

Phase Two Environmental Site Assessment

Commercial/Light Industrial Property 51, 57 Tannery Street, and 208 Emby Drive Mississauga, Ontario L5M 1H6

Presented to:

Nyx Capital Corp. 201-1131A Leslie Street Toronto, Ontario M3C 3L8

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OHE Project No.: 21170-001

Submitted by:

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1 EXECUTIVE SUMMARY

Site:

51, 57 Tannery Street and 208 Emby Drive, Misssissauga, Ontario.

Purpose:

OHE Consultants (OHE) was retained by Nyx Capital Corp. (Nyx) to conduct a Phase Two Environmental Site Assessment (ESA) for the site located at 51, 57 Tannery Street and 208 Emby Drive, Mississauga, Ontario (the "Property"). The purpose of the Phase Two ESA was to provide verification of soil and ground water conditions in the vicinity of three (3) former underground storage tanks (USTs) at 208 Emby Drive, previously identified in a Phase One ESA report completed by OHE in December, 2016.

Methodology

The scope of the Phase Two ESA drilling program was determined based upon OHE's proposed Work Plan and Schedule, and the finding of the following report:

• Phase One Environmental Site Assessment, Commercial/Light Industrial Property, 51, 57 Tannery Street, and 208 Emby Drive, Mississauga, Ontario, prepared for Nyx, prepared by OHE, dated December, 2016.

OHE retained the services of Profile Drilling (Profile) to provide borehole drilling services and assist with soil sample collection for boreholes. After receiving clearance of all public and private utilities, four (4) boreholes (BH101 to BH104) were advanced at 208 Emby Drive on January 20, 2017 to a maximum depth of approximately 9.14 m below grade. The boreholes were advanced using Profile's Power Probe 9700-VTR drill rig by direct push method using solid stem augers.

The focus of the Phase Two ESA was 208 Emby Drive. Phase One ESA findings did not indicate significant potential environmental concerns at 51 and 57 Tannery Street.

Based on field observations (i.e. location, depth, soil type, grain size, colour, odour and recorded organic vapour concentrations), a total of four (4) soil samples were selected and submitted for laboratory analysis of petroleum hydrocarbons (PHCs) fractions F1-F4 and benzene, toluene, ethylbenzene and xylenes (BTEX). One (1) soil field duplicate sample was submitted for laboratory analysis of (BTEX).

Ground water monitoring and sampling was conducted on January 23, 2017. Ground water samples were recovered from each monitoring well, and submitted for laboratory analysis of PHCs fractions F1-F4. One (1) ground water field duplicate sample was submitted for laboratory analysis of BTEX.

Site Condition Standards

Soil and ground water quality were assessed based on the applicable Ontario Ministry of the Environment and Climate Change (MOECC) Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with coarse textured soils, for Residential / Parkland / Institutional Property Uses, as presented in *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, dated April 15, 2011 (Ontario Regulation 153/04 as amended, "Table 3 Standards").

Stratigraphy

The stratigraphic profile at the work area generally consisted of silt with sand and clay identified at a single borehole location.

Wet to saturated soil conditions were not observed in soil samples at the time of drilling. Ground water levels measured during the ground water monitoring program were found to be between 2.685 m and 2.815 m below grade.

Investigation Findings:

Soil Laboratory Analytical Results

All PHCs and BTEX concentrations in submitted soil samples were found to be below the applicable MOECC Table 3 Standards with the following exceptions:

- BH103:
 - PHCs: PHC fractions F1 and F2.
- BH104:
 - PHCs: PHC fraction F2.

Ground Water Laboratory Analytical Results

Review of laboratory analytical results indicated that concentrations of PHCs fractions F1-F4 and BTEX in the submitted ground water samples were below the applicable MOECC Table 3 Standards.

Conclusion

Based on the work completed as part of this Phase Two ESA and the analytical results of the submitted soil and ground water samples, PHCs soil contaminations were identified on the east side of the building occupied by Superior Vault Co. Ltd. (Building H) at 208 Emby Drive. It was not determined if these contamination extended under the building footprint. The source of the above-noted contamination is suspected to be related to historical UST.

The identified PHCs exceedances in soil were assumed to be contained within a proposed excavation area of approximately 10 m long x 8 m wide x 4 m depth, located on the immediate northeast exterior side of Building H (Superior Vault Co. Ltd.). A contractor cost estimate of \$100 per tonne was used to calculate the proposed remediation program, based on the following assumptions:

1. It is assumed that 1 cubic meter (m³) of excavated soil equals to approximately 2 tonnes in mass.



- The unit price of \$100 per tonne was provided by OHE's contractor and is subject to verification. It is assumed that clean back-fill soils will be brought to site by the contractor as part of these costs.
- 3. The proposed excavation area was measured based on OHE's environmental work conducted/information received to date. Final excavation area will be determined by additional field screening and laboratory analysis of confirmatory samples.
- 4. It is assumed that all potentially contaminated soil within the proposed excavation area will be easily accessible (i.e. does not extend under the building footprint).

A total contractor cost of \$64,000 is calculated based on the above assumptions for the remediation program. This is an estimate only, based upon assumptions and requires field verification. It also does not include consulting costs, including field time, laboratory analysis or reporting.



2 INTRODUCTION

2(i) Site Description

The Phase Two ESA Property is located at municipal addresses 51, 57 Tannery Street and 208 Emby Drive, Mississauga, Ontario.

At the time of the Phase Two ESA, the Property was developed with:

- four (4) single family residential dwellings (Buildings A, B, C and D), located on the north portion (51 and 57 Tannery Street) of the Property;
- one (1) single family residential dwelling (Building F), located on the central portion (208 Emby Drive) of the Property;
- three (3) commercial/light industrial buildings (Buildings E, G and H), located on the south portion (208 Emby Drive) of the Property, occupied by commercial tenants including Schueler Auto Service, Upright Door & Dock Systems (garage door repair), and Superior Vault Co. Ltd. (manufacturer and distributor of concrete burial vaults).

Additional commercial tenants registered on the Property including private individuals for storage trailer parking, on the west portion of the Property (along Mullet Creek).

The Phase Two ESA site location and site plan with borehole and monitoring well locations have been included as Drawings 1 and 2, respectively.

2(ii) **Property Ownership**

OHE was retained by Nyx for the Phase Two ESA. The current owner of 208 Emby Drive was reported to be Ms. Deb Laidlaw. The current owner(s) of 51 and 57 Tannery Street was unknown.

2(iii) Current and Proposed Future Uses

At the time of the investigation, the Phase Two ESA Property was occupied by several commercial/light industrial tenant, and one residential dwelling. The Property was identified as being situated in an area of combined commercial and residential land uses. At the time of writing of this report, OHE is unaware of the future use of the Phase Two ESA Property.

2(iv) Applicable Site Condition Standard

The subsurface investigation is subject to Ontario Regulation 153/04, as amended, provincial regulatory criteria, which outlines the allowable subsurface concentrations for a range of contaminants for all property uses, as stipulated in the Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*.



Selection of the appropriate Ontario Regulation 153/04 Standards, as amended, was conducted by OHE taking into consideration the following information: *Definition of Primary Land Use*:

• The Property is categorized as residential as well as commercial/light industrial land use as per Ontario Regulation 153/04 as amended. Analytical results were compared to Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential / Parkland / Institutional properties with coarse-textured soils for potential future land development.

Potability of Ground Water:

Since the Property is located in the City of Mississauga, it is concluded that the use of non-potable ground water Standards would be acceptable for the Property. On January 13, 2017, OHE sent out a written request to the City of Mississauga for confirmation of non-potable ground water criteria for the Property. No response has been received from City of Mississauga at the time of issuance of this report.

Site Sensitivity:

- 1) An information request was made to the Ministry of Natural Resources and Forestry (MNRF) in order to determine if there were any areas of natural significance and/or Species-At-Risk at the Properties or surrounding area.
- 2) The Property was not identified as being in an Environmentally Significant Area, Valleyland, Unevaluated, Provincially Significant or Locally Significant Wetland, Significant or Contributory Woodland or Area of Natural and Scientific Interest (ANSI), in the current City of Mississauga Official Plan (accessed online via the City internet web site). The Property was listed as mixed use/residential high density. The west portion of the Property was listed as areas of natural hazards due to the presence of Mullet Creek.
- 3) Ontario Regulation 153/04, as amended, defines Areas of Natural Significance as:
 - 1. An area reserved or set apart as a provincial park or conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006.*

The Property is not designated as a Provincial Park or a Conservation Reserve;

2. An ANSI (life science or earth science) identified by the MNRF as having provincial significance.

The MNRF correspondence had not been returned prior to the writing of this report – however, a visual inspection of the Property and of the surrounding properties did not indicate the potential for an ANSI (life science or earth science);

3. A wetland identified by the MNRF as having provincial significance.



The MNRF correspondence had not been returned prior to the writing of this report – however, a visual inspection of the Property and of the surrounding properties did not indicate the potential for a wetland;

4. 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.

The City of Mississauga, as per the Official City Plan noted that the site and surrounding area are not listed as environmentally significant;

5. 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*.

The Property is not located in the area of the Niagara Escarpment;

6. An area identified by the MNRF as significant habitat of a threatened or endangered species.

No physical evidence as to the presence of a threatened or endangered species was identified by OHE at the Property.

