM coordinates at the approximate centre of the Site are 659328 m east and 4751889 m north (NAD 83 UTM 17N). The topography across the Site is relatively flat. However, locally the ground slopes south to Lake Erie, therefore the Site is downgradient of the northern properties. Lake Erie is located approximately 3.5 kilometres (km) south of the Site. Beaver Creek is located approximately 550 m west and northwest of the Site.
- According to the 2010 Surficial Geology of Southern Ontario Miscellaneous Release - Data 128 REV, published by the Ontario Geological Survey (OGS), the geology near the Site is interpreted to consist of silt and clay, minor sand and gravel; massive to well laminated, derived from fine-textured glaciolacustrine deposits.
- The 2007 Paleozoic Geology of southern Ontario Miscellaneous Release - Data 219, published by the Armstrong, D.K. and Dodge, J.E.P. of the OGS, describes the bedrock in the area to consist of dolostone of the Bertie Formation.
- The local ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be to the south. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.”

The MECP’s Ontario Well Records website was searched for well records in the study area. Two wells were identified on the Site, one from 1949 and the other from 1957. Both were set in a usable aquifer of gravel at 50’ and 76’ below a unit of clay for potable water use in the house and restaurant. Wells of similar description and age were noted on the properties to the east and west of the Site. The Site is currently on municipal water supply and previous reports indicated that the owner was no aware of the wells on the Site and well heads were not observed on the Site.

### **2.2 Past Investigations**

The following reports were reviewed to potential contaminating activities (PCAs) on the Site and adjacent properties which resulted in areas of potential environmental concern (APECs):

- Phase I ESA entitled “Phase 1 Environmental Site Assessment, 3551 Garrison Road, Fort Erie, On., August 9, 2019” was conducted by Wood Environment & Infrastructure Solutions,

- "Phase I Environmental Site Assessment, 3571-3573 Garrison Road, Fort Erie (Ridgeway), Ontario", dated April 21, 1999, and prepared by Niagara Environmental Dynamics Ltd. (NEDL) for Gary Clemmenson c/o MacFrugal's (1999 Phase I ESA); and
- untiled report regarding tank removal and soil remediation at 3571 Garrison Road, dated January 6, 2000, and prepared by NEDL for Mr. Gary Clemmenson (2000 Tank Removal Report).

The findings of reports are summarized as follows:

*"The restaurant building had a footprint area of approximately 250 m<sup>2</sup> (2,700 ft<sup>2</sup>). The building was a slab-on-grade, concrete block building with a sloped, asphalt shingle-covered roof. Heating was provided by way of a natural-gas fired forced air furnace and cooling was provided by 2 residential-style (on-ground) air conditioning units. The commercial-style kitchen had an exhaust hood, and walk-in cooler and freezers.*

*The dwelling was a 1960s brick bungalow, with a full basement, and had a footprint area of approximately 125 m<sup>2</sup> (1,350 ft<sup>2</sup>). Heating was provided by way of a natural-gas fired forced air furnace and cooling was provided by a residential-style (on-ground) air conditioning unit.*

*The exterior of the Site consisted of a gravel parking area located north of the restaurant, and a gravel driveway around the back of the restaurant, with the remainder of the Site consisting of maintained lawn. A drainage ditch crosses the Site behind the buildings.*

*Based on a review of the available information sources, the Site was developed for residential and commercial use by the mid 1950s. Commercial uses included both a restaurant and an RFO. Based on information presented in the 1999 Phase I ESA, the property operated as a gas station from at least 1955 to 1996/97 (Shell Oil in 1955, Sun Oil in 1962, Imperial Oil (ESSO) in 1965, BP Oil in 1977, Ultramar in 1980, and Pioneer (CANGO) until closing in 1996 or 1997). The registered capacity of the Site was 68,100 L.*

*Five USTs were identified, including four tanks in a tank nest directly west of the restaurant (between the house and restaurant), and a fifth tank (diesel) located behind the restaurant. In 1999, three of the tanks were considered intact (product identified in tanks), and the remaining two were assumed to be decommissioned (filled with inert aggregate fill).*

*Three 6,000-gallon tanks were removed from the Site in November 1999, including two tanks west of the building, and the diesel tank at the rear of the property. The dispensing pumps were removed and associated piping was either removed or vacuumed dry and left in place. Prior to removal the tanks were evacuated by a liquid vacuum pump. Evidence of minor leaking from the piping system into the tank nest fill was noted. Perched ground*

*water was also vacuumed from the excavations. A total of 800 gallons of liquid were removed from site.*

*It was determined that the remaining two tanks had already been removed.*

*Due to evidence of hydrocarbon staining and a strong gasoline odour, the fill from the main tank nest was segregated and designated for landfill disposal. A total of 121.77 metric tonnes of soil was disposed of at the Niagara Waste Systems Landfill, in Thorold, Ontario. Virgin clean fill was used to backfill this tank nest (approximately 10 triaxle dump truck loads).*

*The diesel tank excavation had no evidence of soil or ground water contamination, and this tank nest was immediately backfilled.*

*One sample from the tank nest was submitted for analysis, and indicated the soil met the standards in effect at that time. The report concluded that "Upon completion of this project, the subject site would appear to be free of contaminants related to the underground storage tanks."*

*While the historic use of the Site as an RFO represents a significant source of potential environmental issues at the Site, the Site was decommissioned in 1999/2000, which involved the following activities:*

- the tanks (i.e., the source of potential impacts) have all been removed from the Site;*
- the distribution piping was either removed or vacuumed dry;*
- ground water was pumped from the tank excavation and removed from the Site;*
- visibly impacted soils were removed from the Site; and*
- one soil sample collected from the tank nest indicated the remaining materials were suitable to remain on-Site.*

*The assessment and remediation completed in 1999/2000 would not meet today's standards due to minimal soil sampling (one sample) and no ground water sampling. However, the removal of the residual fuel, tanks, and visibly impacted soils and ground water have greatly reduced the potential for remaining environmental issues associated with the former on-Site RFO.*

*If further assurance is required, a Phase II ESA could be completed to confirm that the soils and ground water remaining at the Site meet today's environmental standards."*

There was no verification sampling and analysis of potential impacts to the soil and groundwater from the three APECs, specifically, former pump island and infrastructure

and the two underground storage tank (UST) nests. There was also no assessment of the quality of the backfill used in the two former UST nests which are also considered APECs. The purpose of the Phase II ESA is to assess the impacts from the APECs.

The purpose of the 2024 Phase II ESA was to confirm that the fill quality, soils and ground water remaining at the Site meet today's environmental standards.