7. An area which is habitat of a species that is classified under Section 7 of the *Endangered Species Act*, 2007 as a threatened or endangered species.

No physical evidence as to the presence of a threatened or endangered species was identified by OHE at the Property. It should be noted that OHE did not conduct a Species at Risk assessment of the Property.

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* applies.

The Property is not located within the Oak Ridges Moraine.

9. An area set apart as a wilderness area under the Wilderness Areas Act

The MNRF correspondence not been returned prior to the writing of this report – however, a visual inspection of the Property and of the surrounding properties did not indicate a wilderness area.

Shallow Site Property:

• All boreholes drilled on the Property encountered more than 2 m of soil or other overburden. The drilling program indicated that more than 1/3 of the area of the Property consists of soil greater than 2 m in depth below the soil surface, and the Property is not identified as a Shallow Site Property.

Stratified Soil Property:

• Stratified soil Standards were not selected for use in the Phase Two ESA.

Soil Texture:

• Based upon OHE's field observations during the Phase Two ESA drilling, coarse textured soil Standards were selected for comparison of laboratory analytical results. This selection was based upon the heterogeneity of the soil as observed by OHE during the drilling of the boreholes. In addition, since grain size analysis was not performed for the Property, coarse textured soil Standards were used as they are more stringent than medium/fine textured Standards.

Based on the above information, OHE determined that Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water condition for Residential / Parkland / Institutional properties with coarse-textured soils are the applicable Standards, as per Ontario Regulation 153/04, as amended.

3 BACKGROUND INFORMATION

3(i) Physical Setting

Site Description:

The Property is situated on the south side of Tannery Street, approximately 40 m west of Broadway Street in Mississauga. The Property consisted of three (3) parcels under three (3) municipal addresses: 51, 57 Tannery Street and 208 Emby Drive, Mississauga, Ontario. Mullet Creek was present along the west property boundary. Canadian Pacific Railway (CPR) railway tracks were present along the east property boundary.

Water Bodies within Proximity of the Phase Two ESA Property:

Based on OHE's review of relevant information and visual inspection, Mullet Creek was present along the west property boundary.

Topography and Surface Water Drainage on the Phase Two ESA Property:

A review of an online topographical map provided by the Atlas of Canada indicated the Property was situated at approximate elevation of 153 m to 158 m above mean sea level. The topography of the Property and local area indentified during the Property reconnaissance as slightly sloping towards the west. Based on the observed topography, ground water flow direction was expected to be towards the west.

3(ii) Past Investigations

The following previous environmental investigations were conducted on the Property:



• <u>Phase 1 Environmental Site Assessment, 51 Tannery Street, Mississauga, Ontario, prepared for</u> 2003990 Ontario Inc., prepared by Coffey Geotechnics Inc. (Coffey), dated February 11, 2014:

The subject site is located on the south side of Tannery Street. It was occupied by a converted office building, residential duplex, and a shed. The west side of the subject site was paved with a driveway and a parking lot.

No previous environmental reports were reviewed by Coffey.

Coffey reviewed the following available aerial photographs:

- 1874-1881 county atlas map: subject site located in an area designated for non-agricultural development with Canadian Pacific Railway (CPR) present to the east;
- 1954 aerial photograph: the subject site consisted of a building, a shed and two (2) driveways;
- 1963, 1966, 1978, 1985, 1995, 2002, 2006, and 2013: the subject site is developed with three (3) buildings and is in similar configuration to present day.

Coffey reviewed available municipal directories from 1964 to 2001, which indicated the subject site has been occupied by commercial/residential properties during that period. The north and south adjoining properties were listed as commercial/industrial properties from 1959 to 2001.

Coffey reviewed available 1939 FIP with the following findings: the subject site was developed with a two (2) storey residential dwelling on the northeast portion, a one (1) storey structure (potentially a shed) to the south of the building. The north and south adjoining properties were occupied by residential dwellings.

Coffey reported that Technical Standards & Safety Authority (TSSA) indicated no tank records were located with respect to the subject site. However, the TSSA has record of two (2) active USTs for 208 Emby Drive.

Based on the construction time (1900s and 1950s), Coffey concluded that asbestos containing materials (ACMs) are expected to be present in the building materials.

One (1) AST was observed by Coffey on the south adjoining property (208 Emby Drive – part of the OHE Phase One ESA Property). No other ASTs or vent/fill pipes indicative of a UST were observed on the adjoining properties at the time of subject site visit.

No EcoLog ERIS report was included or reviewed by Coffey.

Based upon the Phase I ESA, Coffey identified the following potential environmental concerns on the subject site:



- one (1) underground storage tank (UST) located adjacent to the duplex;
- one (1) potential former AST present within the basement of the commercial building;
- vent and fill pipes at the northeast corner of the subject site;
- the south and north adjoining properties were listed for the use and/or storage of hazardous wastes including paint/pigment/coating residues and other specified inorganics;
- electrical conductivity (EC) and sodium adsorption ratio (SAR) impacts may be present in the subsurface soils within areas of the subject site, due to de-icing salts applying activities;
- fill materials of unknown origin and environmental quality may have been used for site grading purposes at the time of the building construction;
- the east adjoining property consists of a segment of the CPR and single storage two-bay garage of unknown occupancy;
- the north adjoining property was listed under Record of Site Condition (RSC) number 210848;

The north adjoining property was industrially utilized since the 1960s. The RSC was issued with a Certificate of Property Use (CPU), with concentrations of various metal and inorganic parameters exceeded the MOECC Table 3 and Table 9 Standards in both soil and ground water media. This property is situated at a presumed upgradient location relative to the subject site.

Coffey, therefore, recommended a Phase 2 Environmental Soil & Groundwater Investigation to confirm/refute the potential environmental soil and groundwater impacts at the subject site.

• <u>Phase 2 Environmental Soil & Groundwater Investigation, 51 Tannery Street, Mississauga,</u> <u>Ontario, prepared for 2003990 Ontario Inc., prepared by Coffey, dated April 23, 2014:</u>

Coffey conducted a Phase 2 Environmental soil & Groundwater Investigation (ESGI) to address potential environmental issues identified in their 2014 Phase 1 ESA report (details discussed above).

On February 21, 2014, four (4) boreholes were drilled on the subject site with depth ranging from 7.6 m to 9.1 m below grade, all completed as ground water monitoring wells (BH101 to BH104). Fill materials were reportedly encountered in all four (4) boreholes to a maximum depth of 2.3 m below grade. Ground water was observed in BH102, BH103 and BH104, at approximately 5.3 m below grade.

The soil conditions were described by Coffey as follows: 75 to 102 mm asphalt followed by granular material (50 to 102 mm thickness); silt fill material with trace sand and clay were observed to depths of 2.3 m to 3 m below grade, underlain with compact silt with trace sand and gravel to maximum 9.1 m below grade. A grain size analysis indicated the texture of the soils encountered on site is considered to be medium and fine textured.



Five (5) soil samples and four (4) groundwater samples were submitted for laboratory analysis of metals & inorganic parameters, volatile organic compounds (VOCs) and petroleum hydrocarbons (PHCs). The laboratory analytical results were compared with MOECC Table 3 Standards. One (1) composite soil sample was also analyzed using the Toxicity Characteristic Leachate Procedure (TCLP) for metals & inorganic parameters, VOCs, polychlorinated biphenyls (PCBs) and benzo(a)pyrene (BAP) for waste classification purposes in accordance with Ontario Regulation 347, as amended.

Ground water flow direction was determined to be in a southeast direction.

A ground penetrating radar (GPR) scan was conducted for the off-site vent and fill pipes located northeast of the Property on March 20, 2014. The data did not have any anomalies that would indicate the presence of a UST. Furthermore, based on the conversations between Coffey and City of Mississauga employees, the vent and fill pipes located on the northeast side of subject site were unlikely to belong to 51 Tannery Street.

The UST adjacent to the duplex was removed and disposed off-site in April, 2014. The tank was measured to be approximately 1.05 m in diameter, 1.15 m in length and had a volume of approximately 1,000 L with all sides observed to be perforated. PHC impacted soils were observed at the immediate surrounding of the UST and were excavated from the subject site. The PHC impacted soils were not observed to extend directly underneath the building footing. A total of six (6) confirmatory soil samples were collected from the walls and floor of final excavation area (2.8 m by 2.8 m, and 2.8 to 2.9 m below grade) and tested for PHCs fraction F1 to F4 and BTEX.

All tested soil samples, groundwater samples and confirmatory soil samples met the applicable MOECC Table 3 Standards. Coffey concluded "no further investigate work is recommended for the subject site as the concentrations of both soil and groundwater currently meet the MOE Table 3 Standards for RPI property use for coarse textured soils".

• <u>Phase One Environmental Site Assessment, Commercial/Light Industrial Property, 51, 57</u> <u>Tannery Street, and 208 Emby Drive, Mississauga, Ontario, prepared for Nyx, prepared by OHE,</u> <u>dated December, 2016</u>:

OHE Consultants (OHE) was retained by Nyx Capital Corp. to conduct a Phase One Environmental Site Assessment (ESA) for the site located at 51, 57 Tannery Street and 208 Emby Drive, Mississauga, Ontario (the "Property").