The Phase II ESA scope of work included:

- *Advancement of deep three boreholes each fitted with a groundwater monitoring well (BH/MWs 1 to 3) in the underlying soil to about 6.0 metres below grade surface in the (mbgs), one each of the former pump island and the two UST nests.*
- *Advancement of two shallow boreholes (BH 4 to 5) into the underlying soil to 1.5 m in the former pump island area.*
- *Advancement of four shallow boreholes (BH 6 to 9) into the underlying soil to 4.5 m in the former pump island area.*
- *Advancement of two shallow boreholes (BH 10 to 11) into the underlying soil to 3 m in the former pump island area.*
- *Soil samples were visually inspected, logged for soil type and signs of contamination, and field screened with a photo-ionization detector (PID).*
- *One 'worst-case' soil and fill sample from each borehole and One groundwater water sample from each groundwater were be selected for laboratory analysis of metals, petroleum hydrocarbons (PHC) in four fractions (F1 – F4) and benzene, toluene, ethylbenzene and xylenes (BTEX). Two of the soil samples will be selected for grain size analysis and pH. A field blank and trip blank for groundwater control.*

The findings of the Phase II ESA were as follows:

1. *Generally speaking, gravel sub-base fill was encountered to depths of between 0.15 m. to 0.33 m. Fill was also encountered in the former UST nests and consisted of a heterogenous mix of dark grey to grey clay silt to silt with some sand and gravel and some sand deposits in the lower part of the nests to a depth as much as 3.38 mbgs. Petroleum stains and odours to varying degrees in the fill. Perched water was noted in the former UST nests to depths of about 1.5 m and exhibited a sheen. Native soils below the fill consisted in brown clayey silt with some sand and gravel to about 2.27 mbgs. followed by a brown grey mottled silty clay of low permeability. The fill was found to have coarse texture and the native soil was found to have fine to medium texture.*

2. *Depth to groundwater ranged between 3.16 and 3.55 mbgs. Based on the ground water elevations taken December 14, 2023 the ground water flow direction is to the east. No free product, film, sheen or odours were noted in any of the ground water samples or identified by the interface probe. Perched water was noted in the former UST nests to depths of about 1.5 m and exhibited a sheen.*
3. *None of the soil samples exhibited concentrations of metals above SCS.*
4. *Soil samples A1230, A1233 and A1234 of native soil below the gravel sub-base of former pump island exhibited elevated concentrations of PHC and all were within the SCS. Soil samples A1231, A1235 to A1237 and A1239 of worst case samples of the fill from the fuel UST nest west of the restaurant exhibited elevated concentrations of PHC and all were within the SCS. Soil samples A1240 and A1241 of worst case samples of the fill from the heating oil UST nest south of the restaurant exhibited elevated concentrations of PHC and all were within the SCS, except for a concentration of PHC in the F2 fraction in sample A1240 from BH10. Sample A1242 of the native soil was taken at 1.5 m below the pump island and exhibited no concentrations above the SCS or minimum detection limit. Sample A1244 and A1245 of the native soil taken at the fuel UST nest and heating oil UST nest, respectively, exhibited no concentrations above the SCS or minimum detection limit.*
5. *None of the groundwater samples exhibited concentrations of metals, BTEX or PHC above the SCS.*

The Phase II concluded:

1. *There is residual BTEX and PHC contamination in the soil beneath the former pump island, and the fill and walls and floor of the former UST nest. Soil samples of these areas meet the SCS, except for a concentration of PHC in the F2 fraction in sample A1240 of the fill from BH10 in the former UST nest on the south side of the restaurant. Samples A1244 and A1245 of the native soil taken at the fuel UST nest and heating oil UST nest, respectively, exhibited no concentrations above the SCS or minimum detection limit, and indicate that the petroleum impacted soils are confined to the original UST nests.*
2. *Perched groundwater in the former UST nests was not sampled in this Phase II, but there was evidence of sheen on the water during drilling operations. There has been some minor petroleum impacts to groundwater below the UST nests which is well within the SCS and has largely been mitigated by native silty clays of low permeability.*
3. *The results of the soil samples indicate that the petroleum contamination in the soil is confined to the former pump island and former UST nest and underlying groundwater in the native soil has not been adversely impacted. Therefore, the conditions do not represent an off-site liability.*

4. *While the perched groundwater in the former UST nests was not sampled and analyzed, a sheen on the water is still considered an exceedance under O. Reg 153/04.*
  
5. *There is only one soil sample, specifically, the fill sample from BH10 in the former heating oil UST nest that exceeds the SCS.*

### **3.0 SCOPE OF INVESTIGATION**

#### **3.1 Objective**

The objective of the Remediation Program is to remediate the soil exceeding the SCS identified in Borehole 10 and to re-assess the perched ground water in the UST nests to determine if remediation is required.

- i) The general objectives of the PII-ESA are:
  - Excavation and disposal of the contaminated soil, and backfilling with clean crusher-run sand and gravel.
  - Prior to backfilling of the excavation, a 37 mm diameter PVC temporary shallow monitoring well (TSMW) was installed to a depth 2.3 m for the sampling of perched water in the former UST nest.
  - A pit was excavated in the UST west of the building to install a 300 mm PVC well to a depth of 2.7 mbgs. for sampling of perched water in the former UST nest.

The objective of the Remediation Investigation is to investigate the environmental conditions of soil in the remedial investigation and re-assess the perched water in the former UST nests.

- ii) The general objectives of the investigation are:
  - To develop a sampling and analysis program, based on the findings of the PII-ESA, to address adequately all areas where contaminants may be present in land or water, in or under the property.
  - To develop a quality assurance program to ensure the data collected is useful, accurate and appropriate to determine if the phase two property meets applicable site condition standards.

#### **3.2 Scope of Work**

The remediation program scope of work included:

- Planning a sampling and analysis program;
- Planning a quality assurance program to ensure the objectives are met;
- Location of underground utilities marked by public utilities;
- Excavation and disposal of the contaminated soil exceeding the SCS identified in Borehole 10.
-

- Soils were in the excavation were visually inspected, logged for soil type and signs of contamination, and field screened with a photo-ionization detector (PID).
- Four ‘worst-case’ soil samples were taken from the excavation for analysis of petroleum hydrocarbons (PHC) in four fractions (F1 – F4) and benzene, toluene, ethylbenzene and xylenes (BTEX).
- A 37 mm diameter PVC TSMW was installed to a depth 2.3 m for the sampling of perched water in the former UST nest.
- The excavation was backfilled with clean crusher-run sand and gravel.
- A pit was excavated in the UST west of the building to install a 300 mm PVC TSMW to a depth of 2.7 mbgs. for sampling of perched water in the former UST nest.
- One sample of the perched water from each of the TSMWs were for analysis of petroleum hydrocarbons (PHC) in four fractions (F1 – F4) and benzene, toluene, ethylbenzene and xylenes (BTEX) and the day on the initial field work, and on the basis of the initial analysis a second set of samples of the perched water were taken approximately 30 days later.
- An evaluation of the information gathered from the field investigation and analytical results; and,
- Preparation of the Remediation Assessment Report.

## **4.0 INVESTIGATION METHOD**

### **4.1 General**

The program involved: location of underground utilities marked by public utilities; confirmatory soil sampling of the remedial excavation and analysis; installation of a monitoring well each of the two former UST nests for two rounds of perched water sampling and analysis; assessment of the findings and reporting of same.

### **4.2 Utility Locates**

Clearances/locations for underground utilities in the proposed excavation areas (*as required by provincial law*) were conducted by and are presented PVS.

### **4.3 Remedial Excavation**

The remedial excavation was completed by Peters Construction Group with a backhoe on November 28, 2024. Soil from the excavation was placed directly in a triaxle dump truck. The excavation measured about 2 m long by 1.5 m wide by 2.3 m deep.

### **4.4 Field Screening Measurements**

Soils of the walls and floor of the excavation were logged and inspected for petroleum staining or odours. Soil vapours of the soils samples were field screened to aid in selection of 'worst-case' soil samples for laboratory analysis by using a Eagle II 2020 photoionization detector (PID) probe fitted with a 10.6 eV lamp which has a range for VOCs of 0 – 999 ppm and a resolution of 1 ppm. Selected soil samples from each soil core were placed into plastic bags with minimum head-space and the detector probe was inserted into the bag head space for 15 seconds while the soil was manipulated during which the highest reading was taken during the interval. Organic vapour readings provide a general and relative indication of organic readings encountered in the soils.

### **4.4 Soil Sampling**

Based on the field screening measurements, one soil sample from the west wall (A1252), one sample from the east wall (A1253) and two samples from the floor (A1254 and A1255), which meets the minimum number of samples for an excavation with a floor area of less than 25 m<sup>2</sup> in accordance with O. Reg 153/04. Soil samples for metals and PHC F2 to F4 were collected with a stainless steel knife and placed into jars prepared by the contract laboratory with appropriate preservatives as required. Soil samples for VOCs and PHC F1 were collected with a disposable terracore sampler and placed into laboratory supplied vials with methanol. The samples were placed into a clean cooler with ice-packs for direct storage and transportation to the contract laboratory under chain-of-custody documentation.

#### **4.6 Temporary Shallow Monitoring Well (TSMW) Installation**

As the TSMWs were less than 3.0 m deep, an O. Reg. 903 licensed well contractor.

A 37 diameter PVC slotted well (TSMW 1) was placed in the remediation excavation to a depth of 2.3 mbgs and the excavation was backfilled with crusher-run sand and gravel.

A 300 diameter PVC slotted well (TSMW) was placed in the former UST nest to the west of the building to a depth of 2.7 mbgs and the excavation was backfilled with crusher-run sand and gravel.

#### **4.7 Ground Water: Sampling**

A dedicated clear polycarbonate bailer was used to purge a minimum of three casing volumes from each well prior to sampling. Indications of the presence of any LNAPL were noted. Purged water was placed into sealed plastic pails pending the analytical results.

Perched water samples were collected into new glass bottles and vials prepared by the contract laboratory with sodium bisulphate as preservatives as required. The samples were placed into a clean cooler with ice-packs for direct storage and transportation to the contract laboratory under chain-of-custody documentation.

#### **4.8 Analytical Testing**

Samples of soil and perched water were analyzed for PHCs and BTEX.

The soil and perched water samples were submitted for analysis to Paracel Laboratories Ltd. in Hamilton, Ontario.

#### **4.9 Residue Management**

The amount of excavated soil amounted to about 18.18 tonnes, and was placed into a triaxle dump truck for direct disposal at King and Benton Regeneration Lands Inc. at 65 Canal Road in Welland. Purged water from the TSMWs were placed sealed plastic pails pending the outcome of the analytical results and further work as required.

#### **4.11 Quality Assurance and Quality Control Measures**

All samples were placed into clean sample jars, bottles and or vials prepared by the contract laboratory following the laboratory protocols as follows:

- Soil samples for BTEX were collected with dedicated Terra-Core plastic samplers to collect 5 gms of soil and placed into a 40 ml. Clear glass vial with 10 ml of pre-measured methanol by the laboratory as a preservative.

- Soil samples for metals, PHC were collected from the core sample with a stainless steel knife and placed into 500 ml amber glass jars with no headspace and seal with Teflon lined lids. The sampling knife was decontaminated with alchonox and rinsed with distilled water between sampling events to prevent cross-contamination.
- Perched water samples were collected with dedicated disposable clear polycarbonate bailers to prevent cross contamination between wells. Each sample for BTEX was placed with no head space into three clear glass 40 ml vials with septum caps and sodium bisuphate preservative placed by the laboratory.
- Perched water samples for metals and PHCs were placed into a bottles prepared by the laboratory with preservatives placed by the laboratory.

Disposable nitrile gloves were used during sampling handling. All sample containers were labelled by the contract laboratory and sample identifications and dates were placed on the label in the field at the time of sampling. The samples were placed into a clean cooler with ice-packs for direct storage and transportation to the contract laboratory under chain-of-custody documentation.

Laboratory QC/QA measures are detailed in the attached Certificates of Analysis.

## **5.0 REVIEW AND EVALUATION**

### **5.1 Geology**

Generally speaking, fill was also encountered in the former UST nests and consisted of a heterogenous mix of dark grey to grey clay silt to silt with some sand and gravel and some sand deposits in the lower part of the nests to a depth as much as 2.7 m. Petroleum stains and odours to varying degrees in the fill.

### **5.2 Perched Water**

Perched water was noted in the former UST nests to depths of about 1.5 m. No free product, film, sheen or odours were noted in any of the ground perched water samples or identified by the interface probe.

### **5.3 Soil Field Screening**

Some petroleum stains and odours were noted to varying degrees in the fill in the former UST nests. PID readings of field samples ranged from 0.0 to 6.7 ppm.

Perched water was noted in the former UST nests to depths of about 1.5 m. No free product, film, sheen or odours were noted in any of the ground water samples or identified by the interface probe.

### **5.4 Soil Quality**

A summary of the locations, depths, and a comparison of the analytical PHC and BTEX soil results with the applicable SCS are presented in Table 1. None of the samples exhibited concentrations above SCS or the minimum detection limit SCS.

### **5.5 Perched Water Quality**

A summary of the locations, depths, and a comparison of the analytical BTEX and PHC perched water results with the applicable SCS are presented in Table 2. None of the samples exhibited concentrations above the SCS in the initial sampling period or subsequent period.

### **5.6 Quality Assurance and Quality Control Programs**

A Certificate of Analysis has been received for each sample submitted.

All Certificates of Analysis received have been included in full in this report.

The quality control reports in both Certificates of Analysis reported that the relative percent differences were within acceptable limits or the (RDF) could not be calculated due to the results being less the laboratory minimum detection limit.

The quality control reports in both Certificates of Analysis reported that all test results were conducted within Paracel Laboratories Ltd's recommended hold times.

## **6.0 CONCLUSIONS**

The results of the Remediation Assessment are summarized as follows:

1. The program involved: location of underground utilities marked by public utilities; confirmatory soil sampling of the remedial excavation and analysis; installation of a monitoring well each of the two former UST nests for two rounds of perched water sampling and analysis; assessment of the findings and reporting of same.
2. The remedial excavation was completed by Peters Construction Group with a backhoe on November 28, 2024. Soil from the excavation was placed directly in a triaxle dump truck. The excavation measured about 2 m long by 1.5 m wide by 2.3 m deep.
3. The amount of excavated soil amounted to about 18.18 tonnes, and was placed into a triaxle dump truck for direct disposal at King and Benton Regeneration Lands Inc. at 65 Canal Road in Welland.
4. Generally speaking, fill was also encountered in the former UST nests and consisted of a heterogenous mix of dark grey to grey clay silt to silt with some sand and gravel and some sand deposits in the lower part of the nests to a depth as much as 2.7 mbgs. Petroleum stains and odours to varying degrees in the fill.
5. Perched water was noted in the former UST nests to depths of about 1.5 m. No free product, film, sheen or odours were noted in any of the ground perched water samples or identified by the interface probe.
6. None of the soil samples exhibited concentrations above SCS or the minimum detection limit SCS.
7. None of the samples exhibited concentrations above the SCS in the initial sampling period or subsequent period.

No final soil, groundwater or perched water samples in the former USTs exhibited PHC or BTEX exhibit concentrations above the SCS, and therefore no further remedial work or investigation is warranted.