The Property was developed with:

• four (4) single family residential dwellings (Buildings A, B, C and D), located on the north portion (51 and 57 Tannery Street) of the Property;



- one (1) single family residential dwelling (Building F), located on the central portion (208 Emby Drive) of the Property;
- three (3) commercial/light industrial buildings (Buildings E, G and H), located on the south portion (208 Emby Drive) of the Property, occupied by commercial tenants including Schueler Auto Service, Upright Door & Dock Systems (garage door repair), and Superior Vault Co. Ltd. (manufacturer and distributor of concrete burial vaults).

Additional commercial tenants registered at 208 Emby Drive including private individuals for storage trailer parking, on the west portion of the Property (along Mullet Creek).

One (1) 910 L diesel aboveground storage tank (AST) was located on the west exterior side of Building F, associated with the furnace in the basement for building heating. One (1) 4,600 L diesel AST was located on the northwest exterior corner of Building E, situated in a concrete secondary containment pool, used for vehicle refueling for Superior Vault.

Based on OHE's discussion with the current owner, two (2) former underground storage tanks (USTs) were reportedly removed from the southeast corner of Building E. Furthermore, one (1) UST was reportedly located on the east side of Building H and was removed years ago. In addition, the Technical Standards & Safety Authority (TSSA) tank report indicated a total of three (3) fuel tanks registered at 208 Emby Drive. The exact location and details of these USTs were unknown and no documentation available for review.

OHE recommended that boreholes and ground water monitoring wells be conducted at the locations of three (3) former USTs at 208 Emby Drive.

4 SCOPE OF THE INVESTIGATION

4(i) Overview of the Site Investigation

The purpose of conducting the Phase Two ESA was to provide verification of soil and ground water conditions in the vicinity of three (3) former underground storage tanks (USTs) reportedly present on the east sides of Buildings E and H at 208 Emby Drive.

The agreed upon Phase Two ESA scope of work for the Site is tailored after the Canadian Standard Association (CSA) Phase II Environmental Site Assessment; Z769-00, dated March 2000, as amended April 2003, and Ontario Regulation 153/04, as amended.

- All underground utilities were located prior to any drilling activities.
- Prior to the commencement of field activities, OHE completed a Health & Safety Plan which was subject to management review and approval.



• Profile was retained to advance four (4) boreholes to a maximum depth of 8 m below the ground surface or until drilling refusal was encountered.

Boreholes BH101 and BH102 were drilled at the location of the former USTs, at the southeast exterior of Building E. Boreholes BH103 and BH104 were drilled at the east exterior of the Building H within the reported likely former location of the UST.

- Soil samples were field screened during borehole drilling using an RKI Eagle portable gas detector. Representative and/or "worst-case" soil samples retrieved during the drilling of the boreholes were submitted for laboratory analysis of PHCs. One (1) duplicate sample was also retrieved and submitted for laboratory analysis of BTEX.
- All soil cuttings generated during drilling activities were containerized.
- Two (2) boreholes (BH 102 and BH104) were completed as ground water monitoring wells. The wells were constructed using 50 mm diameter polyvinyl chloride (PVC) screen and riser pipe. The screen pipes were 3.05 m maximum and were placed so as to transect the water table. The monitoring well annular space were backfilled with silica sand from the bottom of the well to approximately 0.30 m above the top of the screen pipe, and from the top of the riser to approximately 0.30 m below the ground. The remainder of the monitoring well annular spaces were backfilled with a flushmount casing.
- The monitoring wells were monitored, developed and purged in accordance with CSA Z769-00 (R2013), and Ontario Regulation 153/04, as amended.
- Ground water samples were retrieved from the monitoring wells and submitted for laboratory analysis of PHCs. One (1) duplicate sample was also retrieved and submitted for laboratory analysis of BTEX.
- The results of the ground water laboratory analysis were compared with the current applicable MOECC Standards stipulated in Ontario Regulation 153/04, as amended.
- All laboratory Certificates of Analysis were evaluated for laboratory quality assurance/quality control (QA/QC) factors such as laboratory duplicates, matrix spike samples, matrix blank samples, spiked blank samples, and surrogate recoveries.

The Sampling and Analysis Plan for the Phase Two ESA is included in this report in Appendix A.

4(ii) Media Investigated

Rationale for Media Investigation:

As per the agreed upon scope of the Phase Two ESA, the media investigated were soil and ground water. The justification for the media investigated is as follows:



The media of potential environmental concern, as identified in the previous environmental assessment, was soil and ground water.

Field Investigation Overview:

As per the Phase Two ESA scope, soil samples were obtained from all borehole locations. Ground water samples were obtained from the newly installed monitoring wells. Soil samples and ground water samples were submitted for laboratory analysis of PHCs and BTEX.

4(iii) Deviations from Sampling and Analysis Plan

The soil sampling and analysis plan were carried out as detailed in the scope of work. No deviations from the original work scope occurred during this investigation with the following exception: borehole BH104 was completed at depth of approximately 9.14 m below grade in order to intersect ground water in the monitoring well.

4(iv) Impediments

There were no physical impediments or significant denial of access during the Phase Two ESA drilling program.

5 INVESTIGATION METHOD

5(i) General

Design and execution of the intrusive subsurface investigation was generally completed using methods from the MOECC document *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, dated May 1996 and Ontario Regulation 153/04 made under Part XV.1 of the *Environmental Protection Act*, dated May 12, 2004, as amended.

All investigation activities were conducted in accordance with OHE's Standard Operating Procedures (SOPs) and industry standard protocols.

5(ii) Drilling Activities

OHE obtained public locate clearances for all potentially buried utilities. In addition, OHE confirmed that the borehole locations were not intersected by buried utilities through the use of a private locating company (OnSite Locates).

OHE retained the services of Profile to provide borehole drilling services and assist with soil sample collection. After receiving clearance of all public and private utilities, four (4) boreholes (BH101 to BH104) were advanced on January 20, 2017 to a maximum depth of approximately 9.14 m below grade. Two (2) boreholes were completed as monitoring wells (BH102 and BH104). The boreholes were advanced using Profile's Power Probe 9700-VTR drill rig by direct push method using solid stem augers. Samples were obtained using 1.22 m disposable PVC sampler.



5(iii) Soil: Sampling

Sample collection and handling procedures were conducted in general accordance with the MOECC *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* document, dated 1996 and OHE's SOPs. Borehole soil samples were obtained using split spoon samplers. Borehole soil samples were visually classified and screened in the field for organic headspace vapour concentrations utilizing an RKI Eagle portable gas detector, calibrated to hexane. Borehole soil samples were selected to represent the "worst case" for each borehole based on visual and olfactory observations, along with organic vapour readings, and submitted for laboratory analysis.

The stratigraphic profile at the Property generally consisted of silt with sand and clay identified at a single borehole location.

Wet to saturated soil conditions were not observed in soils samples. Ground water level measured during the ground water monitoring program was found to be at 2.685 m and 2.815 m below grade or more.

The borehole and monitoring well locations are shown in Drawing 2. Information on subsurface conditions such as stratigraphy, presence/absence of ground water and soil organic headspace vapour concentrations was logged at the time of digging (Borehole Logs are presented in Appendix B).

A summary of soil samples submitted for laboratory analysis is presented in Table 1.

5(iv) Field Screening Measurements

Soil samples were recovered at continuous intervals from each borehole and were visually classified and screened in the field for soil headspace organic vapour concentrations utilizing an RKI Eagle portable gas detector, calibrated to hexane.

Based on visual and olfactory observations, along with limited organic vapour readings, soil samples from the boreholes that exhibited the greatest apparent degree of impact were selected and submitted for laboratory analysis.

5(v) Ground Water: Monitoring Well Installation

Two (2) boreholes (BH102 and BH104) were completed as ground water monitoring wells in accordance with Ontario Regulation 903/90, per amended requirements and standardized industry practices. The monitoring wells were constructed using 50 mm diameter, Schedule 40 PVC riser and screen.

Each well consisted of a 3 m screened section, placed to intersect the water table (if observed). The bottom of the screen was capped with a 50 mm diameter PVC cap while the riser was sealed with a lockable J-plug cap. Silica sand was placed around the screen to create a proper sand pack and brought to a minimum depth of 0.3 m above the screen. Bentonite was placed above the silica sand and extended to approximately 30 cm below the top of the riser pipe. To complete the monitoring well, 0.15 m diameter flushmount casings were installed and cemented in place.



The borehole and monitoring well locations are shown on Drawing 2 and the details of the well installations are presented on the appended Borehole Logs (Appendix B).

The monitoring wells were installed by Profile and Monitoring Well Records were completed according to Ontario Regulation 903/90, as amended. All monitoring well installation protocols were followed, including the use of nitrile gloves to avoid cross-contamination.

5(vi) Ground Water: Field Measurement of Water Quality Parameters

Ground water field measurement of water quality parameters were measured using a Horiba U-52 Multiparameter water quality checker. Parameters measured included temperature, pH, oxidation reduction potential, conductivity, turbidity and dissolved oxygen.

5(vii) Ground Water: Sampling

Prior to monitoring and sampling, the ground water monitoring well was developed by purging each well until the following parameters stabilized: temperature, pH, oxidation reduction potential, conductivity, turbidity and dissolved oxygen.

The monitoring well was inspected and organic headspace vapour concentrations were measured using an RKI Eagle portable gas detector. The depth to ground water and/or non-aqueous phase liquid (NAPL) was measured using a HeronTM inter-phase probe. The inter-phase probe was cleaned with AlconoxTM detergent and deionised water solution and rinsed in deionised water prior to use.