## **7.0 QUALIFICATIONS OF ASSESSOR**

**Andre Breberina B.E.S. M.E.B P. Geo. Q.P.\***

**Environmental Geoscientist**

*\*Qualified Person (Ontario Ministry of Environment O. Reg 153/04) (E&O Insured)*

Over 25 years experience in environmental consulting in Ontario and has provided professional services to address environmental concerns for clients in private and public sectors.

### **Expertise:**

- Project development and management.
- Environmental Site Assessments – Phase 1 and 2.
- Site remediation and Brownfield re-development project design and management.
- Aboveground and underground storage tank management and decommissioning.
- Emergency Spill Response assessment, management and abatement.
- Waste Transfer Station, Waste Management System and Waste Processing Site Environmental Compliance Agreement submissions, including design and operations, environmental management systems and training.
- Waste Audits and Minimization/Diversion Programs.

### **Client support involving:**

- Regulatory compliance, complaints and orders.
- Records of Site Condition.
- Applications for Certificates of Approval.
- Property acquisitions, divestitures, leasing and finance.
- Stakeholder peer reviews.
- Baseline studies for due diligence, environmental management systems and strategic planning.
- Site/operation EMS procedures and training.
- Forensic Investigations
- Expert testimony at Ontario Municipal Board hearing and at Provincial Courts in litigation matters.

### **Sector involvement:**

- Federal, Provincial and Municipal governments and agencies
- Chemical processors and storage facilities
- Paint manufacturers and warehousing
- Printing and photochemical facilities
- Plastics processors
- Steel producers
- Metal fabricating, plating and warehousing sites
- Textile processing
- Aggregate producers
- Automotive manufacturers, dealerships, service and body repair shops
- Trucking companies, service depots and dealerships
- Gasoline stations and other private petroleum outlets
- Airport, seaport and rail road operations
- Salvage, recycling, waste disposal, composting facilities and transfer sites
- Public and private utility companies
- Federal, provincial and municipal facilities
- Hospitals and other health care facilities

- Educational institutions and school boards
- Retail and other commercial sites
- Developers and holding companies

### ***Teaching and Training Experience***

- Lecturer - Solid Waste and Hazardous Materials Management Course as part of the Environmental Engineering Diploma Program at Mohawk College, Hamilton, from 1998 to 2012.
- Lecturer - Youth Enviro-Entrepreneurs Program. Human Resources Canada, Canadian Environmental Industry Association, Niagara College and the Business Advisory Centre, Hamilton, 1995
- Trainer to private environmental contractors and waste management operators of O. Reg 347, TGDA, waste manifesting, sampling and monitoring procedures, EMS record keeping, hazardous materials handling procedures, level A to D personnel protection equipment use and maintenance, spills and emergency response procedures.

### ***Education, Professional Development and Certifications***

- Masters of Environment and Business (2015), School of Environment, Enterprise and Development, University of Waterloo
- Bachelor of Environmental Studies (Honours), University of Waterloo. Waterloo, 1983
- Environmental Legislative Compliance Program, Mohawk College, Hamilton, 1992
- Environmental Chemistry, Mohawk College, Hamilton, 1993
- Benthic Macro Invertebrate Survey, McMaster University, Hamilton 1995
- WHMIS Certificate, Team-1 Environmental Services Inc., Hamilton 1996
- Confined Space Entry/Rescue Certificate, Team-1 Environmental Services Inc., 1997
- Tanker Truck Roll-over Specialist, Oil Spill Control Services, Toronto, 1997
- Explosives Recognition and Forensic Documentation, RSP International Inc, Mississauga, 1998
- TDGA and Waste Manifesting Inc., Talon Environmental Inc., Hamilton, 1998
- Air Emission Summary and Dispersion Modeling Workshop, Ontario Ministry of Environment, Toronto, 1999
- Radiation Safety Certification, Ontario Power Generation Corp., Pickering Nuclear Station, Pickering, 1999
- Shoreline Clean-up Assessment, Team-1 Environmental Services Inc. Hamilton, 1999
- Open Water Oil Spill Marine Containment, Eastern Canada Spills Response Corp., Sarnia, 1999
- International SCUBA Certifications – Open Water, Advanced, Scuba Rescue and DAN Oxygen Provider, American and Canadian Underwater Council
- First Aid Certification and CPR (current), Canadian Red Cross
- Canadian Coast Guard accredited Watercraft Operator Certificate, Watercraft Rescue and Training Centre, Hamilton, 2000
- Technical Standards and Safety Authority Licensed PM2 and PM3 Petroleum Mechanic
- ISO 14001 Internal Auditor, Quality Management Institute, Mississauga, 2002
- Environmental Sampling, National Contaminated Sites Training Program, Environment Canada, 2002
- Hazmat Technician Certificate, Team 1 Environmental Services Inc. 2003

### ***Professional Associations***

- Association of Professional Geoscientists of Ontario – Practicing Member
- Canadian Council of Professional Geoscientists

## **Professional Profile**

### ***Environmental Site Assessments:***

Phase I and Phase II Environmental Site Assessments have been conducted on a wide range of property types from undeveloped land to industrial parks throughout Ontario. Phase II Environmental Site Assessments have involved a variety of non-intrusive and intrusive investigation and sampling techniques of various media on site, and off-site as required, to identify: chemicals of concern, their presence and concentrations, migration pathways, extent of contamination, actual and potential receptors, the risk to the receptors and recommendations for mitigation and/or remedial action. Investigations include surface and sub-surface conditions and hazardous materials in buildings.

### ***Site Remediation and Brownfield Re-development:***

Site remediation work has included problem identification, conceptualization of remedial options with risks and costs, consultation with client to determine preferred remedial option, finalization and implementation of work plan, arranging necessary sub-contractor and support services, project management and quality control and regulatory compliance assurance to the target clean-up level. Upon completion of remedial work, Records of Site Conditions are filed, if requested, or as required under regulations for Brownfields to be redeveloped to an active use. Remediated sites have included problems with a range of contaminants including petroleum products, solvents, (LNAPLs and DNAPLs), heavy metals and other organics, pesticides and fertilizers and leachate control. Remedial methods have included: extraction and disposal, ex-situ treatment, in-situ treatment pump and treat methods and bioremediation methods. Brownfield re-developments projects have included taking former rail lands, gas stations and industrial sites to high density residential land uses and health care facilities.

### ***Emergency Spill Response:***

Consulting services were provided for emergency spills response teams for last 20 years throughout Ontario to assess the nature and extent of spills, develop emergency responses on site with team personnel in the unique situations where S.O.P.s did not apply, identification of primary and secondary hazards, conducted sampling of various media to assess impact from spills, assessed the extent of emergency clean-up and recommendations for further assessment and remediation. Reports detailing the cause and nature of the spill, work undertaken to contain and clean up the spill and the results of the clean-up efforts. The reports were submitted to clients, insurance companies and regulatory authorities, the latter who relied upon them in the event prosecutions were undertaken. Emergency response situations included: tanker truck roll-overs, chemical tanker car train derailments, and marine spills, chemical and industrial fires. Designed, assembled and operated mobile laboratory consisting of a converted 34' mobile home fitted with PID/GC, FID/GC, ECD/GC, FTIR and IR scanners, meteorological station and support equipment to provide emergency analytical services at spill sites on behalf of Team 1 Environmental Services Inc.