Ground water monitoring and sampling was conducted by OHE on January 23, 2017. Ground water sampling was conducted by OHE using a dedicated WaterraTM tube installed into each monitoring well with low flow pumping equipment.

A summary of ground water samples submitted for laboratory analysis is presented in Table 1. Ground water monitoring data is presented in Table 2.

5(viii) Sediment: Sampling

Sediment samples were not included as part of the scope for the Phase Two ESA.

5(ix) Analytical Testing

AGAT Laboratories (AGAT) of Mississauga, Ontario, was retained to perform analytical testing. AGAT is designated as an accredited laboratory by the Canadian Association for Laboratory Accreditation Inc. (CALA) and employs in-house quality assurance/quality control (QA/QC) programs to verify sample integrity that consist of surrogate analysis, matrix spike samples, spiked blank samples, method blank samples, laboratory duplicate samples, and QA samples.



5(x) Residue Management Procedures

Soil cuttings and purged ground water were containerized. The containers remain at the Property.

5(xi) Elevation Surveying

An elevation survey was not conducted as part of OHE Phase Two ESA.

5(xii) Quality Assurance and Quality Control Measures

QA/QC protocols were followed during the field work to ensure that representative samples were obtained. The general QA/QC protocols include the following:

- Disposable nitrile gloves and clean tools were used to collect each soil and ground water sample for analysis;
- Field screening soil samples were placed in clean disposal bags and labeled accordingly;
- Samples were placed in clean, sealed, laboratory supplied glass jars or bottles, assigned individual labels, and preserved at below 10°C for transportation to the analytical laboratory under formal chain of custody procedures; and
- Sample collection and handling procedures were conducted in general accordance with the MOECC *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* document, dated 1996 and OHE's SOPs.

OHE also evaluated QA/QC Reports, reported to OHE as part of the laboratory Certificate of Analysis. It should be noted that OHE submitted one (1) soil field duplicate sample (DUP1) and one (1) ground water field duplicate sample (DUP5) for analysis of BTEX.

6 **REVIEW AND EVALUATION**

6(i) Geology

The stratigraphic profile at the Property generally consisted of silt with sand and clay identified at one (1) of four (4) borehole locations.

Reginal geological soil data were obtained via *Ontario Geological Survey 2010; Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 128-REV-OGS* Earth Mapping Service, Google earth. The area soils reportedly primarily consisting of clay to silt-textured till. Local bedrock was indicated as Queenston Formation shale.



6(ii) Ground Water: Elevations and Flow Direction

Monitoring well BH102 was screened between approximately 6.10 m and 7.62 m below grade, monitoring well BH104 was screened between approximately 7.62 m and 9.14 m below grade. The monitoring wells were screened primarily within non-sampled soil to ensure that any light non-aqueous phase liquid (LNAPL), if present, would be detected. No LNAPL was detected in any of the monitoring wells.

Ground water levels measured during the Phase Two ESA ranged from 2.685 m below grade (BH102) to 2.815 m below grade (BH104).

An elevation survey was not conducted as part of OHE Phase Two ESA.

6(iii) Ground Water: Hydraulic Gradient

Horizontal and vertical hydraulic gradients were not estimated as part of OHE Phase Two ESA.

6(iv) Coarse Soil Texture

Grain size analysis was not performed for the Property. Therefore the applicable site condition Standards used were Table 3 Standards for coarse-textured soils since coarse-textured soils Standards are generally more stringent than medium-fine textured soil criteria.

6(v) Soil: Field Screening

Soil samples were recovered at regular intervals from each core sample recovered and were visually classified and screened in the field for soil organic headspace vapour concentrations utilizing an RKI Eagle portable gas monitor, calibrated to hexane.

Based on visual and olfactory observation, along with limited organic vapour readings, soil samples from boreholes that exhibited the greatest apparent degree of impact were selected and submitted for laboratory analysis. Soil organic vapour concentrations measured in the soil samples recovered during the investigation ranged from 0 to 720 ppm and are presented in detail on the Borehole Logs in Appendix B.

6(vi) Soil Quality

All PHCs and BTEX concentrations in submitted soil samples were found to be below the applicable MOECC Table 3 Standards with the following exceptions:

- BH103:
 - PHCs: PHC fractions F1 and F2.
- BH104:
 - PHCs: PHC fraction F2.



A summary of the soil analytical results is presented in Table 3. Soil contamination data is shown in Drawing 3. The laboratory Certificates of Analysis for soil is presented in Appendix C. A drawing showing soil exceedances is presented in Drawing 4.

6(vii) Ground Water Quality

Review of laboratory analytical results indicated that concentrations of PHCs fractions F1-F4 and BTEX in the submitted ground water samples were below the applicable MOECC Table 3 Standards.

It should be noted that LNAPLs were not observed during the investigation.

A summary of the ground water analytical results is presented in Table4. The laboratory Certificates of Analysis for ground water is presented in Appendix C. A drawing showing ground water exceedances is presented in Drawing 4.

6(viii) Sediment Quality

Sediment samples were not collected as part of the scope for the Phase Two ESA at the Property.

6(ix) Quality Assurance and Quality Control Results

The general OHE field QA/QC protocols include the following:

- Disposable nitrile gloves and clean hand tools were used to collect each soil sample for analysis;
- Field screening soil samples were placed in clean disposal bags and labeled accordingly;
- Samples were placed in clean, sealed, laboratory supplied glass jars or bottles, assigned individual labels, preserved at below 10 °C and transported to AGAT under formal chain of custody procedures; and
- Sample collection and handling procedures were conducted in general accordance with the MOECC *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* document, dated 1996 and OHE's SOPs.

OHE submitted one (1) soil field duplicate sample (DUP1) for analysis of BTEX. The duplicate soil sample named DUP1 was a duplicate of soil sample BH103-2. One (1) duplicate ground water sample (DUP5) was collected and analyzed for BTEX. The duplicate ground water sample named DUP5, was a duplicate of ground water sample BH102.

A Relative Percent Difference (RPD) can be calculated between a sample and its duplicate if all associated reported concentrations are at least five (5) times the laboratory detection limit.

The RPDs between BH103-2 and soil sample DUP1 could not be calculated as the reported concentrations were not five (5) times the laboratory detection limit.



The RPDs between BH102 and ground water sample DUP5 could not be calculated as the reported concentrations were not five (5) times the laboratory detection limit.

Review of AGAT's QA/QC for soil and ground water analysis revealed no issues with respect to laboratory duplicates, reference materials, method blank spikes, or matrix spikes. All values were reported within the acceptable limits.

The Certificates of Analysis received by OHE as part of the Phase Two ESA primarily comply with Section 47(3) of Ontario Regulation153/04 as amended. The Certificates of Analysis have been included in full within Appendix C of this report. The Certificates of Analysis report all analysis carried out for all sampling locations within this Phase Two ESA.

6(x) Phase Two ESA Conceptual Site Model

Description of Physical Setting of the Phase Two ESA Property:

The stratigraphic profile at the Property generally consisted of silt with sand and clay, identified at borehole location BH101.

Wet to saturated soil conditions were not observed in soils samples during the Phase Two ESA. Ground water level measured during the Phase Two ESA were 2.685 m and 2.815 m below grade.

Subsurface utilities were identified during the service locating process, associated with the Phase Two ESA. No utilities were identified within 1 m of the borehole locations.

Description of Contaminant at the Phase Two ESA Property:

Based on the work completed as part of this Phase Two ESA and the analytical results of the submitted soil and ground water samples, PHC soil contaminations were identified at the east exterior of the building occupied by Superior Vault Co. Ltd. (Building H), potentially associated with the former UST.

Influence of Subsurface Structures or Utilities under the Phase Two ESA Property on Contaminant Distribution and Transport:

Subsurface utilities were identified during the service locating process, associated with the Phase Two ESA. No utilities were identified in within 1 m of the borehole locations.

Property Stratigraphy:

Grain size analysis was not carried out as part of the Phase Two ESA.

The stratigraphic profile at the Property generally consisted of silt with minor sand and clay. The depth to bedrock was not determined as bedrock was not encountered during the drilling activities.



Ground water level measured during the Phase Two ESA was found to be 2.685 m and 2.815 m below grade.

Any respect to which Sections 41 or 43.1 (from the Regulation) apply to the Property:

These sections were reviewed in detail, and were found to not apply to the Property.

Areas Where Soil has been Brought from another Property and Placed on, in or under the Phase Two ESA Property:

It is assumed that fill materials were used as part of the development of the Property.

Approximate Locations, if known, of any Proposed Buildings or other Structures:

OHE had no knowledge of any future building locations onsite. No potential concerns were identified with respect to potential vapour intrusion into any future buildings.

7 CONCLUSIONS

The purpose of the Phase Two ESA was to provide verification of soil and ground water conditions in the vicinity of three (3) former underground storage tanks (USTs) at 208 Emby Drive.

At the time of the Phase Two ESA, the Property was developed with:

- four (4) single family residential dwellings (Buildings A, B, C and D), located on the north portion (51 and 57 Tannery Street) of the Property;
- one (1) single family residential dwelling (Building F), located on the central portion (208 Emby Drive) of the Property;
- three (3) commercial/light industrial buildings (Buildings E, G and H), located on the south portion (208 Emby Drive) of the Property, occupied by commercial tenants including Schueler Auto Service, Upright Door & Dock Systems (garage door repair), and Superior Vault Co. Ltd. (manufacturer and distributor of concrete burial vaults).

Soil Laboratory Analytical Results

All PHCs and BTEX concentrations in submitted soil samples were found to be below the applicable MOECC Table 3 Standards with the following exceptions:

- BH103:
 - PHCs: PHC fractions F1 and F2.
- BH104:
 - PHCs: PHC fraction F2.



Ground Water Laboratory Analytical Results

Review of laboratory analytical results indicated that concentrations of PHCs fractions F1-F4 and BTEX in the submitted ground water samples were below the applicable MOECC Table 3 Standards.

Based on the work completed as part of this Phase Two ESA and the analytical results of the submitted soil and ground water samples, PHCs soil contaminations were identified on the east side of the building occupied by Superior Vault Co. Ltd. (Building H). It was not determined if these contamination extended under the building footprint. The source of the above-noted contamination is suspected to be related to historical UST.

The identified PHCs exceedances in soil were assumed to be contained within a proposed excavation area of approximately 10 m long x 8 m wide x 4 m depth, located on the immediate northeast exterior side of Building H (Superior Vault Co. Ltd.). A contractor cost estimate of \$100 per tonne was used to calculate the proposed remediation program, based on the following assumptions:

- 1. It is assumed that 1 cubic meter (m³) of excavated soil equals to approximately 2 tonnes in mass.
- The unit price of \$100 per tonne was provided by OHE's contractor and is subject to verification. It is assumed that clean back-fill soils will be brought to site by the contractor as part of these costs.
- 3. The proposed excavation area was measured based on OHE's environmental work conducted/information received to date. Final excavation area will be determined by additional field screening and laboratory analysis of confirmatory samples.
- 4. It is assumed that all potentially contaminated soil within the proposed excavation area will be easily accessible (i.e. does not extend under the building footprint).

A total contractor cost of \$64,000 is calculated based on the above assumptions for the remediation program. This is an estimate only, based upon assumptions and requires field verification. It also does not include consulting costs, including field time, laboratory analysis or reporting.



Report Limitations

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Conclusions presented in this report should not be construed as legal advice.

The comments and conclusions presented in this report represent the best technical judgment of OHE Consultants based on the data obtained from the work and site conditions encountered by OHE Consultants at the time the work was performed at the specific testing and/or sampling locations, and can only be extrapolated to an undefined area around these locations. The extent of the limited area depends on the soil and groundwater conditions, as well as the history of the site reflecting natural processes, construction and other activities. OHE Consultants considers this report to be representative of the conditions encountered at the Property. In addition, analysis has been carried out for a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, OHE Consultants cannot warrant against undiscovered environmental liabilities.

If conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

Use of Report

This report has been prepared for exclusive use by Nyx Capital Corp. for specific application to this site. The report may not be used by any other person or entity without the express written consent of OHE Consultants and/or Nyx Capital Corp. Any use which a third party makes of this report, or any reliance on decisions based on it, is the responsibility of such third parties. OHE Consultants accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. Any third party who may have an interest in the site must do their own testing and interpretation to determine if the site conditions affect them.



Closure

We trust that the information presented herein meets your current requirements. Should you have any questions or require additional information, please do not hesitate to contact the undersigned at 905-890-9000.

OHE Consultants

Occupational Hygiene & Environment

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8 **REFERENCES**

- Atlas of Canada (http://atlas.nrcan.gc.ca);
- Canadian Standards Association Phase II ESA standard; Z769-00, dated March 2000, as amended April 2003;
- City of Mississauga;
- MOECC Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario document, dated 1996;
- MOECC Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated April 15, 2011 (Ontario Regulation 511/09 amendments);
- MNRF;
- Ontario Regulation 153/04 made under Part XV.1 of the *Environmental Protection Act*, dated May 12, 2004, as amended;
- MOECC Drinking Water Ontario;
- Phase 1 Environmental Site Assessment, 51 Tannery Street, Mississauga, Ontario, prepared for 2003990 Ontario Inc., prepared by Coffey Geotechnics Inc. (Coffey), dated February 11, 2014;
- Phase 2 Environmental Soil & Groundwater Investigation, 51 Tannery Street, Mississauga, Ontario, prepared for 2003990 Ontario Inc., prepared by Coffey, dated April 23, 2014;
- Phase One Environmental Site Assessment, Commercial/Light Industrial Property, 51, 57 Tannery Street, and 208 Emby Drive, Mississauga, Ontario, prepared for Nyx, prepared by OHE, dated December, 2016.



DRAWINGS







TABLES

TABLE 1Samples Submitted for Laboratory AnalysisSoil and Ground Water

					Parame	ters	
Sample Type	Sample ID	AGAT Reference #	Sample Depth (m)	Concentration (ppm / % LEL)	PHCs	BTEX	Comments
	BH101-4	8143297	3.66 - 4.88	0 ppm	\boxtimes	X	
	BH102-4	8143306	3.66 - 4.88	0 ppm	\boxtimes	\mathbf{X}	
Phase Two ESA - Soil	BH103-2	8143308	1.22 - 2.44	0 ppm	X	\times	
	BH104-2	8143310	1.22 - 2.44	0 ppm	X	\mathbf{X}	
	DUP1	8143313	1.22 - 2.44	0 ppm		X	Duplicate of BH103-2
	BH102	8143316	-	52 % LEL	X	X	
Phase Two ESA -	BH104	8143317	-	840 ppm	\boxtimes	X	
Ground Water	DUP5	8143321	-	-		X	Duplicate of BH102
	Trip Blank	8143324	-	-		X	

Notes:

- ppm parts per million
- PHCs Petroleum Hydrocarbons
- BTEX Benzene, Toluene, Ethylbenzene, Xylenes
- LEL Lower Explosion Limit

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TABLE 2Ground Water Elevation Data

Well Number	Date	NAPL Level Measurement from TOC (m)	Water Level Measurement from TOC (m)	Product Thickness (m)	Calculated Water Level Elevation (mREL)
BH102	23/01/2017	N/A	2.685	N/A	N/A
BH104	23/01/2017	N/A	2.815	N/A	N/A

Notes:

- mREL Indicates Groundwater Elevation (metres) Relative To Site Benchmark
- NAPL Non-Aqueous Phase Liquid
- TOC Indicates Top of Casing (Grade)
- N/A Not Applicable



TABLE 3 Laboratory Analytical Results Soil - Benzene, Toluene, Ethylbenzene, Xylenes, Petroleum Hydrocarbons

				Sample	Designation				
		Date Sampled (dd/mm/yyyy)							
				Sample	e Depth (m)				
Parameter	Table 3			Soil Vapour Co	oncentration (ppn	n)			
Furumeter	Standards		BH101-4	BH102-4	BH103-2	BH104-2	DUP1		
		RDL	20/01/2017	217/01/20	217/01/20	217/01/20	20/01/2017		
			3.66 - 4.88	3.66 - 4.88	1.22 - 2.44	1.22 - 2.45	1.22 - 2.44		
			0	0	0	0	0		
Benzene	0.21	0.02	< 0.02	< 0.02	0.05	< 0.02	0.04		
Toluene	2.3	0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.05		
Ethylbenzene	2	0.05	< 0.05	< 0.05	0.36	< 0.05	0.21		
Xylene Mixture	3.1	0.05	< 0.05	< 0.05	0.21	< 0.05	0.15		
F1 (C6 to C10) minus BTEX	55	5	<5	<5	110	<5	NA		
F2 (C10 to C16)	98	10	<10	<10	180	160	NA		
F3 (C16 to C34)	300	50	<50	<50	110	87	NA		
F4 (C34 to C50)	2800	50	<50	<50	<50	<50	NA		

Notes:

All Values Reported in Units of $\mu g/g$

 Table 3 Standards
 Ontario Regulation 153/04 "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of Environmental Protection Act, April 15, 2011, Table 3 Standards, Coarse Textured Soils, Non-Potable Groundwater Conditions, for Residential / Parkland / Institutional Property Uses."

 BOLD
 Exceeds Table 3 Standards

 RDL
 Reportable Detection Limit

 Note 1
 DUP 1 is a field duplicate of BH103-2

 NA
 Not Analyzed

Nyx Capital Corp. Phase Two Environmental Site Assessment 208 Emby Drive, Mississauga, Ontario OHE Project No.: 21170-001 January 2017



TABLE 4

Laboratory Analytical Results Ground Water - Benzene, Toluene, Ethylbenzene, Xylenes, Petroleum Hydrocarbons

		Sample Designation						
		Date Sampled (dd/mm/yyyy)						
Danamatan	Table 3	Soil Vapour Concentration (ppm)						
Furameter	Standards		BH102	BH104	DUP5	Trip Blank		
		RDL	23/01/2017	23/01/2017	23/01/2017	-		
			52% LEL	840 ppm	-	-		
Benzene	44	0.20	< 0.20	< 0.20	< 0.20	< 0.20		
Toluene	18000	0.20	< 0.20	< 0.20	< 0.20	< 0.20		
Ethylbenzene	2300	0.10	< 0.10	< 0.10	< 0.10	< 0.10		
Xylene Mixture	4200	0.20	< 0.20	< 0.20	< 0.20	< 0.20		
F1 (C6 to C10) minus BTEX	750	25	<25	<25	NA	NA		
F2 (C10 to C16)	150	100	<100	<100	NA	NA		
F3 (C16 to C34)	500	100	<100	<100	NA	NA		
F4 (C34 to C50)	500	100	<100	<100	NA	NA		

Notes:

All Values Reported in Units of µg/L

Table 3 Standards	Ontario Regulation 153/04 "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of Environmental Protection Act, April 15, 2011, Table 3 Standards, Coarse Textured Soils, Non-Potable Groundwater Conditions, for All Types of Property Use"
BOLD	Exceeds Table 3 Standard
RDL	Reportable Detection Limit
Note 1	DUP 5 is a field duplicate of BH102
NA	Not Analyzed



TABLE 5

Quality Assurance / Quality Control Soil - Benzene, Toluene, Ethylbenzene, Xylenes, Petroleum Hydrocarbons

	Sample Designation Date Sampled (dd/mm/yyyy)						
Danamatan	Headspac	Headspace Vapour Concentration (ppm / % LEL)					
<i>I urameter</i>		BH103-2	DUP1	RPD (%)			
	RDL	20/01/2017	20/01/2017	-			
		0	0	-			
Benzene	0.02	0.05	0.04	NC			
Toluene	0.08	< 0.08	< 0.05	NC			
Ethylbenzene	0.05	0.36	0.21	NC			
Xylene Mixture	0.05	0.21	0.15	NC			
F1 (C6 to C10) minus BTEX	5	110	NA	NC			
F2 (C10 to C16)	10	180	NA	NC			
F3 (C16 to C34)	50	110	NA	NC			
F4 (C34 to C50)	50	<50	NA	NC			

	All Values Reported in Units of µg/L
RDL	Reportable Detection Limit
RPD	Relative Percent Difference
ppm	parts per million
NC	Not calculable (both concentrations must be at least five times the laboratory detection limit).

Please note that DUP1 is a field duplicate of sample BH103-2

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Notes:



TABLE 6 Quality Assurance / Quality Control Ground Water - Benzene, Toluene, Ethylbenzene, Xylenes, Petroleum Hydrocarbons

	Sample Designation					
	Date Sampled (dd/mm/yyyy)					
Paramotor	Headspace Vapour Concentration (ppm / % LEL)					
Turumeter		BH102	DUP5	RPD (%)		
	RDL	23/01/2017	23/01/2017	-		
		52% LEL	-	-		
Benzene	0.20	< 0.20	< 0.20	NC		
Toluene	0.20	< 0.20	< 0.20	NC		
Ethylbenzene	0.10	< 0.10	< 0.10	NC		
Xylene Mixture	0.20	< 0.20	< 0.20	NC		
F1 (C6 to C10) minus BTEX	25	<25	NA	NC		
F2 (C10 to C16)	100	<100	NA	NC		
F3 (C16 to C34)	100	<100	NA	NC		
F4 (C34 to C50)	100	<100	NA	NC		

	All Values Reported in Units of µg/L
RDL	Reportable Detection Limit
RPD	Relative Percent Difference
ppm	parts per million
NC	Not calculable (both concentrations must be at least five times the laboratory detection limit).

Please note that DUP5 is a field duplicate of sample BH102

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Notes:



SAMPLING AND ANALYSIS PLAN

Sampling and Analysis Plan

Scope of Work:

- All underground utilities will be located prior to any drilling activities. If certain underground utilities, such as those constructed of certain types of materials (plastic, clay, concrete, etc.) cannot be located through public and private locators, OHE cannot be held responsible for any damage to such utilities.
- Prior to the commencement of field activities, OHE will complete a Health & Safety Plan which will be subject to management review and approval.
- A drilling subcontractor will be retained to advance four (4) environmental boreholes to a maximum depth of 8 m.
- Soil samples from environmental boreholes will be field screened during borehole drilling. Representative and/or "worst-case" soil samples retrieved during the drilling of the boreholes will be submitted for laboratory analysis of petroleum hydrocarbons (PHCs) F1 to F4 fractions, and benzene, toluene, ethylbenzene and xylenes (BTEX). The work scope includes the submission of one (1) soil sample per parameter per borehole. Soil sample analysis will be sent to the laboratory on regular sample turnaround time. One (1) blind duplicate soil sample will be laboratory analyzed for BTEX for quality assurance / quality control (QA / QC) purposes.
- All soil cuttings generated during drilling activities will be containerized. The quoted price does not include the cost of removing these soil cuttings.
- Two (2) of the four (4) environmental boreholes will be completed as ground water monitoring wells. These wells will be constructed as per the requirements of Ontario Regulation 153/04 as amended, and Ontario Regulation 903 as amended.
- Ground water monitoring, purging, and sampling will be carried out in compliance with applicable regulations, and using low-flow sampling techniques, with parameter stabilization. This technology will ensure that the ground water samples contain minimal sediment, and consist of formation ground water.
- Ground water analytical results will be submitted for laboratory analysis of PHCs and BTEX. The work scope includes the submission of one (1) ground water sample per parameter per monitoring well. Ground water sample analysis will be sent to the laboratory on regular sample turnaround time.
- The soil and ground water analytical results will be compared with the current applicable *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment and Climate Change (MOECC), April 15, 2011.

• All laboratory Certificates of Analysis will be evaluated for laboratory QA/QC factors such as laboratory duplicates, matrix spike samples, matrix blank samples, spiked blank samples, and surrogate recoveries. Appropriate field duplicate soil and ground water samples, and water trip blank samples will be submitted for laboratory analysis in accordance with regulatory requirements.

Soil and Ground Water Investigation Methodology

Design and execution of the intrusive subsurface investigation will be completed using methods from the MOECC document *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, dated May 1996 and Ontario Regulation 153/04 made under Part XV.1 of the *Environmental Protection Act*, dated May 12, 2004, as revised.

OHE will retain a licensed and qualified environmental drilling subcontractor to advance boreholes at selected locations across the Property. All monitoring well installations will be in accordance with both Ontario Regulation 153/04 as amended, and Ontario Regulation 903 as amended.

Information on subsurface conditions such as stratigraphy, presence/absence of ground water and soil organic vapour concentrations will be recorded during the drilling program. Soil samples will be recovered at regular intervals from each core sample and will be visually classified and screened in the field for organic headspace vapour concentrations utilizing a RKI Eagle, calibrated to hexane. Equipment calibration will be checked daily. Based on field screening results, soil samples from boreholes that exhibit the greatest apparent degree of impact will be collected and submitted for laboratory analysis.

All monitoring well purging and sampling will be carried out using low-flow sampling techniques to minimize the amount of purge water and also, to minimize disturbance to the monitoring well formation. The retrieval of sediment with the ground water samples will be minimized, and the sampling of the actual ground water formation will be assured.

Disposable nitrile gloves and clean tools will be used to collect each soil and sample for analysis. The samples will be placed in clean, sealed, laboratory supplied glass jars, assigned individual labels, kept on ice for transport to the analytical laboratory and delivered under chain of custody.

Analytical testing of soil and ground water samples will be conducted by an accredited environmental laboratory, designated by the Canadian Analytical Laboratory Association Inc. (CALA) that employs an in-house quality assurance/quality control (QA/QC) program to verify sample integrity and consisted of laboratory replicates, matrix spikes and surrogate recoveries.

BOREHOLE LOGS

Project No: 21170-001

Client: Nyx Capital Corp.

Location: 208 Emby Drive, Mississauga, Ontario

Driller: Profile

Drilling Rig: Power Probe 9700-VTR



311 Matheson Boulevard East

East Mississauga, Ontario

	SU	BSURFACE PROFILE				SAMPLE		~
Depth	Symbol	Description	Number	Soil Vapour Concentration (ppm)	Recovery (%)	Comments	Laboratory Analysis	Well Completior Details
ft m		Ground Surface						
0 - 0 1 - 1 2 - 1 3 - 1		Brown SAND, moist	1	0	50			
6 7 8		Brown CLAY, some sand, trace gravel, moist	2	0	30			
9 10 11 12 12		Brown SILT, some clay, trace gravel	3	0	30			
13 4 14 1 15 1 16 1		- grey	4	0	30		PHCs and BTEX	
17 - 5 17 - 18 - 19 - 6								
21 22 23 								

Drill Method: Continuous SamplingScreen Length (m): NAAuger Method: Solid Stem AugersWell Casing: NADrill / Auger Date: January 20, 2017Water Level (mbg): NABoring Diameter (m): 0.08Date of Measurement: NAAugering Diameter (m): 0.10Calculated mREL: NADepth of Finished Borehole (m): 4.877Sheet: 1 of 1

Project No: 21170-001

Client: Nyx Capital Corp.

Location: 208 Emby Drive, Mississauga, Ontario

Driller: Profile

Drilling Rig: Power Probe 9700-VTR



311 Matheson Boulevard East

Mississauga, Ontario

	SU	BSURFACE PROFILE				SAMPLE		C
Depth	Symbol	Description	Number	Soil Vapour Concentration (ppm)	Recovery (%)	Comments	Laboratory Analysis	Well Completion Details
ft m		Ground Surface						
0 1 0 1 1 2 1 3 1 1 4 1		Brown SILT, trace gravel, moist	1	0	60			
5 6 7 7 8			2	0	100			
9 10 3 11 12			3	0	100			
13 – 4 14 – 15 –			4	0	80		PHCs and BTEX	
10 - 5 17 - 5 18 19 - 6 21 - 6 21 - 6 23 - 7 24 - 7 25 - 7			_			Auger down		

Drill Method: Continuous Sampling	Screen Length (m): 3.05
Auger Method: Solid Stem Augers	Well Casing: Flushmount
Drill / Auger Date: January 20, 2017	Water Level (mbg): 2.685
Boring Diameter (m): 0.08	Date of Measurement: January 23, 2017
Augering Diameter (m): 0.10	Calculated mREL: NA
Depth of Finished Borehole (m): 7.62	Sheet: 1 of 1

Project No: 21170-001

Client: Nyx Capital Corp.

Location: 208 Emby Drive, Mississauga, Ontario

Driller: Profile

Drilling Rig: Power Probe 9700-VTR



311 Matheson Boulevard East

Mississauga, Ontario

	SU	BSURFACE PROFILE				SAMPLE		C
Depth	Symbol	Description	Number	Soil Vapour Concentration (ppm)	Recovery (%)	Comments	Laboratory Analysis	Well Completior Details
ft m		Ground Surface						
		Topsoil, moist						
2	•••	SAND and GRAVEL, dry	1	0	100			
		Grey SILT, some clay, trace gravel						
5 1 6 1 2 7 1 2 7 1 1 2		weathered shale	2	0	50	PHC odour, DUP1	PHCs and BTEX	
0 9 10 11 12			3	720	20	High vapour reading		
13 4 14 1 15 1 16 1		sand seam	4	0	100			
17 - 5			5	0	100			
18 19 20 21 21 22 21 23 7 24 24 24 25								

Drill Method: Continuous SamplingScreeAuger Method: Solid Stem AugersWell CDrill / Auger Date: January 20, 2017WaterBoring Diameter (m): 0.08Date CAugering Diameter (m): 0.10CalcuDepth of Finished Borehole (m): 5.486Sheet

Screen Length (m): NA Well Casing: NA Water Level (mbg): NA Date of Measurement: NA Calculated mREL: NA Sheet: 1 of 1

Project No: 21170-001

Client: Nyx Capital Corp.

Location: 208 Emby Drive, Mississauga, Ontario

Driller: Profile

Drilling Rig: Power Probe 9700-VTR



311 Matheson Boulevard East

Mississauga, Ontario

	SU	BSURFACE PROFILE				SAMPLE		c
Depth	Symbol	Description	Number	Soil Vapour Concentration (ppm)	Recovery (%)	Comments	Laboratory Analysis	Well Completion Details
ft m 0 1 0 1 1 1 1 2 1 1 1 3 1 1		Ground Surface Topsoil SAND and GRAVEL brick debris Brown SILT, some clay, trace gravel,	1	0	40			
5 6 7 7 1 1 1 2		moist, mottled	2	0	100	PHCs odour	PHCs and BTEX	
9 10 11 12			3	0	100			
13 4 14 4 15 4		- grey, sand seam	4	0	100			
10 110 17 18 18 19 19 10 10 11 10 11 110 12 111 11 111<						Auger down		

Drill Method: Continuous Sampling	Screen Length (m): 3.05
Auger Method: Solid Stem Augers	Well Casing: Flushmount
Drill / Auger Date: January 20, 2017	Water Level (mbg): 2.815
Boring Diameter (m): 0.08	Date of Measurement: January 23, 2017
Augering Diameter (m): 0.10	Calculated mREL: NA
Depth of Finished Borehole (m): 9.14	Sheet: 1 of 1

LABORATORY CERTIFICATES OF ANALYSIS



CLIENT NAME: OHE CONSULTANTS 311 MATHESON BLVD. EAST MISSISSAUGA, ON L4Z1X8 (905) 890-9000

ATTENTION TO: Mike Grayhurst

PROJECT: 21170-001

AGAT WORK ORDER: 17T180549

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Jan 26, 2017

PAGES (INCLUDING COVER): 9

VERSION*: 1

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

<u>*NOTES</u>		

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories (V1)

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA) Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA) AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

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Results relate only to the items tested and to all the items tested All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request



AGAT WORK ORDER: 17T180549 PROJECT: 21170-001

CLIENT NAME: OHE CONSULTANTS

SAMPLING SITE:

ATTENTION TO: Mike Grayhurst

DATE REPORTED: 2017-01-26

SAMPLED BY:

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

DATE RECEIVED: 2017-01-23

	SA	MPLE DESCR	IPTION:	DUP1
		SAMPL	E TYPE:	Soil
		DATE SA	MPLED:	2017-01-20
Parameter	Unit	G/S	RDL	8143313
Benzene	ug/g	0.21	0.02	0.04
Toluene	ug/g	2.3	0.05	<0.05
Ethylbenzene	ug/g	2	0.05	0.21
m & p-Xylene	ug/g		0.05	0.15
o-Xylene	ug/g		0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	0.15
Moisture Content	%		0.1	12.2
Surrogate	Unit	Acceptable	Limits	
Toluene-d8	% Recovery	50-140)	121
4-Bromofluorobenzene	% Recovery	50-140)	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

8143313 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:

5835 COOPERS AVENUE

MISSISSAUGA, ONTARIO

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CANADA L4Z 1Y2

TEL (905)712-5100 FAX (905)712-5122



AGAT WORK ORDER: 17T180549 PROJECT: 21170-001

CLIENT NAME: OHE CONSULTANTS

SAMPLING SITE:

ATTENTION TO: Mike Grayhurst

SAMPLED BY:

O. Reg. 153(511) - BTEX (Water)

DATE RECEIVED: 2017-01-23

DATE RECEIVED: 2017-01-23						DATE REPORTED: 2017-01-26
	S	AMPLE DES	CRIPTION:	DUP5	Trip Blank	
		SAM	PLE TYPE:	Water	Water	
		DATES	SAMPLED:	2017-01-23	2017-01-23	
Parameter	Unit	G/S	RDL	8143321	8143324	
Benzene	µg/L	44	0.20	<0.20	<0.20	
Toluene	µg/L	18000	0.20	<0.20	<0.20	
Ethylbenzene	µg/L	2300	0.10	<0.10	<0.10	
m & p-Xylene	µg/L		0.20	<0.20	<0.20	
o-Xylene	µg/L		0.10	<0.10	<0.10	
Xylene Mixture	µg/L	4200	0.20	<0.20	<0.20	
Surrogate	Unit	Acceptab	le Limits			
Toluene-d8	% Recovery	50-1	140	111	111	
4-Bromofluorobenzene	% Recovery	50-1	140	103	89	

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Comments: Types of Property Uses - Coarse Textured Soils

8143321-8143324 Results relate only to the items tested.

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AGAT WORK ORDER: 17T180549 PROJECT: 21170-001 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.agatlabs.com

CLIENT NAME: OHE CONSULTANTS

SAMPLING SITE:

ATTENTION TO: Mike Grayhurst

SAMPLED BY:

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

DATE RECEIVED: 2017-01-23

		SAMPLE DES	CRIPTION:	BH101-4	BH102-4	BH103-2	BH104-2	
		SAM	PLE TYPE:	Soil	Soil	Soil	Soil	
		DATES	SAMPLED:	2017-01-20	2017-01-20	2017-01-20	2017-01-20	
Parameter	Unit	G/S	RDL	8143297	8143306	8143308	8143310	
Benzene	µg/g	0.21	0.02	<0.02	<0.02	0.05	<0.02	
Toluene	µg/g	2.3	0.08	<0.08	<0.08	<0.08	<0.08	
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05	0.36	<0.05	
Xylene Mixture	µg/g	3.1	0.05	<0.05	<0.05	0.21	<0.05	
F1 (C6 to C10)	µg/g	55	5	<5	<5	110	<5	
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	110	<5	
F2 (C10 to C16)	µg/g	98	10	<10	<10	180	160	
F3 (C16 to C34)	µg/g	300	50	<50	<50	110	87	
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50	<50	
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA	NA	
Moisture Content	%		0.1	9.3	8.6	13.7	11.6	
Surrogate	Unit	Acceptab	le Limits					
Terphenyl	%	60-1	40	60	71	62	73	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

8143297-8143310 Results are based on sample dry weight.

The C6-C10 fraction is calculated using Toluene response factor.

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 contributions.

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.

Certified By:

DATE REPORTED: 2017-01-26



AGAT WORK ORDER: 17T180549 PROJECT: 21170-001 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.agatlabs.com

CLIENT NAME: OHE CONSULTANTS

SAMPLING SITE:

ATTENTION TO: Mike Grayhurst

DATE REPORTED: 2017-01-26

SAMPLED BY:

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

DATE RECEIVED: 2017-01-23

		SAMPLE DESC	RIPTION:	BH102	BH104
		SAMF	LE TYPE:	Water	Water
		DATE S	AMPLED:	2017-01-23	2017-01-23
Parameter	Unit	G/S	RDL	8143316	8143317
Benzene	µg/L	44	0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20	<0.20
Ethylbenzene	µg/L	2300	0.10	<0.10	<0.10
Xylene Mixture	µg/L	4200	0.20	<0.20	<0.20
F1 (C6 to C10)	µg/L	750	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	Unit	Acceptabl	e Limits		
Terphenyl	%	60-1	40	76	74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils

8143316-8143317 The C6-C10 fraction is calculated using Toluene response factor.

The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.

Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 contributions.

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 153/04, results are considered valid without determining the PAH contribution if not requested by the client. NA = Not Applicable

Certified By:



Guideline Violation

AGAT WORK ORDER: 17T180549 PROJECT: 21170-001 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.agatlabs.com

CLIENT NAME: OHE CONSULTANTS

ATTENTION TO: Mike Grayhurst

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8143308	BH103-2	ON T3 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10)	µg/g	55	110
8143308	BH103-2	ON T3 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10) minus BTEX	µg/g	55	110
8143308	BH103-2	ON T3 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F2 (C10 to C16)	µg/g	98	180
8143310	BH104-2	ON T3 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F2 (C10 to C16)	µg/g	98	160



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Quality Assurance

CLIENT NAME: OHE CONSULTANTS

PROJECT: 21170-001

SAMPLING SITE:

AGAT WORK ORDER: 17T180549 ATTENTION TO: Mike Grayhurst SAMPLED BY:

Trace Organics Analysis

RPT Date: Jan 26, 2017			DUPLICATE			REFEREN	ICE MA	TERIAL	METHOD	BLAN	K SPIKE	MATRIX SPIKE			
PARAMETER	Batch	Dup #1	Dup #2	RPD	Method Blank	Measured	Acce Lir	eptable mits	Recoverv	Acce Lir	eptable mits	Recoverv	Acce Lii	ptable mits	
	Id					value	Lower	Upper		Lower	Upper		Lower	Upper	
O. Reg. 153(511) - PHCs F1 -	F4 (Soil)												,		
Benzene	8143156	< 0.02	< 0.02	NA	< 0.02	114%	60%	130%	114%	60%	130%	115%	60%	130%	
Toluene	8143156	< 0.08	< 0.08	NA	< 0.08	112%	60%	130%	111%	60%	130%	111%	60%	130%	
Ethylbenzene	8143156	< 0.05	< 0.05	NA	< 0.05	117%	60%	130%	113%	60%	130%	115%	60%	130%	
Xylene Mixture	8143156	< 0.05	< 0.05	NA	< 0.05	116%	60%	130%	105%	60%	130%	117%	60%	130%	
F1 (C6 to C10)	8143156	< 5	< 5	NA	< 5	79%	60%	130%	87%	85%	115%	80%	70%	130%	
F2 (C10 to C16)	8129214	< 10	< 10	NA	< 10	103%	60%	130%	91%	80%	120%	78%	70%	130%	
F3 (C16 to C34)	8129214	< 50	< 50	NA	< 50	98%	60%	130%	89%	80%	120%	92%	70%	130%	
F4 (C34 to C50)	8129214	< 50	< 50	NA	< 50	94%	60%	130%	96%	80%	120%	95%	70%	130%	
O. Reg. 153(511) - BTEX (Soil)														
Benzene	8143313 8143313	0.04	0.05	NA	< 0.02	128%	50%	140%	94%	60%	130%	90%	50%	140%	
Toluene	8143313 8143313	< 0.05	< 0.05	NA	< 0.05	124%	50%	140%	99%	60%	130%	111%	50%	140%	
Ethylbenzene	8143313 8143313	0.21	0.21	NA	< 0.05	111%	50%	140%	90%	60%	130%	98%	50%	140%	
m & p-Xylene	8143313 8143313	0.15	0.15	NA	< 0.05	105%	50%	140%	82%	60%	130%	91%	50%	140%	
o-Xylene	8143313 8143313	< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	89%	60%	130%	99%	50%	140%	
O. Reg. 153(511) - PHCs F1 -	F4 (Water)														
Benzene	8141430	< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	103%	60%	130%	108%	50%	140%	
Toluene	8141430	< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	100%	60%	130%	103%	50%	140%	
Ethylbenzene	8141430	< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	91%	60%	130%	100%	50%	140%	
Xylene Mixture	8141430	< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	83%	60%	130%	90%	50%	140%	
F1 (C6 to C10)	8141430	< 25	< 25	NA	< 25	77%	60%	140%	77%	60%	140%	76%	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).

O. Reg. 153(511) - PHCs	F1 - F4 (Water)													
F2 (C10 to C16)	8142390	< 100	< 100	NA	< 100	106%	60%	140%	64%	60%	140%	60%	60%	140%
F3 (C16 to C34)	8142390	< 100	< 100	NA	< 100	115%	60%	140%	79%	60%	140%	70%	60%	140%
F4 (C34 to C50)	8142390	< 100	< 100	NA	< 100	90%	60%	140%	95%	60%	140%	87%	60%	140%
O. Reg. 153(511) - BTEX	(Water)													
Benzene	8138387	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	90%	60%	130%	91%	50%	140%
Toluene	8138387	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	90%	60%	130%	91%	50%	140%
Ethylbenzene	8138387	< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	90%	60%	130%	81%	50%	140%
m & p-Xylene	8138387	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	100%	60%	130%	79%	50%	140%
o-Xylene	8138387	< 0.10	< 0.10	NA	< 0.10	122%	50%	140%	110%	60%	130%	92%	50%	140%

Certified By:

AGAT QUALITY ASSURANCE REPORT (V1)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

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Method Summary

CLIENT NAME: OHE CONSULTANTS

PROJECT: 21170-001

SAMPLING SITE:

AGAT WORK ORDER: 17T180549 **ATTENTION TO: Mike Grayhurst**

SAMPLING SITE:		SAMPLED BY:								
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE							
Trace Organics Analysis	I	L	•							
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS							
Moisture Content		MOE E3139	BALANCE							
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS							
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS							
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS							
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS							
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS							
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID							
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID							
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID							
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID							
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID							
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE							
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE							
Terphenyl	VOL-91-5009		GC/FID							
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID							
F2 (C10 to C16)	VOL-91-5010	MOE PHC-E3421	GC/FID							
F3 (C16 to C34)	VOL-91-5010	MOE PHC-E3421	GC/FID							
F4 (C34 to C50)	VOL-91-5010	MOE PHC-E3421	GC/FID							
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC-E3421	BALANCE							
Terphenyl	VOL-91-5010		GC/FID							

Chain of Custody Record	ator	5835 Coopers Avenue Mississauga, Ontario L4Z 1Y2 Ph: 905.712 5100 Fax: 905.712.5122 webearth.agatlabs.com									Laboratory Use Only Work Order #: 177180549 Cooler Quantity: 1817; Arrival Temperatures: 1.01.31M														
Report Information: Company: OHE Consultants Contact: Mike Grayhurst Address: 311 Matheson Blud E, Mixissauga Phone: $925-890-9200$ Fax: $925-890-9205$ Phone: $925-890-9200$ Fax: $925-890-9205$ Reports to be sent to: OHE Results 2. Email: OHE Results Project Information: Project: $21170-001$ Site Location: $T0$					Regulatory Requirements: No Regulatory Requirement (Please check all applicable boxes) Image: Comparison of the second									It Custody Seal Intact: Yes No N/A Notes:											
					Regulation 153/04 Sewer Use Regulation 558 Table Indicate One Sanitary Ind/Com Sanitary CCME Res/Park Storm Prov. Water Quality Agriculture National Construction Other Coarse Indicate One Indicate One Fine Indicate One Indicate One						Turnaround Time (TAT) Required: Regular TAT 5 to 7 Business Days Rush TAT (Rush Surcharges Apply) Image: State														
					Is this submission for a Report Record of Site Condition? Certific ☑ Yes □ No ☑ Yes					leport Guideline on ertificate of Analysis Ø Yes 🔲 No					Please provide prior notification for rush TAT *TAT is exclusive of weekends and statutory holidays For 'Same Day' analysis, please contact your AGAT CPM										
AGAT Quote #:					Sample Matrix LegendBBiotaGWGround WaterOOilPPaintSSoilSDSedimentSWSurface Water			stals 🔲 153 Metals (excl. Hydrides) de Metals	DBHWS DCI- DCN- DEC DFOC DHg 154R	tals Scan	tion/Custom Metals	S: OVOC SUBTEX OTHM	Fractions 1 to 4			□ Total □ Aroclors	ochlorine Pesticides	IM&i □vocs □ABNs □B(a)P □Pc Use							
Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Metals	D All Me	ORPs: Cr ⁶⁺	Full Me	Regula Nutrier	Volatile	CCME	ABNs	PAHs	PCBs: [Organo	TCLP:							
BH 101-4 BH 102-4 BH 103-2 BH 104-2 DUP 1 BH 102 BH 102 BH 104 DUP5 Trip Blank	Jan 20, 20 i	pim pim v a.m	2 4 4 3 3	S GW	Attempted to coul							X X X X X X X X X X X X X X X X X X X		JR											
Samples Relinquished By (Print Name and Sign): <u>Jie Ren</u> Samples Relinquished By (Print Name and Sign): Samples Relinquished By (Print Name and Sign):	r.Ren	Date Jan 2 Date Date	-5, 2017 Tim Tim Tim	ne 10	Samples Received By (Print Name and Sign): Samples Received By (Print Name and Sign): Samples Received By (Print Name and Sign):	aly	.	Ņ	h.		Date Date Date	.23	בתי	Time 1 Time Time	2:	> P.	/ 1 / 1 N	Pa •: T	ge	L of .	 70				
Dovimment ID: DIV-78-1511-013									Pink	Сору -	Client I	Yellov	v Cop	y - AG	ίΑΤ	l Whi	ite Co	ppy- AGAT	Dete	a Issilied, Si Paį	1 U entember 20, ge 9 of 9	2016			