### ***Waste Management:***

A cost accounting of a municipal blue box Material Recovery Facility's operation was conducted to improve handling and operations procedures. Waste Audits and Waste Minimization programs in accordance with O. Reg 102/94 and 103/94 were conducted for industrial and commercial operations and school boards. Environment Compliance Agreements (ECAs) for solid waste and hazardous waste Transfer Stations and Waste Management Systems have been prepared and submitted on behalf of clients. Preparation included design and operations details, containment design, handling and storage procedures, contingency measures, record management and training requirements based on regulatory requirements, best practices and ISO 14001 practices, as well as financial assurance calculations and public consultation. Since 2002, consulting services have been provided to commercial composting operation that have included: monitoring of ground and surface waters to assess potential off-site impacts, annual assessment of spray irrigation field to control leachate, compost assessment in compliance with ECA and MOE Guidelines.

## **8.0 REFERENCES**

- Association of Professional Geoscientists of Ontario, April 2011, “Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)”
- Breberina, A., P. Geo., January 18, 2024 “Phase II Environmental Site Assessment, 3551 Garrison Road, Fort Erie, On.,”
- CSA, 2000. ‘Phase II Environmental Site Assessment’. CSA Publication Z768-00.
- CSA, 2001. ‘Phase I Environmental Site Assessment’. CSA Publication Z768-01.
- Chapman, L.J., and D.F. Putnam, 1951. “The Physiography of Southern Ontario”. Toronto: University of Toronto Press.
- Niagara Environmental Dynamics Ltd April 21, 1999, "Phase I Environmental Site Assessment, 3571-3573 Garrison Road, Fort Erie (Ridgeway), Ontario",
- Niagara Environmental Dynamics Ltd., January 6, 2000, untiled report regarding tank removal and soil remediation at 3571 Garrison Road, Fort Erie. (2000 Tank Removal Report).
- Ontario Ministry of Environment (OMOE), June 1996, “Guidelines for Use on Contaminated Sites in Ontario.”
- OMOE, December, 1996, “Guidance on Sampling and Analytical Methods for Use on Contaminated Sites in Ontario.”
- OMOE July, 2011 “Soil, Sediment and Groundwater Standards for Use in Accordance Part XV.1 of the Environmental Protection Act”
- OMOE, June, 2010, “Protocol for Analytical Methods Used in the Assessment of Properties under under Part XV.1 of the Environmental Protection Act, March 4, 2009 as amended July 1, 2011
- OMOE, June, 2011, Guide for Completing Phase One Environmental Site Assessments Under Ontario Regulation 153/04
- OMOE, June, 2011, Guide for Completing Phase Two Environmental Site Assessments Under Ontario Regulation 153/04
- OMOE, July 1, 2011, Ontario Regulation 153/04 as amended by Ontario Regulation 511/09. Environmental Protection Act, R.S.O. 1990, Part XV.1
- Wood Environment & Infrastructure Solutions, August 9, 2019, Phase I ESA entitled “Phase 1 Environmental Site Assessment, 3551 Garrison Road, Fort Erie, On.,

## **9.0 LIMITATIONS**

The author does not have any material interest, direct or indirect, in the Site or the Client. Except for remuneration and information research fees received for the performance of this assessment, the author will not receive any profit or specialized information from the Client that would benefit the author.

The data reported and the findings, observations, and conclusions expressed in this report are limited by the Scope of Work.

The author has conducted this assessment in accordance with generally accepted professional practices, as performed at the same or similar locations related to the nature of this assigned work. The author's services are not subject to any expressed or implied warranties whatsoever.

The author has accepted information provided by third parties in good faith, but has not completed independent evaluations as to the accuracy or completeness of such information, and shall therefore not be responsible for any errors or omissions contained in such information.

The Site inspection pertaining to this assessment, and associated findings, observations, and opinions, are based solely on the Site conditions encountered at the time of the investigation. Changes in conditions may occur after the completion of this investigation. The passage of time, manifestation of latent conditions, or future events, may require further study, analysis of data, and re-evaluation of the findings, observations, and conclusions in this report.

This report is provided as a measure of due diligence and to assess risks with respect to environmental soil impairment, but it should not be considered as exhaustive or absolute in coverage; no investigation can totally eliminate the possibility that environmental impairment may exist at a site.

Regulatory requirements or their interpretations may be revised by the governing agencies, resulting in future changes to the recommended works, or remediation needs.

The conclusions presented in this report are professional opinions based upon data and conditions described herein. They are intended only for the purpose, site, and project indicated. This report is not a definitive study of contamination at the site, and should not be interpreted as such. A qualitative evaluation of soil conditions was not performed as part of this investigation. No sampling or chemical analyses of structural materials or other equipment, processes, or related media was performed in this study unless explicitly stated.

This report presents professional opinions and findings of a scientific and technical nature. Because of the stated limitations, the findings, observations, opinions and conclusions expressed by the author in this report are not, nor should not be, considered an opinion concerning the compliance of any past or present owner of the site, with any Federal, Provincial, or municipal law or regulation.

The report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of Federal, Provincial or local government agencies.

The author has prepared this report for the exclusive use of the Client. This report shall not be used or relied upon by outside parties without the written consent of the author. Any use of this report constitutes acceptance of the limits of liability that may apply to the author. Any such liability extends only to the client of the author and not to any other parties who may obtain the report.

If new information or conditions of concern are discovered during future work, including Site assessments, excavations, borings, or other studies, the author should be requested to re-evaluate the assessments and conclusions presented in this report and to provide amendments as required.

## **10.0 CLOSING REMARKS**

We trust that this report will accommodate your requirements. If you have any questions or comments, please contact the undersigned.

The gathering of information, evaluation of the information and conclusions and recommendations made in this Phase II ESA have conducted by, or supervised by, the undersigned QP.



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**Andre Breberina P. Geo**



## **Appendix A: Figures**



Mapa: Microsoft


Niagara Region
NAVIGATOR

Niagara Navigator


Legend

- Soil Sample
- Temporary Shallow Monitoring Well

0 0 0.01 0.01 0.01 0.02 km

**Figure 1 - Excavation and Sampling Locations**  
**Remediation Assessment**  
**3551 Garrison Road, Fort Erie, On.**  
**24/11/28, Proj. #24048, A. Breberina P. Geo.**

## **Appendix B: Tables**

**Table 1 - Comparison of BTEX, PHC and PCBs Soil Results with MOE Generic Standards for Industrial/Commercial/Community Land Use in a Non-Potable Groundwater Situation (1 of 3)**

PARAMETER	SAMPLE Depth (m) Date	A1252 W. Wall 2.1 24/11/28	A1253 E. Wall 2.1 24/11/28	A1254 Floor 2.3 24/11/28	A1255 Floor 2.3 24/11/28	A1256 Dup of A1254 24/11/28	TABLE 3 <1.5
Benzene		ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	(0.4) 0.32
Toluene		ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	(19) 9.5
Ethylbenzene		ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	(78) 68
Total Xylene		ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	(30) 26
Petroleum Hydrocarbons F1 (C6-C10)		ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	(65) 55
Petroleum Hydrocarbons F2 (>C10-C16)		ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	(250) 230
Petroleum Hydrocarbons F3 (>C16-C34)		14	ND (8)	ND (8)	51	ND (8)	(2500) 1700
Petroleum Hydrocarbons F4 (>C34)		56	ND (6)	ND (6)	272	ND (6)	(6600) 3300

All Values in ug/g

( ) - Criterion value applies to fine to medium textured soils (soils with more than 50% particles less than 75 um diameter)

Table 3 – Criteria for surface soils (<1.5 metres below grade)

**BOLD** – exceeds a Table 5 criterion for a stratified clean-up

**Table 2 - Comparison of BTEX, PHC and PCBs Groundwater Results with MOE Generic Standards for Industrial/Commercial/Community Land Use in a Non-Potable Groundwater Situation**

PARAMETER	SAMPLE Depth (m) Date	A1257 Well TSMW1 24/11/28	A1258 Well TSMW2 24/11/28	A1259 Well TSMW1 24/12/31	A1260 Well TSMW2 24/12/31	TABLE 3 <1.5
Benzene		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	430
Toluene		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	18000
Ethylbenzene		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	2300
Total Xylene		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	4200
Petroleum Hydrocarbons F1 (C6-C10)		28	25	ND (25)	ND (25)	750
Petroleum Hydrocarbons F2 (>C10-C16)		ND (100)	ND (100)	ND (100)	ND (100)	150
Petroleum Hydrocarbons F3 (>C16-C34)		ND (100)	ND (100)	ND (100)	ND (100)	500
Petroleum Hydrocarbons F4 (>C34)		ND (100)	ND (100)	ND (100)	ND (100)	500

All Values in ug/l

( ) - Criterion value applies to fine to medium textured soils (soils with more than 70% particles less than 50 u diameter)

**Bold** – exceeds a Table 3 criterion for a full depth clean-up

**Appendix C:  
Certificates of Analysis**

## Certificate of Analysis

**Andre Breberina**  
35 Fairview Road  
Grimsby, ON L3M 3L4  
Attn: Andre Breberina

Client PO:  
Project: 24048 - 3555 GARRISON  
Custody: 145328

Report Date: 4-Dec-2024  
Order Date: 28-Nov-2024

**Order #: 2448379**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Parcel ID	Client ID
2448379-01	A1252
2448379-02	A1253
2448379-03	A1254
2448379-04	A1255
2448379-05	A1256

Approved By:



Milan Ralitsch, PhD  
Senior Technical Manager

Certificate of Analysis

Report Date: 04-Dec-2024

 Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

**Project Description: 24048 - 3555 GARRISON**
**Analysis Summary Table**

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	29-Nov-24	2-Dec-24
PHC F1	CWS Tier 1 - P&T GC-FID	29-Nov-24	2-Dec-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	29-Nov-24	3-Dec-24
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	4-Dec-24	4-Dec-24
Solids, %	CWS Tier 1 - Gravimetric	29-Nov-24	2-Dec-24

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

## Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

### Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Ind/Com, coarse	Reg 153/04 -T2 Ind/Com, fine
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Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

	Client ID:	A1252	A1253	A1254	A1255	Criteria:	
	Sample Date:	28-Nov-24 00:00	28-Nov-24 00:00	28-Nov-24 00:00	28-Nov-24 00:00	Reg 153/04 -T2 Ind/Com, coarse	Reg 153/04 -T2 Ind/Com, fine
	Sample ID:	2448379-01	2448379-02	2448379-03	2448379-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						

**Physical Characteristics**

% Solids	0.1 % by Wt.	75.8	74.1	79.2	76.8	-	-
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**Volatiles**

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.32 ug/g	0.4 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.1 ug/g	1.6 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	6.4 ug/g	9 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	26 ug/g	30 ug/g
Toluene-d8	Surrogate	102%	102%	103%	101%	-	-

**Hydrocarbons**

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	55 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	230 ug/g	250 ug/g
F3 PHCs (C16-C34)	8 ug/g	14	<8	<8	51	1700 ug/g	2500 ug/g
F4 PHCs (C34-C50)	6 ug/g	56	<6	<6	272 [1]	3300 ug/g	6600 ug/g
F4G-sg PHCs (gravimetric)	50 ug/g	-	-	-	1090	3300 ug/g	6600 ug/g

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

<b>Client ID:</b>	A1256					<b>Criteria:</b>	
<b>Sample Date:</b>	28-Nov-24 00:00					<b>Reg 153/04 -T2</b>	<b>Reg 153/04 -T2</b>
<b>Sample ID:</b>	2448379-05					<b>Ind/Com, coarse</b>	<b>Ind/Com, fine</b>
<b>Matrix:</b>	Soil						
<b>MDL/Units</b>							

**Physical Characteristics**

% Solids	0.1 % by Wt.	74.5	-	-	-	-	-
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**Volatiles**

Benzene	0.02 ug/g	<0.02	-	-	-	0.32 ug/g	0.4 ug/g
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	1.1 ug/g	1.6 ug/g
Toluene	0.05 ug/g	<0.05	-	-	-	6.4 ug/g	9 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	26 ug/g	30 ug/g
Toluene-d8	Surrogate	102%	-	-	-	-	-

**Hydrocarbons**

F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	55 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	230 ug/g	250 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	-	-	-	1700 ug/g	2500 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	-	-	-	3300 ug/g	6600 ug/g

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

**Method Quality Control: Blank**

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
<b>Volatiles</b>								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	7.96		%	98.7	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

**Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	17	4	ug/g	18			6.0	30	
F3 PHCs (C16-C34)	62	8	ug/g	66			7.2	30	
F4 PHCs (C34-C50)	52	6	ug/g	91			NC	30	
F4G-sg PHCs (gravimetric)	1420	50	ug/g	1670			16.1	30	
<b>Physical Characteristics</b>									
% Solids	75.5	0.1	% by Wt.	76.5			1.3	25	
<b>Volatiles</b>									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	11.9		%		101	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

**Method Quality Control: Spike**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	50	7	ug/g	ND	90.6	0-200			
F2 PHCs (C10-C16)	107	4	ug/g	18	94.1	60-140			
F3 PHCs (C16-C34)	287	8	ug/g	66	104	60-140			
F4 PHCs (C34-C50)	271	6	ug/g	91	117	60-140			
F4G-sg PHCs (gravimetric)	1120	50	ug/g	ND	112	80-120			
<b>Volatiles</b>									
Benzene	6.55	0.02	ug/g	ND	98.0	50-140			
Ethylbenzene	6.00	0.05	ug/g	ND	89.8	50-140			
Toluene	6.09	0.05	ug/g	ND	91.1	50-140			
m,p-Xylenes	12.4	0.05	ug/g	ND	92.8	50-140			
o-Xylene	6.12	0.05	ug/g	ND	91.5	50-140			
Surrogate: Toluene-d8	12.5		%		92.6	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

**Project Description: 24048 - 3555 GARRISON**

Qualifier Notes:

**Sample Qualifiers :**

- 1: GC-FID signal did not return to baseline by C50  
Applies to Samples: A1255

**QC Qualifiers:**

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048 - 3555 GARRISON

**Work Order Revisions / Comments:**

None

**Other Report Notes:**

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

*CCME PHC additional information:*

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.



Parcel Order Number  
(Lab Use Only)  
2448379 (soil)  
2448386 (water)

Chain of Custody  
(Lab Use Only)  
No 145328

Client Name: ANDRZEJ BIEBERKIN Project Ref: 21048 - 3555 GARZIKISOL Page 1 of 1

Contact Name: " Quote #: \_\_\_\_\_

Address: \_\_\_\_\_ PO #: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: abieberkina@hofmail.com

Turnaround Time  
 1 day       3 day  
 2 day       Regular  
 Date Required: \_\_\_\_\_

REGULATION		Other Regulation		Matrix Type		Required Analysis									
<input type="checkbox"/> REG 153/04	<input type="checkbox"/> REG 406/19	<input type="checkbox"/> REG 558	<input type="checkbox"/> PWQO	<input type="checkbox"/> S (Soil/Sed.)	<input type="checkbox"/> GW (Ground Water)										
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> CCME	<input type="checkbox"/> MISA	<input type="checkbox"/> SW (Surface Water)	<input type="checkbox"/> SS (Storm/Sanitary Sewer)										
<input checked="" type="checkbox"/> Table 2	<input checked="" type="checkbox"/> Ind/Comm	<input type="checkbox"/> SU - Sani	<input type="checkbox"/> SU - Storm	<input type="checkbox"/> P (paint A (Air) O (Other))											
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	Mun: _____	<input type="checkbox"/> Other												
<input type="checkbox"/> Table _____															
For RSC: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No															
Sample ID/Location Name				Matrix	Air Volume	# of Containers	Sample Taken		PHCS F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CWI	B (HWS)
							Date	Time							
1	A1252	S		2	Nov 28/24										
2	A1253			2											
3	A1254			2											
4	A1255			2											
5	A1256	A		2											
6	A1257	E		3											
7	A1258	E		3											
8															
9															
10															

Comments: \_\_\_\_\_

Relinquished By (Sign): [Signature] Received at Depot: B. Barton (Niagara) Received at Lab: AV Method of Delivery: WALK-IN

Relinquished By (Print): \_\_\_\_\_ Date/Time: Nov 28/24 11:52 Date/Time: 11/29/24 11:17 Verified By: AV

Date/Time: Nov 28/24 Temperature: 15° °C Date/Time: 11/29/24 11:21 pH Verified:  By: \_\_\_\_\_

Chain of Custody (Env) .xlsx

## Certificate of Analysis

**Andre Breberina**  
35 Fairview Road  
Grimsby, ON L3M 3L4  
Attn: Andre Breberina

Client PO:  
Project: 24048-3555 GARISSON  
Custody: 145328

Report Date: 4-Dec-2024  
Order Date: 28-Nov-2024

**Order #: 2448386**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Parcel ID	Client ID
2448386-01	A1257
2448386-02	A1258

Approved By:



Milan Ralitsch, PhD  
Senior Technical Manager

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

**Project Description: 24048-3555 GARISSON**

**Analysis Summary Table**

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	3-Dec-24	3-Dec-24
PHC F1	CWS Tier 1 - P&T GC-FID	29-Nov-24	3-Dec-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	2-Dec-24	4-Dec-24

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048-3555 GARISSON

## Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

### Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Potable Groundwater, coarse	Reg 153/04 -T2 Potable Groundwater, fine
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Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048-3555 GARISSON

<b>Client ID:</b>	A1257	A1258	-	-	<b>Criteria:</b>	
<b>Sample Date:</b>	28-Nov-24 00:00	28-Nov-24 00:00	-	-	<b>Reg 153/04 -T2</b>	<b>Reg 153/04 -T2</b>
<b>Sample ID:</b>	2448386-01	2448386-02	-	-	<b>Potable</b>	<b>Potable</b>
<b>Matrix:</b>	Water	Water	-	-	<b>Groundwater, coarse</b>	<b>Groundwater, fine</b>
<b>MDL/Units</b>						

**Volatiles**

Benzene	0.5 ug/L	<0.5	<0.5	-	-	5 ug/L	5 ug/L
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	2.4 ug/L	2.4 ug/L
Toluene	0.5 ug/L	<0.5	<0.5	-	-	24 ug/L	24 ug/L
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	300 ug/L	300 ug/L
Toluene-d8	Surrogate	104%	104%	-	-	-	-

**Hydrocarbons**

F1 PHCs (C6-C10)	25 ug/L	28	25	-	-	750 ug/L	750 ug/L
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	150 ug/L	150 ug/L
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048-3555 GARISSON

**Method Quality Control: Blank**

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
<b>Volatiles</b>								
Benzene	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	83.8		%	104	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

**Project Description: 24048-3555 GARISSON**

**Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	83.5		%		104	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: **Andre Breberina**

Order Date: 28-Nov-2024

Client PO:

**Project Description: 24048-3555 GARISSON**

**Method Quality Control: LCS Dup**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F2 PHCs (C10-C16)	1560	100	ug/L	ND	94.6	60-140	13.5	200	
F3 PHCs (C16-C34)	3920	100	ug/L	ND	106	60-140	8.37	200	
F4 PHCs (C34-C50)	2310	100	ug/L	ND	86.6	60-140	12.7	200	

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048-3555 GARISSON

**Method Quality Control: Spike**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	574	25	ug/L	ND	81.2	68-117			
F2 PHCs (C10-C16)	1790	100	ug/L	ND	108	60-140			
F3 PHCs (C16-C34)	4260	100	ug/L	ND	115	60-140			
F4 PHCs (C34-C50)	2630	100	ug/L	ND	98.4	60-140			
<b>Volatiles</b>									
Benzene	44.6	0.5	ug/L	ND	112	50-140			
Ethylbenzene	40.4	0.5	ug/L	ND	101	50-140			
Toluene	41.7	0.5	ug/L	ND	104	50-140			
m,p-Xylenes	82.5	0.5	ug/L	ND	103	50-140			
o-Xylene	40.1	0.5	ug/L	ND	100	50-140			
Surrogate: Toluene-d8	79.5		%		98.7	50-140			

Certificate of Analysis

Report Date: 04-Dec-2024

Client: Andre Breberina

Order Date: 28-Nov-2024

Client PO:

Project Description: 24048-3555 GARISSON

**Qualifier Notes:**

**Sample Data Revisions:**

None

**Work Order Revisions / Comments:**

None

**Other Report Notes:**

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

*CCME PHC additional information:*

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.



Parcel ID: 2448386



rent Blvd.  
K1G 4J8  
47  
cellabs.com  
www.paracellabs.com

Parcel Order Number

(Lab Use Only)  
2448379 (soil)  
2448386 (water)

Chain of Custody

(Lab Use Only)

No 145328

Client Name: <b>ANDRIE BUEBERKIN</b>	Project Ref: <b>24048 - 3555 GARZISEL</b>	Page <b>1</b> of <b>1</b>
Contact Name: <b>11</b>	Quote #:	<b>Turnaround Time</b> <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular Date Required:
Address:	PO #:	
Telephone:	E-mail: <b>abueberkina@hotmail.com</b>	

<input type="checkbox"/> REG 153/04 <input type="checkbox"/> REG 406/19    Other Regulation <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/Fine <input type="checkbox"/> REG 558 <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> Table 2 <input checked="" type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> CCME <input type="checkbox"/> MISA <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> SU - Sani <input type="checkbox"/> SU-Storm <input type="checkbox"/> Table _____ <input type="checkbox"/> Other For RSC: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Matrix Type: <b>S</b> (Soil/Sed.) <b>GW</b> (Ground Water) <b>SW</b> (Surface Water) <b>SS</b> (Storm/Sanitary Sewer) <b>P</b> (paint <b>A</b> (Air) <b>O</b> (Other))		Required Analysis								
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CWI	B (HWS)
				Date	Time							
1 A1252	S		2	Nov 28/24								
2 A1253	S		2									
3 A1254	S		2									
4 A1255	S		2									
5 A1256	S		2									
6 A1257	S		3									
7 A1258	S		3									
8												
9												
10												

Comments:		Method of Delivery: <b>WALK-IN</b>	
Relinquished By (Sign):	Received at Depot: <b>B. Barton (Niagara)</b>	Received at Lab: <b>AV</b>	Verified By: <b>AV</b>
Relinquished By (Print):	Date/Time: <b>Nov 28/24 11:55 AM</b>	Date/Time: <b>11/29/24 11:17</b>	Date/Time: <b>11/29/24 11:21</b>
Date/Time: <b>Nov 28/24</b>	Temperature: <b>15°</b> °C	Temperature: <b>13.2</b> °C	pH Verified: <input type="checkbox"/> By:

Chain of Custody (Cont'd)

## Certificate of Analysis

**Andre Breberina**

35 Fairview Road  
Grimsby, ON L3M 3L4  
Attn: Andre Breberina

Client PO:  
Project: 24048-3555 Garrison  
Custody: 77044

Report Date: 6-Jan-2025  
Order Date: 31-Dec-2024

**Order #: 2453096**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Parcel ID	Client ID
2453096-01	A1259
2453096-02	A1260

Approved By:



Alex Enfield, MSc

Lab Manager

Certificate of Analysis

Report Date: 06-Jan-2025

Client: **Andre Breberina**

Order Date: 31-Dec-2024

Client PO:

**Project Description: 24048-3555 Garrison**

**Analysis Summary Table**

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	6-Jan-25	6-Jan-25
PHC F1	CWS Tier 1 - P&T GC-FID	3-Jan-25	6-Jan-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	2-Jan-25	3-Jan-25

Certificate of Analysis

Report Date: 06-Jan-2025

Client: **Andre Breberina**

Order Date: 31-Dec-2024

Client PO:

Project Description: 24048-3555 Garrison

## Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

### Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Potable Groundwater, coarse	Reg 153/04 -T2 Potable Groundwater, fine
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Certificate of Analysis

Report Date: 06-Jan-2025

Client: Andre Breberina

Order Date: 31-Dec-2024

Client PO:

Project Description: 24048-3555 Garrison

<b>Client ID:</b>	A1259	A1260	-	-	<b>Criteria:</b>	
<b>Sample Date:</b>	31-Dec-24 00:00	31-Dec-24 00:00	-	-	<b>Reg 153/04 -T2</b>	<b>Reg 153/04 -T2</b>
<b>Sample ID:</b>	2453096-01	2453096-02	-	-	<b>Potable</b>	<b>Potable</b>
<b>Matrix:</b>	Ground Water	Ground Water	-	-	<b>Groundwater, coarse</b>	<b>Groundwater, fine</b>
<b>MDL/Units</b>						

**Volatiles**

Benzene	0.5 ug/L	<0.5	<0.5	-	-	5 ug/L	5 ug/L
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	2.4 ug/L	2.4 ug/L
Toluene	0.5 ug/L	<0.5	<0.5	-	-	24 ug/L	24 ug/L
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	300 ug/L	300 ug/L
Toluene-d8	Surrogate	104%	104%	-	-	-	-

**Hydrocarbons**

F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	750 ug/L	750 ug/L
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	150 ug/L	150 ug/L
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L

Certificate of Analysis

Report Date: 06-Jan-2025

Client: Andre Breberina

Order Date: 31-Dec-2024

Client PO:

Project Description: 24048-3555 Garrison

**Method Quality Control: Blank**

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
<b>Volatiles</b>								
Benzene	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	83.6		%	104	50-140			

Certificate of Analysis

Report Date: 06-Jan-2025

Client: **Andre Breberina**

Order Date: 31-Dec-2024

Client PO:

**Project Description: 24048-3555 Garrison**

**Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	83.5		%		103	50-140			

Certificate of Analysis

Report Date: 06-Jan-2025

Client: **Andre Breberina**

Order Date: 31-Dec-2024

Client PO:

**Project Description: 24048-3555 Garrison**

**Method Quality Control: LCS Dup**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F2 PHCs (C10-C16)	1810	100	ug/L	ND	89.3	60-140	0.221	200	
F3 PHCs (C16-C34)	4390	100	ug/L	ND	102	60-140	17.8	200	
F4 PHCs (C34-C50)	3460	100	ug/L	ND	115	60-140	9.32	200	

Certificate of Analysis

Report Date: 06-Jan-2025

Client: **Andre Breberina**

Order Date: 31-Dec-2024

Client PO:

**Project Description: 24048-3555 Garrison**

**Method Quality Control: Spike**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	575	25	ug/L	ND	81.3	0-200			
F2 PHCs (C10-C16)	1800	100	ug/L	ND	89.1	60-140			
F3 PHCs (C16-C34)	3680	100	ug/L	ND	85.1	60-140			
F4 PHCs (C34-C50)	3150	100	ug/L	ND	105	60-140			
<b>Volatiles</b>									
Benzene	41.1	0.5	ug/L	ND	103	50-140			
Ethylbenzene	37.7	0.5	ug/L	ND	94.1	50-140			
Toluene	41.5	0.5	ug/L	ND	104	50-140			
m,p-Xylenes	75.8	0.5	ug/L	ND	94.8	50-140			
o-Xylene	36.6	0.5	ug/L	ND	91.5	50-140			
Surrogate: Toluene-d8	79.5		%		98.5	50-140			

Certificate of Analysis

Report Date: 06-Jan-2025

Client: Andre Breberina

Order Date: 31-Dec-2024

Client PO:

Project Description: 24048-3555 Garrison

**Qualifier Notes:**

**Sample Data Revisions:**

None

**Work Order Revisions / Comments:**

None

**Other Report Notes:**

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

*CCME PHC additional information:*

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.



Paracel Order Number  
(Lab Use Only)

Chain Of Custody  
(Lab Use Only)  
No 77044

Client Name: ANDRE BOERBEKIMO Project Ref: 24048-3555 Garusa Rd  
 Contact Name: 11 Quote #:  
 Address: PO #:  
 Telephone: E-mail: abreberkimo@hotmail.com

Page    of     
**Turnaround Time**  
 1 day       3 day  
 2 day       Regular  
 Date Required:           

REG 153/04     REG 406/19    Other Regulation  
 Table 1     Agri/Other     Med/Fine     REG 558     PWQO  
 Table 2     Res/Park     Coarse     CCME     MISA  
 Table 3     Ind/Comm     SU - Sani     SU - Storm  
 Table     
 For RSC:  Yes     No  
 Mun:             
 Other:           

Matrix Type: S (Soil/Sed.) GW (Ground Water)  
 SW (Surface Water) SS (Storm/Sanitary Sewer)  
 P (Paint) A (Air) O (Other)

**Required Analysis**

Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken		PKC	BTEX	Required Analysis												
					Date	Time			1	2	3	4	5	6	7	8	9	10			
1 <u>A1259</u>	<u>GW</u>		<u>3</u>		<u>Dec 31/24</u>																
2 <u>A1260</u>	<u>11</u>		<u>11</u>		<u>Dec 31/24</u>																
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Comments:            Method of Delivery: WALK IN

Relinquished By (Sign): [Signature] Received at Depot:            Received at Lab: AV Verified By: [Signature]  
 Relinquished By (Print): Dec 31/24 Date/Time:            Date/Time: 12/31/24 11:26 Date/Time: 12/31/24 11:40  
 Date/Time:            Temperature:            °C    Temperature: 13.6 °C    pH Verified:  By: