Phase Two Environmental Site Assessment

Northwest Corner of Quaker Road and First Avenue
Welland and Thorold, Ontario

Prepared For:

Primont (Thorold/Welland) Inc
9130 Leslie Street, Suite 301
Richmond Hill, Ontario
L4B 0B9

DS Project No: 21-339-302

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DS CONSULTANTS LTD.
6221 Highway 7, Unit 16
Vaughan, Ontario, L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Executive Summary

DS Consultants Ltd. (DS) was retained by Primont (Thorold/Welland) Inc. to complete a Phase Two Environmental Site Assessment (ESA) for three parcels of land with the legal description of PT TWP LT 228 THOROLD BEING PT 2 ON 59R7326 (Parcel A), PT TWP LT 228 THOROLD BEING PT 1 ON 59R7326 (Parcel B) and 436 Quaker Road (Parcel C) located at the Norwest corner of the intersection of Quaker Road and First Avenue, within, in the cities of Welland and Thorold, Ontario, herein referred to as the, herein referred to as the "Phase Two Property" or "Site". It is DS's understanding that this Phase Two ESA has been requested for due diligence purposes as part of the proposed redevelopment of the Phase Two Property for residential purposes.

The Phase Two Property is a rectangular shaped 60.8-hectare (150.23 acres) parcel of land situated within a rural neighbourhood Parcel A and the southern half of Parcel C is within the City of Welland and Parcel B and the northern half of Parcel C is within the City of Thorold. The Phase Two Property is bound by Quaker Road to the south, First Avenue to the east, Merritt Road to the north, and an agricultural parcel to the west.

The Phase Two ESA was completed to satisfy the intent of the requirements, methodology and practices for a Phase Two ESA as described in Ontario Regulation 153/04 (as amended). The objective of this Phase Two ESA is to confirm whether contaminants are present, and at what concentration are they present on the Phase Two Property, as related to the Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA.

The Phase One ESA completed in 2022 indicated that the Phase Two Property was first developed for residential purposes circa the mid-1970s. By the mid-2000s a Bell communication tower was developed on Parcel A and has been operating on-Site up to present-day. The Site is currently used for residential, agricultural and commercial purposes. A total of ten (10) Potentially Contaminating Activities (PCAs) were identified in the Phase One ESA, three (3) of which were considered to be contributing to three (3) APECs on the Phase Two Property. A summary of the APECs, associated PCAs, and contaminants of potential concern (COPCs) identified is presented in the table below:

Table E-1: Summary of APECs

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on site or off site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC-1	Southwest portion of Parcel C	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large scale application	On Site PCA-1	OCPs, metals, As, Sb, Se, CN-	Soil
APEC-2	Southeast portion of Parcel A	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large-scale application	On Site PCA-2	OCPs, metals, As, Sb, Se, CN-	Soil
APEC-3	Southeast portion of Parcel A	#30 – Importation of Fill Material of Unknown Quality	On Site PCA-6	PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs	Soil

Based on the findings of the Phase One ESA it was concluded that a Phase Two ESA is warranted in order to assess the soil and groundwater conditions on the Phase Two Property.

The Phase Two ESA involved the advancement of twelve (12) boreholes, which were completed between March 4 and March 21, 2022. The boreholes were advanced to a maximum depth of 3.05 metres below ground surface (mbgs) under the supervision of DS personnel. Groundwater monitoring wells were installed upon completion of three (3) boreholes advanced for the purpose of the preliminary geotechnical investigation completed concurrently to this Phase Two ESA investigation. The monitoring wells were installed to facilitate the assessment of groundwater flow direction and to monitor the groundwater level on Site. The borehole locations were determined based on the findings of the Phase One ESA. All APECs were investigated with boreholes in accordance with the requirements of O.Reg. 153/04 (as amended). Soil samples were collected and submitted for analysis of all PCOCs, including metals & ORPs, PHCs, VOCs, PAHs and OCPs.

Soil samples were collected and submitted for analysis as follow:

- Ten (10) soil samples for analysis of metals and hydride forming metals, and two (2) samples for analysis of metals and Other Regulated Parameters (OCPs)
- One (1) soil sample for analysis of Petroleum Hydrocarbons (PHCs) including Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- One (1) soil sample for analysis for Volatile Organic Compounds (VOCs)
- Two (2) soil sample (including 1 QA/QC duplicate) for analysis of Polycyclic Aromatic Compounds (PAHs)
- Eleven (11) soil samples for analysis of Organochlorine Pesticides (OCPs).

The Phase Two Property contains two (2) Areas of Natural Significance associated with provincially significant wetlands in the northern and southeastern portions of the Phase Two Property. In accordance with Section 41 of O.Reg 153/04, the MECP Table 1 Site Condition Standards (SCS): Full Depth Background Site Condition Standards for all property uses other than agricultural (Table 1 SCS) are applicable to the portions of the Site which are located within 30 m of the Areas of Natural Significance.

The MECP Table 2 SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Use with coarse-textured soils (Table 2 SCS) were considered most applicable for the remaining portions of the Site that are located at more than 30 m from the Areas of Natural Significance.

Based on the findings of the Phase Two ESA, DS presents the following findings:

- A surficial layer of topsoil approximately 51 to 350 mm in thickness was encountered and was underlain by reworked/disturbed native consisting of of silty clay (till), clayey silt and sandy silt, extending to an approximate depth of 1 mbgs. Undisturbed clayey silt and silty clay deposits were encountered to an approximate depth of 13.7 mbgs. Silt (till) deposits were encountered below the silty clay to clayey silt deposits at depths raging from 7.6 to 18.3 mbgs. Underlying the silt (till) deposits, a lower clayey silt (till) to silty clay unit was encountered at depts ranging from 19.1 to 27.4 mbgs. A second and lower silt (till) deposit was encountered at depths ranging from 13.7 to 33.5 mbgs. A third lower unit of silty clay (till) to clayey silt (till) was encountered at a depth of approximately 29 mbgs, extending to the explored depth of the geotechnical boreholes. A deposit of silty sand was encountered in borehole BH22-1 at depths ranging from 2.3 to 15.2 mbgs. A lower unit of sandy silt to silty

sand was encountered in borehole BH22-3 at depths raging from 18.3 to 24.4 mbgs. Bedrock was not encountered within any of the boreholes.

- The depth to groundwater was measured in monitoring wells installed on Site as part of the geotechnical investigation completed concurrently with this Phase Two ESA investigation, and in monitoring wells already present on Site. The monitoring wells were screened to intercept the groundwater water table. The groundwater levels were found to range between 0.12 to 1.57 mbgs, with corresponding elevations of 181.92 to 183.78 metres above sea level (masl). Based on the groundwater elevations recorded, the groundwater flow direction is interpreted to be southeasterly, towards Welland River on the southern portion of the Site, and northwesterly at the centre portion of the Site, towards a tributary of Welland Rivers crossing the northern portion of the Site. It is possible that the groundwater levels may vary seasonally. The groundwater levels may also be impacted by other factors such as historical infilling activities, subsurface utility trenches, and similar subsurface anomalies. The groundwater flow direction can only be confirmed through long term monitoring.
- Soil samples were collected from the boreholes advanced on the Phase Two Property and submitted for analysis of metals and ORPs, OCPs, PHCs, PAHs and VOCs. The results of the chemical analyses conducted, indicated that all samples analyzed met the applicable Site Condition Standards.

Based on a review of the findings of this Phase Two ESA, DS presents the following conclusions and recommendations:

- All of the soil samples analysed met the applicable MECP Table 1 and 2 SCS for the relevant contaminants of potential concern. No further environmental site assessment is recommended at this time. A Record of Site Condition may be filed on the basis of this Phase Two ESA. Due to the presence of the environmentally sensitive portions of the Site, it may be beneficial to submit separate RSCs for the environmentally sensitive portions of the Site.
- All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

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1.0 Introduction

DS Consultants Ltd. (DS) was retained by Primont (Thorold/Welland) Inc to complete a Phase Two Environmental Site Assessment (ESA) for three parcels of land with the legal description of PT TWP LT 228 THOROLD BEING PT 2 ON 59R7326 (Parcel A), PT TWP LT 228 THOROLD BEING PT 1 ON 59R7326 (Parcel B) and 436 Quaker Road (Parcel C) located at the Norwest corner of the intersection of Quaker Road and First Avenue, within, in the cities of Welland and Thorold, Ontario, herein referred to as the, herein referred to as the "Phase Two Property" or "Site". It is DS's understanding that this Phase Two ESA has been requested for due diligence purposes as part of the proposed redevelopment of the Phase Two Property for residential purposes.

It is the opinion of DS that the intended future residential property use constitutes a more sensitive property use than the current commercial use, as defined under O.Reg. 153/04 (as amended). Given that the proposed change in property use is to a more sensitive property use, the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) will be mandated under O.Reg. 153/04 (as amended).

The Phase Two ESA was completed to satisfy the intent of the requirements, methodology and practices for a Phase One ESA as described in Ontario Regulation 153/04 (as amended). The objective of this Phase Two ESA is to confirm whether contaminants are present, and at what concentration are they present on the Phase Two Property, as related to the Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA.

1.1 Site Description

The Phase Two Property is a rectangular shaped 60.8-hectare (150.23 acres) parcel of land situated within a rural neighbourhood. Parcel A and the southern half of Parcel C is within the City of Welland and Parcel B and the northern half of Parcel C is within the City of Thorold. The Phase Two Property is bound by Quaker Road to the south, First Avenue to the east, Merritt Road to the north, and an agricultural parcel to the west. A Site Location Plan depicting the general location of the Phase One Property is provided in Figure 1.

For the purposes of this report, Quaker Road is assumed to be aligned in an east-west orientation, and First Avenue in a north-south orientation.

The Phase Two Property currently includes a two-storey house (Site Building A) with a one (1) level of basement located on the southwestern portion of the Site at Parcel C. Site Building A is made of concrete block and siding, with basement concrete floors. Parcel C also contains

a silo, barn, two (2) sheds and a swimming pool surrounding the residence. A Bell communications tower is present approximately 95 m northeast from Site Building A. The land surrounding Site Building A and other structures are use for agricultural purposes. There are wetlands situated in the northeast and southeast corners of the Phase One Property. The portions of Parcels A and B surrounding the wetlands are used for agricultural purposes.

Two (2) former building footprints were observed within the current wetland on Parcel A. Based on the aerial photographs reviewed (Section 3.3.1) these structures appear to have been demolished in the 1960s and are inferred to have been houses. A Site Plan depicting the orientation of the current and former buildings on-Site is provided in Figure 2. A Plan of Survey for the Phase One Property was not provided.

Additional details regarding the Phase Two Property are provided in the table below.

Table 1-1: Phase Two Property Information

Criteria	Information	Source
Legal Description	**Parcel A**: PT TWP LT 228 THOROLD BEING PT 2 ON 59R7326, Welland **Parcel B:** PT TWP LT 228 THOROLD BEING PT 1 ON 59R7326, Welland **Parcel C:** PT TWP LT 174 THOROLD AS IN BB58943, Welland	Parcel Register
Property Identification Number (PIN)	**Parcel A**: 64073-0196 **Parcel B**: 64073-0195 **Parcel C**: 64073-0030	Parcel Register
Current Site Occupants	Robert Borkovsky	Client
Site Area	60.8 hectares (150.23 acres)	Land Registry Office

1.2 Property Ownership

The ownership details for the Phase Two Property are provided in the table below.

Table 1-2: Phase Two Property Ownership

Property Owner	Address	Contact
Primont (Thorold/Welland) Inc.	9130 Leslie Street, Suite 301 Richmond Hill, ON, L4B 0B9	Ian MacPherson Phone: 416-797-8967 Email: ian@primont.com

1.3 Current and Proposed Future Use

The Phase Two Property is currently occupied by Mr. Robert Borkovsky and a Bell communication towel at Parcel A on the southern portion of the Site. The remaining portions of the Site, with the exception of the wooded areas are used as farmland. The Phase Two Property is considered to be used for commercial purposes due to the cellular communications tower under O.Reg. 153/04 (as amended). It is DS's understanding that the Client intends to redevelop the Site for residential uses.

1.4 Applicable Site Condition Standards

The applicable Site Condition Standards (SCS) for the Phase Two Property are considered by the Qualified Person (QP) to be both the MECP Table 1 and MECP Table 2 SCS, as follows:

- Table 1 SCS: Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Use with coarse-textured soils as contained in the April 15, 2011 Ontario Ministry of Environment, Conservation and Parks (MECP) document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", herein referred to as the "Table 1 SCS".
- Table 2 SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Use with coarse-textured soils as contained in the April 15, 2011 Ontario Ministry of Environment, Conservation and Parks (MECP) document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", herein referred to as the "Table 2 SCS".

The selection of the Table 1 and 2 SCS is considered appropriate based on the following rationale:

- Portions of the Phase Two Property are within Areas of Natural Significance:
  - The City of Welland Official Plan identified the southeastern portion of the Phase Two Property within an *"Environmental Protection Area"* and "*Environmental Conservation Area"*, the Ministry of Natural Resources and Forestry (MNRF) identified the area as "*Provincially Significant Wetland*", and
  - The City of Thorold Official Plan and the MNRF identified the northern portions of the Phase Two Property as *"Provincial Significant Wetland"*.

In accordance with Section 41 of O.Reg 153/04, the MECP Table 1 Site Condition Standards (SCS) are applicable to the portions of the Site which are located within Areas of Natural Significance.

The MECP Table 2 RPI Standards with coarse textures soils were considered most applicable for the remaining portions of the Site that are located at more than 30 m from the Areas of Natural Significance based on the following rationale:

- The Phase Two Property rely on groundwater as a potable water source;
- The proposed future use of the Phase Two Property will be residential;
- The pH of the soils analyzed during this Phase Two ESA are within the accepted range specified under O.Reg. 153/04 (as amended); and
- Bedrock was not encountered within 2 metres of the ground surface.

A map depicting the SCS applicable to the Phase Two Property are depicted in Figure 7.

2.0 Background Information

2.1 Physical Setting

2.1.1 Water Bodies and Areas of Natural Significance

The nearest body of water are two (2) tributaries of Welland River traversing from west to east through the northern and southern halves of the Phase Two Property.

The Natural Heritage Areas database published by the Ministry of Natural Resources and Forestry (MNRF) was reviewed in order to identify the presence/absence of areas of natural significance including provincial parks, conservation reserves, areas of natural and scientific interest, wetlands, environmentally significant areas, habitats of threatened or endangered species, and wilderness areas. The regional and municipal Official Plans were also reviewed as part of this assessment.

A reviewed on the MNRF databases indicated the Northern Bobwhite and Eastern Flowering Dogwood as endangered species, and the White Wood Aster as a threatened species within one kilometer of the Phase Two Property. Additionally, it was identified that the southeastern and northeast portions of the Site are within a Provincial Significant Wetland.

A review of the City of Welland -Official Plan, Schedule C indicated the southeastern portion of the Site as an *"Environmental Protection Area"* and "*Environmental Conservation Area"*, and the City of Thorold Official Plan, Schedule B, indicated the northern portions of the Site as a *"Provincial Significant Wetland"* (referred to Figure 2). More specifically, the Provincially Significant Wetlands are located:

- On the southern portion of Parcel A,
- On the northern half of Parcel B, and
- On the northern portion of Parcel C

The Northern Bobwhite is a quail that habitats grasslands, brushy fencerows and abandoned agricultural fields. The Eastern Flowering Dogwood is a small tree that reaches 3-10 metres in height that inhabits floodplains, slopes, bluffs and ravines, and are found under deciduous or mixed forests. The White Wood Aster is a perennial plant that usually grows 30 to 90 centimetres tall that prefers dry deciduous forests and in full shade. The Site is a parcel of land used in its majority for agricultural purposes; however, it does present brushy fencerows, floodplain and deciduous and/or mixed forests within the northern and southeastern portions of the Site where the provincially significant wetlands are located; as such, the northern and southeastern portions of the Phase Two Property may provide a viable habitat for the Northern Bobwhite and the Eastern Flowering Dogwood.

As defined in Section 1 (1) of O.Reg. 153/04, an area of natural significance is:

- "*A wetland identified by the Ministry of Natural Resources as having provincial significance";*
- "*An area identified by the Ministry of Natural Resources as significant habitat of a threatened or endangered species* ";
- "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*"; or
- "*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".*

Based on the above definitions, portions of the Site (southern portion of Parcel A, northern half of Parcel B, and northern portion of Parcel C) are located within an area of natural significance.

If required, an environmental specialist could be retained to undertake a site-specific ecological assessment; however, at this time further assessment is not warranted.

2.1.2 Topography and Surface Water Draining Features

The Phase Two Property is located in a rural setting, at an elevation of 225 metres above sea level (masl). The topography of the Phase Two Property is generally flat, but slightly slopes towards the east. The neighbouring property are generally at a similar elevations), and the

topography in the vicinity of the Phase Two Property generally slopes to the east. There are no drainage features (e.g. ditches, swales, etc.) present on-Site, and no paved areas are present on the Site. Surface water flow associated with precipitation events is anticipated to infiltrate the ground surface.

2.2 Past Investigations

2.2.1 Previous Report Summary

The following environmental and geotechnical reports were provided for DS to review:

- *Preliminary Geotechnical Investigation, Quaker Road and First Avenue,* December 31, 2021, prepared for Primont Homes, prepared by DS Consultants Ltd (2021 DS Preliminary Geotechnical Investigation).
- *"Phase One ESA, Block 7, PT TWP LT 228 THOROLD BEING PT 2 ON 59R7326, PT TWP LT 228 THOROLD BEING PT 1 ON 59R7326, and 436 Quaker Road, (Northwest Corner of Quaker Road and First Avenue), Welland and Thorold, Ontario",* prepared for Primont (Thorold/Welland) Homes, prepared by DS Consultants Limited, dated April 4, 2022 (2022 DS Phase One ESA).

2021 DS Preliminary Geotechnical Investigation

This geotechnical investigation was undertaken to obtain information regarding the subsurface conditions on the property and make recommendations regarding the geotechnical design of grading, underground utilities, roads and parking, and comment on the foundation conditions for housing construction. Sixteen (16) boreholes (BH21-1 to BH21-16) were drilled between October 27 and 29, 2021 to depths varying between 6.7 m to 7.3 mbgs to assess the subsurface conditions. A total of ten (10) boreholes were completed as monitoring wells and screened at depths ranging from 3.1 to 6.1 mbgs. The subsurface conditions in the boreholes are summarized below:

Topsoil

A surficial topsoil layer was encountered at the borehole locations. The measured topsoil thickness at the borehole locations ranged from 300 mm to 450mm. Localized thick topsoil deposits and soils rich in organic content may be encountered, especially in depressed areas and/or near water courses. Topsoil quantities should not be calculated from the borehole information, as large variations in depth may exist between boreholes.

Disturbed/Reworked Soils

Underlying the topsoil, a layer of silty sand or clayey silt soils, disturbed by farming activities, were encountered and extended to 0.8 m to 1 m below grade. The disturbed soils contained traces of topsoil or organics and were in loose or soft to firm state.

Silty Clay

Below the topsoil, glaciolacustrine deposits of silty clay were encountered in most of the boreholes. The silty clay contained fine sand seams and silt seams/layers.

Silt, Sandy Silt

Silt to sandy silt deposits were encountered in some boreholes at various depths (BH21-1, BH21-4 to BH21-8, and BH21-10). The silt to sandy silt contained trace clay and trace gravel.

2022 DS Phase One ESA

The Phase One ESA was conducted for due diligence purposes, as part of the proposed redevelopment of the Site for residential purposes. The Phase One Property has been historically used for agricultural and residential purposes. The Site used to contain two (2) residential dwellings, Site Building A on Parcel C and Former Building B on Parcel A circa the mid-1970s. A third structure was developed circa the early-1930s (Former Building C) on Parcel A. Former Building B and C were demolished circa the late-1960s, and Parcel A become vacant land until present-day. By the mid-2000s a Bell communication tower (commercial property use) was constructed at Parcel A and it has been operating on Site until present-day. Currently, the Site is used for agricultural, commercial, and residential purposes.

A total of ten (10) PCAs were identified within the Phase One Property and Phase One Study Area, three (3) of which are contributing to six (6) APECs:

- The following issues of potential environmental concern (PCAs)were identified on the Phase One Property:
    - Based on the 1876 Lincoln and Welland County Atlas and aerial photograph from 1934, two (2) orchards operated on Site towards the south portion of the Phase One Property,
    - Based on the aerial photographs, site reconnaissance and interview, two structures (Former Building B, and Former Site Building C) on the southeast portion of the Site (Parcel A) were demolished circa 1968. It is inferred that fill material may have been used to infill the area where the structures were located.

- The neighbouring properties within the Phase One Study Area appear to have been used for residential and agricultural purposes since prior to 1876.

It was concluded that A Phase Two ESA was required in order to meet the requirements of O.Reg.153/04 (as amended).

2.2.2 Use of Previous Analytical Results

Not applicable. No previous analytical results were available for DS to review.

3.0 Scope of the Investigation

The scope of the Phase Two ESA was designed to investigate the portions of the Site determined in the Phase One ESA to be Areas of Potential Environmental Concern. This Phase Two ESA was conducted in general accordance with O.Reg. 153/04 (as amended). The scope of the investigation including the subsurface investigation, sampling, and laboratory analysis was based on the findings of the Phase One ESA and was limited to the portions of the site which were accessible.

3.1 Overview of Site Investigation

The following tasks were completed as part of the Phase Two ESA:

- Preparation of a Health and Safety Plan to ensure that all work was executed safely;
- Clearance of public private underground utility services prior to commencement of subsurface investigative operations;
- Preparation of a Sampling and Analysis Plan (SAP);
- Retained a MECP licenced driller to advance a total of twelve (12) boreholes on the Phase Two Property, to depths ranging between 1.5 to 3 mbgs. The soil lithology was logged during drilling, and representative soil samples were collected at regular intervals. The soil samples were screened for organic vapours using a RKI Eagle 2 MultiGas Detector and examined for visual and olfactory indications of soil impacts.
- Submitted “worst case” soil samples collected from the boreholes for laboratory analysis of relevant contaminants of potential concern (COPCs) as identified in the Phase One ESA;
- Conducted groundwater level measurements in monitoring wells already present on Site in order to determine the groundwater elevation, and to establish the local groundwater flow direction;
- Surveyed all boreholes to a geodetic benchmark;
- Compared all soil analytical data to the applicable MECP SCS; and

- Prepared a Phase Two ESA Report in general accordance with O.Reg. 153/04 (as amended).

3.2 Media Investigated

3.2.1 Rationale for Inclusion or Exclusion of Media

Table 3-1: Rationale of Sampling Media

Media	Included or Excluded	Rationale
Soil	Included	Soil was identified as a media of potential impact in the Phase One ESA, based on the historical operations conducted on-Site.
Groundwater	Excluded	Groundwater was not identified as a media of potential impact in the Phase One ESA.
Sediment	Excluded	Sediment is not present on the Phase Two Property.
Surface Water	Excluded	Surface water is not present on the Phase Two Property.

3.2.2 Overview of Field Investigation of Media

Table 3-2: Field Investigation of Media

Media	Methodology of Investigation
Soil	A total of twelve (12) boreholes were advanced on the Phase Two Property, to a maximum depth of 3.0 mbgs. Soil samples were collected and submitted for analysis of all relevant PCOCs.

3.3 Phase One Conceptual Site Model

A Conceptual Site Model was developed for the Phase One Property, located at the Northwest Corner of Quaker Road and First Avenue, Welland and Thorold, Ontario. The Phase One Conceptual Site Model is presented in Figures 3, 4, and 5 and visually depict the following:

- Any existing buildings and structures
- Water bodies located in whole, or in part, on the Phase One Study Area
- Areas of natural significance located in whole, or in part, on the Phase One Study Area
- Water wells at the Phase One Property or within the Phase One Study Area
- Roads, including names, within the Phase One Study Area
- Uses of properties adjacent to the Phase One Property
- Areas where any PCAs have occurred, including location of any tanks
- Areas of Potential Environmental Concern

3.3.1 Potentially Contaminating Activity Affecting the Phase One Property

All PCAs identified within the Phase One Study Area are presented on Figure 4. The PCAs which are considered to contribute to APECs on, in or under the Phase One Property are summarized in the table below:

Table 3-3: Summary of PCAs Contributing to APECs

PCA Item.	PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04)	Description	Rationale
PCA-1	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large scale application	Based on the 1876 Lincoln and Welland County Atlas, an orchard operated on the southwest portion the Phase One Property.	PCA is on the Phase One Property
PCA-2	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large scale application	Based on the 1876 Lincoln and Welland County Atlas, an orchard operated on the southern portion southwest portion the Phase One Property at Parcel A.	PCA is on the Phase One Property
PCA-6	#30 – Importation of Fill Material of Unknown Quality	Based on the aerial photographs and interview, two structures (Former Building B, and Former Site Building C) on the southeast portion of the Site (Parcel A) were demolished circa 1968. It is inferred that fill material may have been used to infill the area where the structures were located.	PCA is on the Phase One Property

N/S - not specified in Table 2, Schedule D, of O.Reg. 153/04

3.3.2 Contaminants of Potential Concern

The following contaminants of potential concern were identified for the Site: PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs, and OCPs.

3.3.3 Underground Utilities and Contaminant Distribution and Transport

Underground utilities can affect contaminant distribution and transport. Trenches excavated to install utility services, and the associated granular backfill may provide preferential pathways for horizontal contaminant migration in the shallow subsurface.

3.3.4 Geological and Hydrogeological Information

The topography of the Phase One Property is generally flat, with a surface elevation of 225 masl. The topography within the Phase One Study Area generally slopes to the east. The nearest body of water are two (2) tributaries of Welland River traversing from west to east through the northern and southern halves of the Phase One Property. Based on DS's Preliminary Geotechnical investigation completed in January 2022, the depth to groundwater on the Site is between 0.25 to 4.43 mbgs. The shallow groundwater flow direction within the Phase One Study Area is inferred to be easterly towards Welland River.

The Site is situated within a "*Haldimand Clay Plain*" physiographic region. The surficial geology within the Phase One Study area is described as "*fine-textured glaciocustrine deposits of silt and clay, minor sand and gravel*", and the bedrock is described as "*sandstone, shale, dolostone and siltstone of the Guelph Formation*". Based on a review of well records, the bedrock in the Phase One Study Area is anticipated to be encountered at an approximate depth range of 30 to 62 mbgs.

3.3.5 Uncertainty and Absence of Information

DS has relied upon information obtained from federal, provincial, municipal, and private databases, in addition to records and summaries provided by EcoLog ERIS. All information obtained was reviewed and assessed for consistency, however the conclusions drawn by DS are subject to the nature and accuracy of the records reviewed.

All reasonable inquiries were made to obtain reasonably accessible information, as mandated by O.Reg.153/04 (as amended). All responses to database requests were received prior to completion of this report, with the exception of the MECP FOI request. If the MECP FOI request produces information which may alter the conclusions of this report, an addendum will be provided to the Client. This report reflects the best judgement of DS based on the information available at the time of the investigation.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property, as a result of potentially contaminating activities.

The QP has determined that the uncertainty does not affect the validity of the Phase One ESA Conceptual Site Model or the conclusions of this report.

3.4 Deviations from Sampling and Analysis Plan

The Phase Two ESA was completed in accordance with the SAP.

3.5 Impediments

DS was granted complete access to the Phase Two Property throughout the course of the investigation. No impediments were encountered.

4.0 Investigation Method

4.1 General

The Phase Two ESA followed the methodology outlined in the following documents:

- Ontario Ministry of the Environment "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" (December 1996);
- Ontario Ministry of the Environment "Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04" (June 2011);
- Ontario Ministry of the Environment "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" (July 2011) (Analytical Protocol);

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures.

4.2 Drilling and Excavating

A site visit was conducted prior to drilling in order to identify the borehole locations based on the APECs identified in the Phase One ESA. The selected borehole locations are presented on Figure 5. The borehole locations were cleared of underground public and private utility services prior to commencement of drilling. A summary of the drilling activities is provided in the table below.

Table 4-1: Summary of Drilling Activities

Parameter	Details	
Drilling Contractor	ACE Environmental Drilling Ltd.	Landshark Drilling Inc.
Drilling Dates	March 4th, 2022	March 21st, 2022
Drilling Equipment Used	Geoprobe 7822 DT	Percussion Dual Tube Sampler (PDTS) with MT85 Bobcat
Measures taken to minimize the potential for cross contamination	◆ Soil samples were collected using a macro-core sampling system. A new, disposable PVC sample liner was used for each sample interval; ◆ Soil samples were extracted from the interior of the sampler rather than from areas in contact with the sampler sidewalls; ◆ Use of dedicated and disposable nitrile gloves for the handling of soil samples. A new set of gloves was used for each sample.	
Sample collection frequency	Samples were recovered continuously from a 5 ft macro liner sampling system.	

4.3 Soil Sampling

Soil samples were collected using a 5-ft macro-core liner. Discrete soil samples were collected from the dedicated sample liners by DS personnel using dedicated nitrile gloves.

A portion of each sample was placed in a resealable plastic bag for field screening, and the remaining portion was placed into laboratory supplied glass sampling jars. Samples intended for VOC and the F1 fraction of petroleum hydrocarbons analysis were collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for

preservation purposes and sealed using Teflon lined septa lids. All sample jars were stored in dedicated coolers with ice for storage, pending transport to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

The subsurface soil conditions were logged by DS personnel at the time of drilling, and recorded on field borehole logs. The borehole logs are presented under Appendix B. Additional detail regarding the lithology encountered in the boreholes is presented under Section 5.1.

4.4 Field Screening Measurements

All retrieved soil samples were screened in the field for visual and olfactory observations. No obvious visual or olfactory evidence of potential contamination were noted. No aesthetic impacts (e.g. cinders, slag, hydrocarbon odours) were encountered during this investigation. The soil sample headspace vapour concentrations for all soil samples recovered during the investigation were screened using portable organic vapour testing equipment in accordance with the procedure outlined in the MECP's '*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario'.*

The soil samples were inspected and examined to assess soil type, ground water conditions, and possible chemical contamination by visual and olfactory observations or by organic vapour screening. Samples submitted for chemical analysis were collected from locations judged by the assessor to be most likely to exhibit the highest concentrations of contaminants based on several factors including (i) visual or olfactory observations, (ii) sample location, depth, and soil type (iii) ground water conditions and headspace reading. A summary of the equipment used for field screening is provided below:

Table 4-2: Field Screening Equipment

Parameter	Details
Make and Model of Field Screening Instrument	RKI Eagle 2, Model 5101-P2 Serial Number: E2G721
Chemicals the equipment can detect and associated detection limits	VOCs with dynamic range of 0 parts per million (ppm) to 2,000 ppm PHCs with range of 0 to 50, 000 ppm
Precision of the measurements	3 significant figures
Accuracy of the measurements	VOCs: ± 10% display reading + one digit Hydrocarbons: ± 5% display reading + one digit
Calibration reference standards	PID: Isobutylene CGD: Hexane
Procedures for checking calibration of equipment	In-field re-calibration of the CGI was conducted (using the gas standard in accordance with the operator's manual instructions) if the calibration check indicated that the calibration had drifted by more than +/- 10%.

A summary of the soil headspace measurements is provided in the borehole logs, provided under Appendix B.

4.5 Groundwater Monitoring Well Installation

No groundwater wells were installed for this Phase Two ESA investigation. Groundwater was not identified as a media of concern by the Phase One ESA.

Three (3) additional monitoring wells were installed on Site to support the preliminary geotechnical investigation completed concurrently with this Phase Two ESA. The monitoring wells were installed upon completion of three (3) boreholes advanced on the Phase Two Property . The monitoring wells were constructed of 51-millimetre (2-inch) inner diameter (ID) flush-threaded schedule 40 polyvinyl chloride (PVC) risers, equipped with a 3.1 m length of No. 10 slot PVC screen. The well screens were sealed at the bottom using a threaded cap and at the top with a lockable J-plug. Silica sand was placed around and up to 0.6m above the well screen to act as a filter pack. Bentonite was placed from the ground surface to the top of the sand pack. The wells were completed with both protective monument and flush mount casings.

Details regarding the monitoring well construction can be found in Table 1, and on the borehole logs provided in Appendix B.

4.6 Groundwater Field Measurement of Water Quality Parameters

Not applicable. Groundwater field measurements were not collected since groundwater was excluded from the investigation as it was not identified as a media of potential concern.

4.7 Groundwater Sampling

Not applicable. Groundwater sampling was not conducted for this investigation since it was not identified as a media of potential concern.

4.8 Sediment Sampling

No sediment as defined under O.Reg. 153/04 (as amended) was present on the Phase Two Property at the time of this investigation. Sediment sampling was not conducted as a result.

4.9 Analytical Testing

The soil and groundwater samples collected were submitted to Bureau Veritas (BV) under chain of custody protocols. BV is an independent laboratory accredited by the Canadian Association for Laboratory Accreditation. BV conducted the analyses in accordance with the

MECP document "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" dated March 9, 2004 (revised on July 1, 2011).

4.10 Residue Management Procedures

4.10.1 Soil Cuttings from Drilling and Excavations

Significant amounts of soil cuttings were not generated due to the sampling methodology employed.

4.10.2 Water from Well Development and Purging

No excess water was derived or stored on the Phase Two Property.

4.10.3 Fluids from Equipment Cleaning

No excess fluids were generated from the sampling activities.

4.11 Elevation Surveying

The ground surface elevations of the boreholes/monitoring wells were surveyed using a Sokkia GCX-2 GNSS RTK receiver, based on global positioning systems satellites, with datum NAD83, UTM zone 17T.

The ground surface elevations can be found on the borehole logs presented in Appendix B.

4.12 Quality Assurance and Quality Control Measures

4.12.1 Sample containers, preservation, labelling, handling and custody for samples submitted for laboratory analysis, including any deviations from the SAP

All soil and groundwater samples were stored in laboratory-supplied sample containers in accordance with the MECP Analytical Protocol. A summary of the preservatives supplied by the laboratory is provided in the table below.

Table 4-3: Summary of Sample Bottle Preservatives

Media	Parameter	Sample Container
Soil	PHCs F1 VOCs	40 mL methanol preserved glass vial with septum lid.
	PHCs F2-F4 metals and ORPs PAHs	120 mL or 250 mL unpreserved glass jar with Teflon™-lined lid.

Each sample container was labelled with a unique sample identification, the project number, and the sampling date. All samples were placed in an ice-filled cooler upon completion of sampling and kept under refrigerated conditions until the time of delivery to the analytical

laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

4.12.2 Description of equipment cleaning procedures followed during all sampling

Dedicated, disposable nitrile gloves were used for each sampling event to reduce the potential for cross-contamination.

Dedicated single-use PVC 5-feet long liner samplers were used in the macro-core sampling system for each sampling event.

4.12.3 Description of how the field quality control measures referred to in subsection 3 (3) were carried out

Field duplicate samples were collected at the time of sampling. In accordance with O.Reg. 153/04, one duplicate sample was analyzed per ten samples submitted for analysis. A laboratory prepared trip blank accompanied the groundwater samples during each sampling event and was submitted for laboratory analysis of VOCs.

All field screening devices (i.e. RKI Eagle 2) were calibrated prior to use by the supplier. Calibration checks were completed, and re-calibrations were conducted as required.

4.12.4 Description of, and rational for, any deviations from the procedures set out in the quality assurance and quality control program set out in the SAP

There were no deviations from the QA/QC program described in the SAP.

5.0 Review and Evaluation

5.1 Geology

A summary of the subsurface conditions is presented below. Additional details may be found in the borehole logs appended in Appendix B. The boundaries of soil indicated on the borehole logs and described below are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

A surficial layer of topsoil approximately 51 to 350 mm in thickness was encountered and was underlain by reworked/disturbed native consisting of of silty clay (till), clayey silt and sandy silt, extending to an approximate depth of 1 mbgs. Undisturbed clayey silt and silty clay deposits were encountered to an approximate depth of 13.7 mbgs. Silt (till) deposits were encountered below the silty clay to clayey silt deposits at depths raging from 7.6 to 18.3 mbgs. Underlying the silt (till) deposits, a lower clayey silt (till) to silty clay unit was

encountered at depts ranging from 19.1 to 27.4 mbgs. A second and lower silt (till) deposit was encountered at depths ranging from 13.7 to 33.5 mbgs. A third lower unit of silty clay (till) to clayey silt (till) was encountered at a depth of approximately 29 mbgs, extending to the explored depth of the geotechnical boreholes. A deposit of silty sand was encountered in borehole BH22-1 at depths ranging from 2.3 to 15.2 mbgs. A lower unit of sandy silt to silty sand was encountered in borehole BH22-3 at depths raging from 18.3 to 24.4 mbgs. Bedrock was not encountered within any of the boreholes.

Table 5-1: Summary of Geologic Units Investigated

Geologic Unit	Inferred Thickness (m)	Top Elevation (masl)	Bottom Elevation (masl)	Properties
Topsoil	0.05-0.150	184.1	183.9	-
Silty Clay (till)/ Clayey Silt/ Sandy Silt	2.0-9.9	184	174	Grey, moist to wet
Silt (till)	1.5-3.1	175.8	166.3	Brown to red, moist to wet
Lower Clayey Silt (till)/ Silty Clay	3.1-9.1	166.3	157.2	Brown to red, moist to wet, hard
Silt (till)	3.1-15.3	171.0	154.1	Brown to red, moist, hard
Third Lower Silty Clay (till)/ Clayey Silt (till)	> 6.0	154.1	-	Moist, hard

5.2 Ground Water Elevations and Flow Direction

5.2.1 Rationale for Monitoring Well Location and Well Screen Intervals

Ten (10) monitoring wells were already installed by DS in 2021, and three (3) additional monitoring wells were installed on Site as part of the geotechnical investigation completed concurrently with this Phase Two ESA. The monitoring wells were installed in order to enable groundwater monitoring and to assess groundwater flow direction. The monitoring wells were screened to intersect the first water bearing formation encountered. The monitoring wells were screened within the silty sand and silty clay units to an approximate depth of 6.1 mbgs. This unit is inferred to be an unconfined aquifer.

5.2.2 Results of Interface Probe Measurements

A summary of the groundwater level measurements is provided in Table 1. The groundwater level measurements were collected using a Solinst interface probe (model 122). The depth to groundwater was found to range between 0.12 to 1.57 mbgs on March 25, 2022. There was no indication of DNAPL or LNAPL in the monitoring wells at this time.

5.2.3 Product Thickness and Free Flowing Product

No evidence of product was observed in the monitoring wells at the time of the investigation.

5.2.4 Groundwater Elevation

The groundwater elevation was calculated by subtracting the depth to groundwater from the surface elevation determined by the surface elevation survey conducted as part of this investigation. A summary of the groundwater elevations calculated is presented in Table 1. Generally, the groundwater elevation was found to range from 181.92 to 183.78 masl in the upper aquifer investigated.

5.2.5 Groundwater Flow Direction

The groundwater flow direction was interpreted using the groundwater elevations calculated for the monitoring wells installed on the Phase Two Property. Based on the groundwater elevations calculated, the groundwater flow direction is interpreted to be southeasterly, towards a tributary of Welland River on the southern portion of the Phase One Study area, and northwesterly at the centre portion of the Site, towards another tributary of Welland River traversing the northern portion of the Site. The groundwater elevation contours, and flow direction are presented on Figure 6.

5.2.6 Assessment of Potential for Temporal Variability in Groundwater Flow Direction

The shallow aquifer investigated is inferred to be an unconfined aquifer, based on the soil stratigraphy observed in the boreholes advanced on the Phase Two Property. It is possible that temporal variations in groundwater elevations may occur on the Phase Two Property in response to seasonal weather patterns.

Temporal variability in groundwater level has the ability to influence the groundwater flow direction. The degree of variation in groundwater levels on the Phase Two Property can only be confirmed with long-term monitoring.

5.2.7 Evaluation of Potential Interaction Between Buried Utilities and the Water Table

The groundwater table was encountered at depths ranging from 0.12 to 1.57 mbgs on March 25, 2022 on the Phase Two Property. Buried utility services are present on the Phase Two Property and are inferred to be situated at depths ranging between 2 and 3 mbgs. Based on this, there is the potential for the utility trenches to act as preferential pathways. However, since groundwater was not considered a media of potential impact and all soil samples were

found to meet the applicable site condition standards, as such, the potential for preferential migration of contaminants is not of concern at this time.

5.3 Ground Water Hydraulic Gradients

5.3.1 Horizontal Hydraulic Gradient

The horizontal hydraulic gradient was calculated based on the groundwater levels recorded on November 11, 2021 from monitoring wells already existing on Site, and installed by DS in 2021 to support the preliminary geotechnical investigation conducted concurrently with this Phase Two ESA.

Table 5-2: Summary of Horizontal Hydraulic Gradient Calculations

Hydrogeological Unit	Calculated Horizontal Hydraulic Gradient
Silty Clay (till)/ Clayey Silt/ Sandy Silt	Minimum: 0.00017 Average:0.00440 Maximum:0.03494

5.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient was not calculated, as groundwater was not identified as a potential impacted media of concern on the Phase Two Property.

5.4 Fine-Medium Soil Texture

As a conservative measure all soil on the Phase Two Property were considered to be coarse textured for the purpose of determining the applicable MECP SCS.

5.5 Soil Field Screening

Soil vapour headspace readings were collected at the time of sample collection, the results of which are presented on the borehole logs (Appendix B). The soil vapour headspace readings were collected using a calibrated RKI Eagle 2 operated in methane elimination mode. The PID readings ranged between non-detect (0 ppm) and 1 ppm. The CGD readings ranged between non-detect (o ppm) 0 and 5 ppm.

The soil samples were also screened for visual and olfactory indicators of impacts (e.g. staining, odours). No staining, odours, sheening, or evidence of LNAPL or DNAPL were present at the time of sampling.

5.6 Soil Quality

The results of the chemical analyses conducted are presented in Tables 4 through 10. A visual summary of the location of the sample locations is provided in Figures 8A through 8F. The laboratory certificates of analysis have been provided under Appendix C.

5.6.1 Metals and ORPs

A total of ten (10) samples were submitted for analysis of metals and hydrides. Two (2) samples were submitted for analysis of the full metals and ORPs package.

The results of the analyses are tabulated in Table 4 and 5 (enclosed) and presented on Figure 8A and 8B. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

5.6.2 Petroleum Hydrocarbons

A total of one (1) sample was submitted for analysis of PHCs (incl. BTEX). The results of the analyses are tabulated in Table 6 and presented on Figure 8C. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

5.6.3 Volatile Organic Compounds

A total of one (1) sample was submitted for analysis of VOCs. The results of the analyses are tabulated in Table 7 and presented on Figure 8D. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

5.6.4 Polycyclic Aromatic Hydrocarbons

A total of three (3) samples, including one (1) field duplicates for QA/QC purposes were submitted for analysis of PAHs. The results of the analyses are tabulated in Table 8 and presented on Figure 8E. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

5.6.1 Organochlorine Pesticides

A total of fourteen (14) samples, including three (3) field duplicates for QA/QC purposes were submitted for analysis of OCPs. The results of the analyses are tabulated in Table 9 and 10 and presented on Figure 8F. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

5.6.2 Commentary on Soil Quality

All soils samples submitted for analysis of metals and ORPs, PHCs, VOCs, PAHs and OCPs met the applicable site condition standards.

5.7 Ground Water Quality

Groundwater was not collected for analysis for this investigation since it is not considered a potential impacted media for the Phase Two Property.

5.8 Sediment Quality

No sediment was present on the Phase Two Property at the time of the investigation.

5.9 Quality Assurance and Quality Control Results

Collection of soil and groundwater samples was conducted in general accordance with the MECP *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*. As described in Section 5.12, dedicated equipment was used where possible, and all non-dedicated equipment was decontaminated before and between sampling events. All soil and groundwater samples were transferred directly into laboratory-supplied containers. The laboratory containers were prepared by the laboratory with suitable preservative, as required. All samples were stored and transported under refrigerated conditions. Chain of custody protocols were maintained from the time of sampling to delivery to the analytical laboratory.

The field QA/QC program involved the collection of field duplicate soil and groundwater samples, and the use of a trip blank for each groundwater sampling event (when suitable). In addition to the controls listed above, the analytical laboratory employed method blanks, internal laboratory duplicates, surrogate spike samples, matrix spike samples, and standard reference materials.

A summary of the field duplicate samples analyzed and an interpretation of the efficacy of the QA/QC program is provided in the table below.

Table 5-3: Summary of QA/QC Results

Sample ID	QA/QC duplicate	Medium	Parameter Analyzed	QA/QC Result
BH22-4 S1	DUP-1	Soil	OCPs	All results were within the analytical protocol criteria for RPD.
BH22-6 S1	DUP-2	Soil	OCPs	
BH22-8 S1	DUP-3	Soil	OCPs	

Sample ID	QA/QC duplicate	Medium	Parameter Analyzed	QA/QC Result
BH22-11 S2	DUP-4	Soil	PAHs	All results were within the analytical protocol criteria for RPD.

Based on the interpretation of the laboratory results and the QA/QC program, it is the opinion of the QP that the laboratory analytical data can be relied upon.

All samples were handled in accordance with the MECP Analytical Protocol regarding sample holding time, preservation methods, storage requirements, and type of container.

Bureau Veritas routinely conducts internal QA/QC analyses in order to satisfy regulatory QA/QC requirements. The results of the Bureau Veritas QA/QC analyses for the submitted soil samples are summarized in the laboratory Certificates of Analyses provided in Appendix C.

With respect to subsection 47(3) of O.Reg 153/04 (as amended), all certificates of analysis or analytical reports pursuant to clause 47(2) (b) of the regulation comply with subsection 47(3). A certificate of analysis has been received for each sample submitted for analysis and have been provided (in full) in Appendix C.

A review of the QA/QC sample results indicated that no issues were identified with respect to both the field collection methodology and the laboratory reporting. It is the opinion of the QP that the analytical data obtained are representative of the soil and groundwater conditions at the Phase Two Property for the purpose of assessing whether the soil and groundwater at the Phase Property meets the applicable MECP SCS.

6.0 Conclusions

This Phase Two ESA involved that advancement of twelve (12) boreholes to maximum depths of, the installation of 1.5 to 3.05 mbgs, and the collection of soil samples for analysis of COPCs, including metals and hydrides, CN-, PHCs, VOCs, PAHs and OCPs.

Based on the results of the information gathered through the course of the investigation, all of the soil samples analysed met the applicable MECP Table 1 and 2 SCS for the relevant contaminants of potential concern.

It is concluded and it is the opinion of the QP_{ESA} that the soil quality on-Site met the applicable Site Condition Standards as the certification date of April 2, 2022. No further sub-surface investigation is recommended at this time regarding the environmental quality of the soil at the Phase Two Property. A Record of Site Condition may be filed on the basis of this Phase Two ESA.

Due to the presence of the environmentally sensitive portions of the Site, it may be beneficial to submit separate RSCs for the environmentally sensitive portions of the Site

All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

6.1 Qualifications of the Assessors

John Gaviria-Ballen, B. Eng., EIT

Mr. Gaviria-Ballen is an Environmental EIT with DS Consultants Ltd. John holds a bachelor's degree in Environmental Engineering from Carleton University and a Post Graduate Certificate in Environmental Engineering Applications from Conestoga College. John is a registered Engineer in Training (EIT) with Professional Engineers of Ontario (PEO) and has experience in conducting Phase One and Two Environmental Site Assessments, soil and groundwater remediation projects.

Mr. Patrick (Rick) Fioravanti, B.Sc., P.Geo., QP_{ESA}

Mr. Fioravanti is the Manager of Environmental Services with DS Consultants Limited. Patrick holds a Honours Bachelor of Science with distinction in Toxicology from the University of Guelph and is a practicing member of the Association of Professional Geoscientists of Ontario (APGO). Patrick has over ten years of environmental consulting experience and has conducted and/or managed hundreds of projects in his professional experience. Patrick has extensive experience conducting Phase One and Phase Two Environmental Site Assessments in support of brownfields redevelopment in urban settings, and been involved in numerous remediation projects, supported many risk assessments, and successfully filed Records of Site Condition with the Ministry of Environment, Conservation and Parks. He has conducted work across southern and eastern Ontario, and Quebec in his professional experience. Patrick is considered a Qualified Person to conduct Environmental Site Assessments as defined by Ontario Regulation 153/04 (as amended).

6.2 Signatures

This Phase Two ESA was conducted under the supervision of Rick Fioravanti, B.Sc., P.Geo., QP$_{ESA}$ in accordance with the requirements of O.Reg. 153/04 (as amended). The findings and conclusions presented have been determined based on the information obtained at the time of the investigation, and on an assessment of the conditions of the Site at this time.

We trust this report meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

DS Consultants Ltd

Prepared by:

John Gaviria-Ballen, B. Eng., EIT
Assistant Project Manager - Environmental

Reviewed by:

Patrick Fioravanti, B.Sc., P.Geo., QP$_{ESA}$
Manager – Environmental Services

6.3 Limitations

This report was prepared for the sole use of Primont (Thorold/Welland) Inc and is intended to provide an assessment of the environmental condition on the property located at Northwest Corner of Quaker Road and First Avenue, Welland and Thorold, Ontario. The information presented in this report is based on information collected during the completion of the Phase Two Environmental Site Assessment by DS Consultants Ltd. The material in this report reflects DS' judgment in light of the information available at the time of report preparation. This report may not be relied upon by any other person or entity without the written authorization of DS Consultants Ltd. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or reuse of this documents or findings, conclusions and recommendations represented herein, is at the sole risk of said users.

The conclusions drawn from the Phase Two ESA were based on information at selected observation and sampling locations. Conditions between and beyond these locations may become apparent during future investigations or on-site work, which could not be detected or anticipated at the time of this investigation. The sampling locations were chosen based upon a cursory historical search, visual observations and limited information provided by persons knowledgeable about past and current activities on this site during the Phase Two ESA activities. As such, DS Consultants Ltd. cannot be held responsible for environmental conditions at the site that was not apparent from the available information.

7.0 References

- Armstrong, D.K. and Dodge, J.E.P. *Paleozoic Geology Map of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 219.
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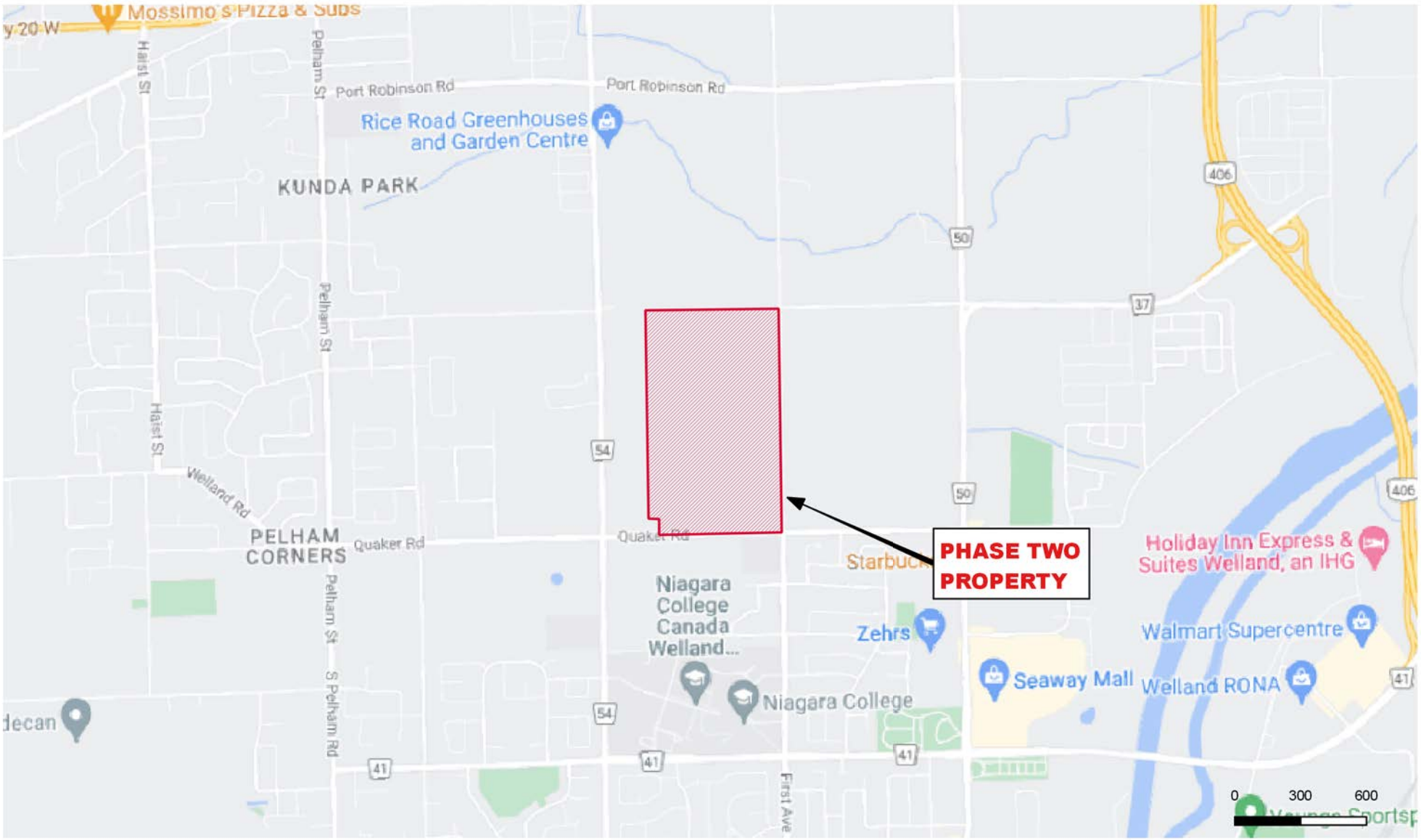
- The Ontario Geological Survey. 2003. *Surficial Geology of Southern Ontario*.
- *"Phase One ESA, Block 7, PT TWP LT 228 THOROLD BEING PT 2 ON 59R7326, PT TWP LT 228 THOROLD BEING PT 1 ON 59R7326, and 436 Quaker Road, (Northwest Corner of Quaker Road and First Avenue), Welland and Thorold, Ontario",* prepared for Primont (Thorold/Welland) Homes, prepared by DS Consultants Limited, dated April 4, 2022.

Figures

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 1 - Site Location Plan.qgs Apr-04 12:51



Legend

Approx Property Boundary

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

Title: **SITE LOCATION PLAN**

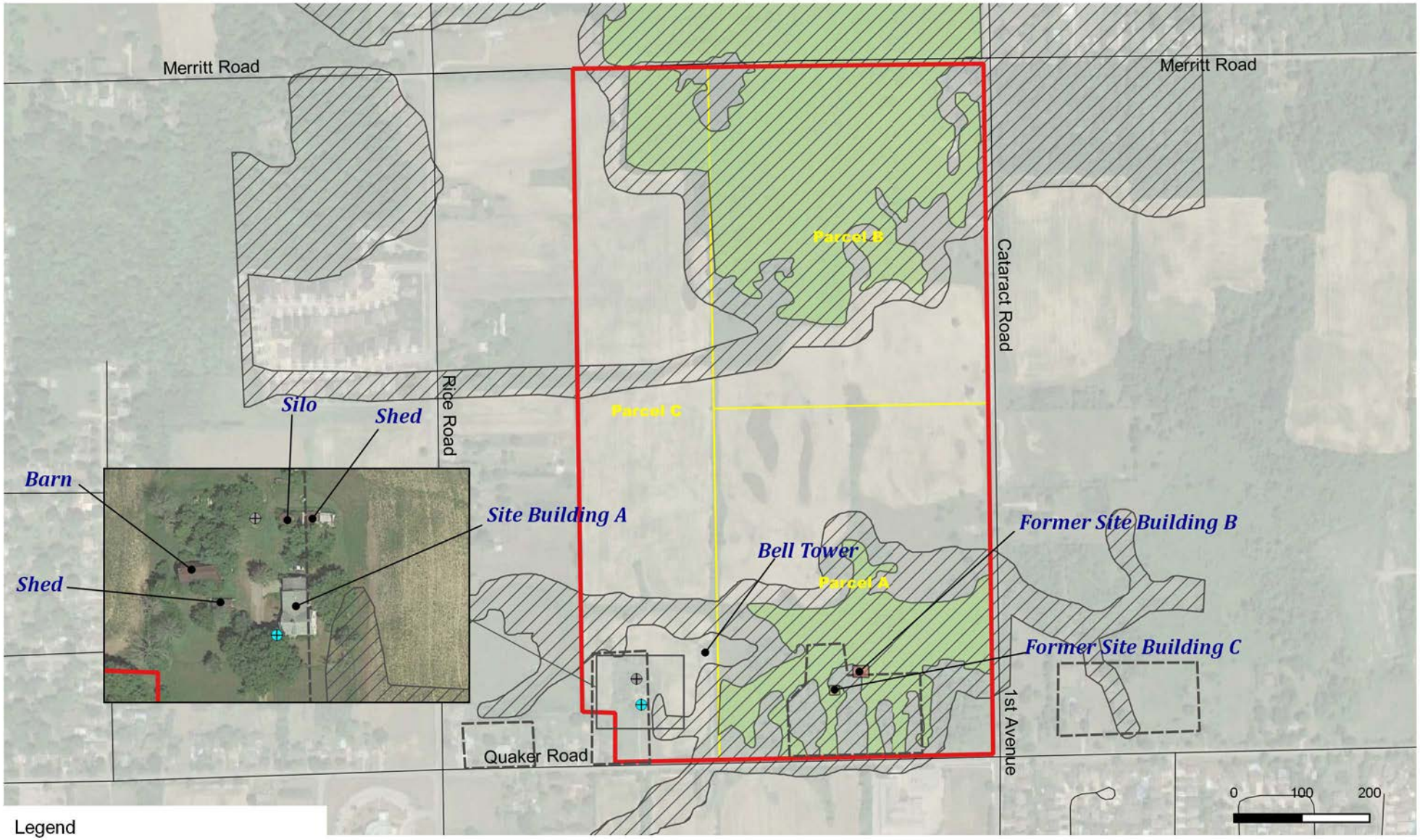
N

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev: 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 1

Image/Map Source: *Google Street Map*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 2 – Phase Two Property Site Plan.qgs Apr-04 13:17



Legend

- Approx Property Boundary
- Former Orchard
- NPCA Regulated Area O Reg 155/06
- Provincially Significant Wetland
- Current Well
- Former Well

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6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

Title: **PHASE TWO PROPERTY SITE PLAN**

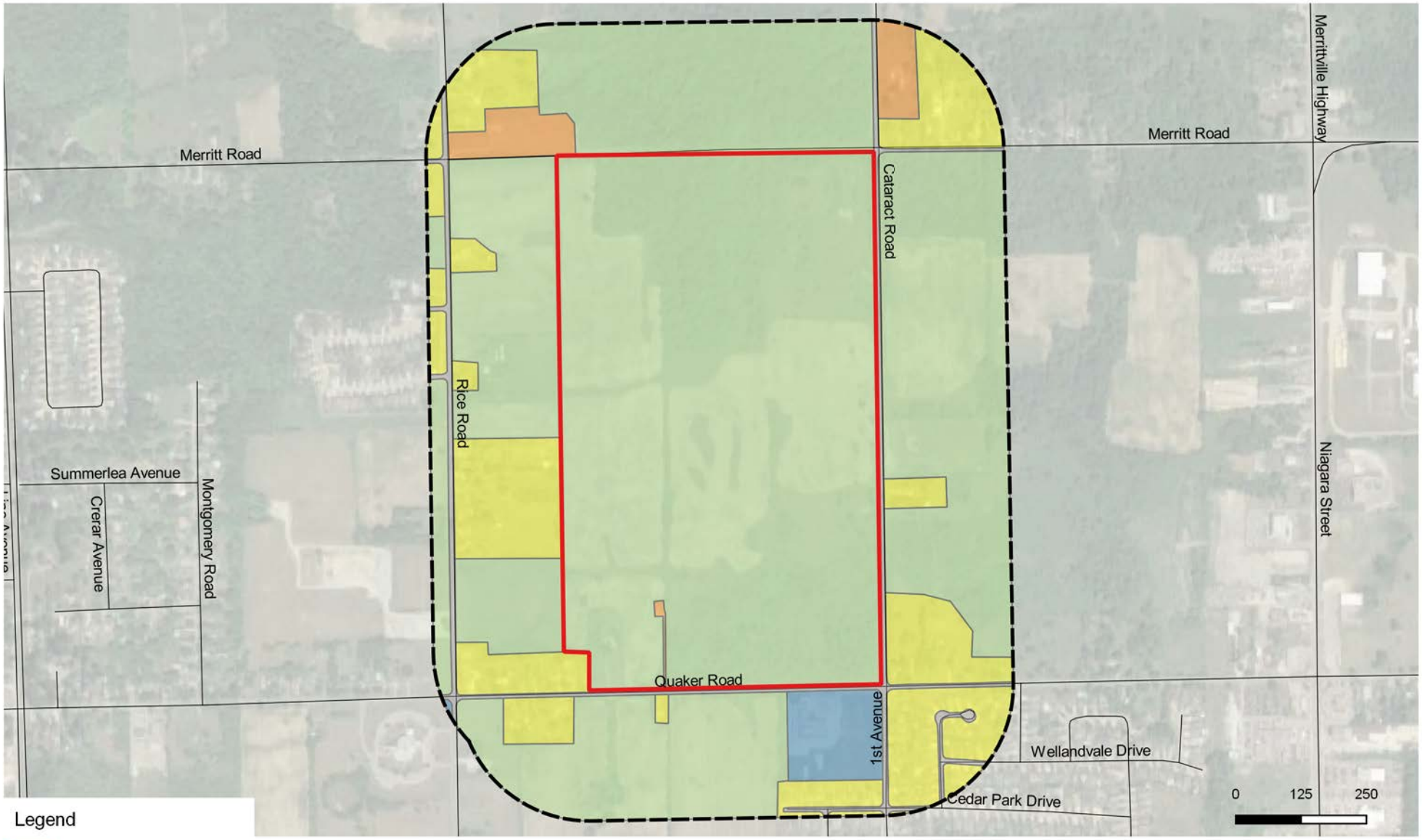
N

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev: 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 2

Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 3 - Phase One Study Area.qgs Apr-04 12:57



DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Client: PRIMONT (THOROLD/WELLAND) INC.

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

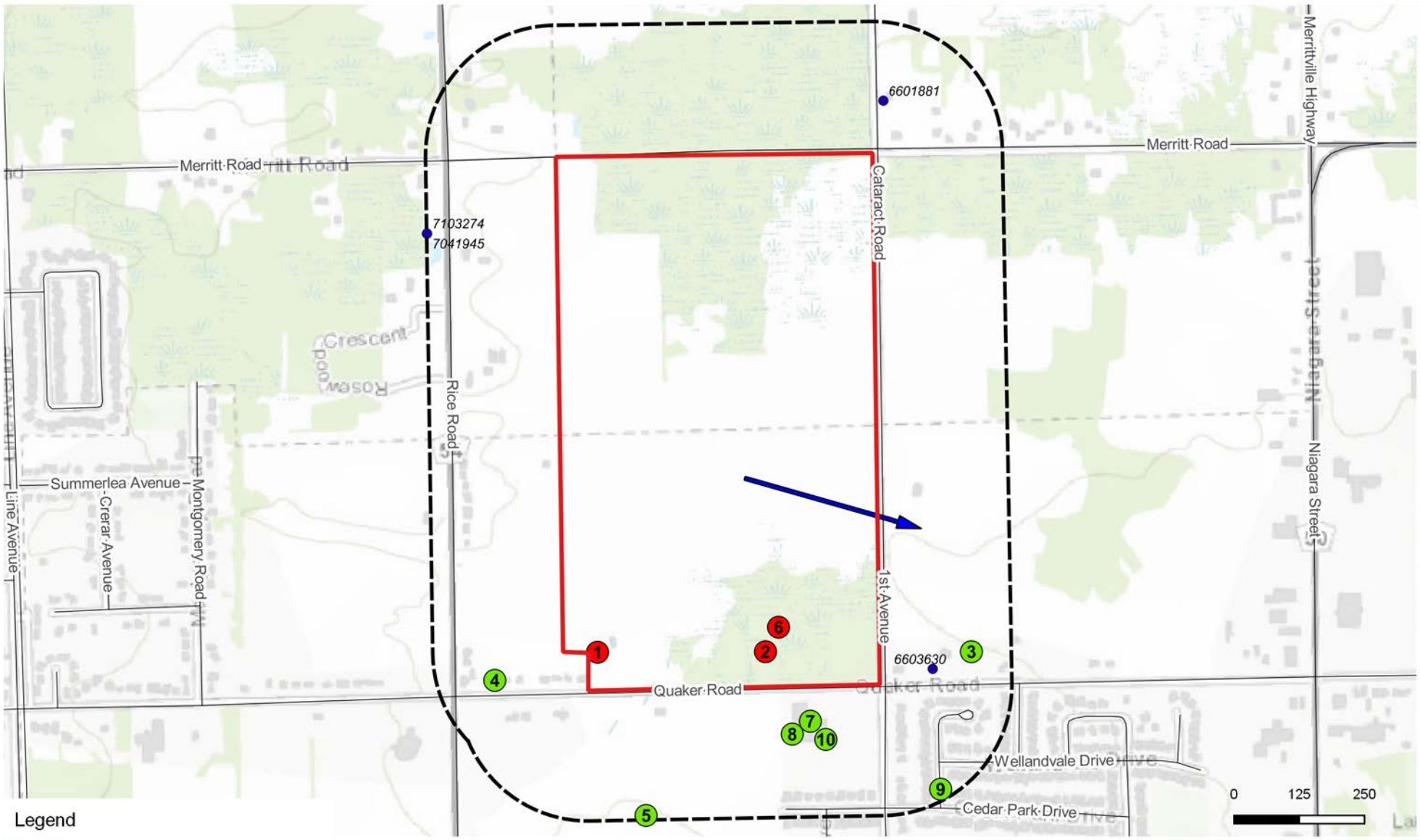
Title: **PHASE ONE STUDY AREA**

N

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev: 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 3

Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 4 - PCA within Phase One Study Area.qgs Apr-04 13:00



Legend

- Approx Property Boundary
- 250m Buffer
- Inferred Groundwater Flow Direction
- Registered Water Well (MECP WWR)
- PCA not contributing to APEC
- PCA contributing to APEC

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6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

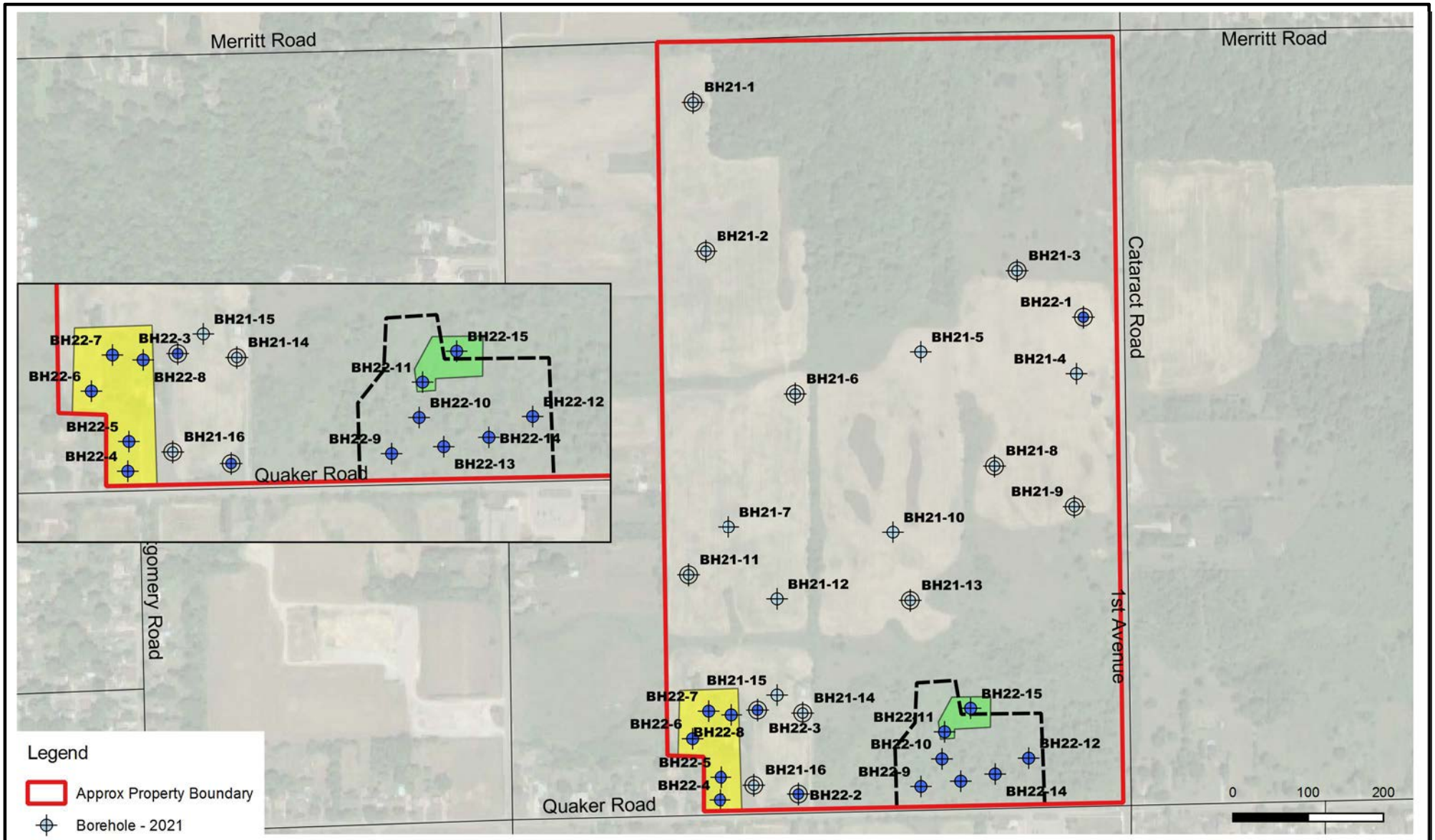
Title: **PCA WITHIN PHASE ONE STUDY AREA**

N

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev: 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 4
	Image/Map Source: *Esri topo Map*		

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 5 – Borehole Location Plan with APECs.qgs Apr-04 13:01



Legend

- Approx Property Boundary
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022
- APEC-1
- APEC-2
- APEC-3

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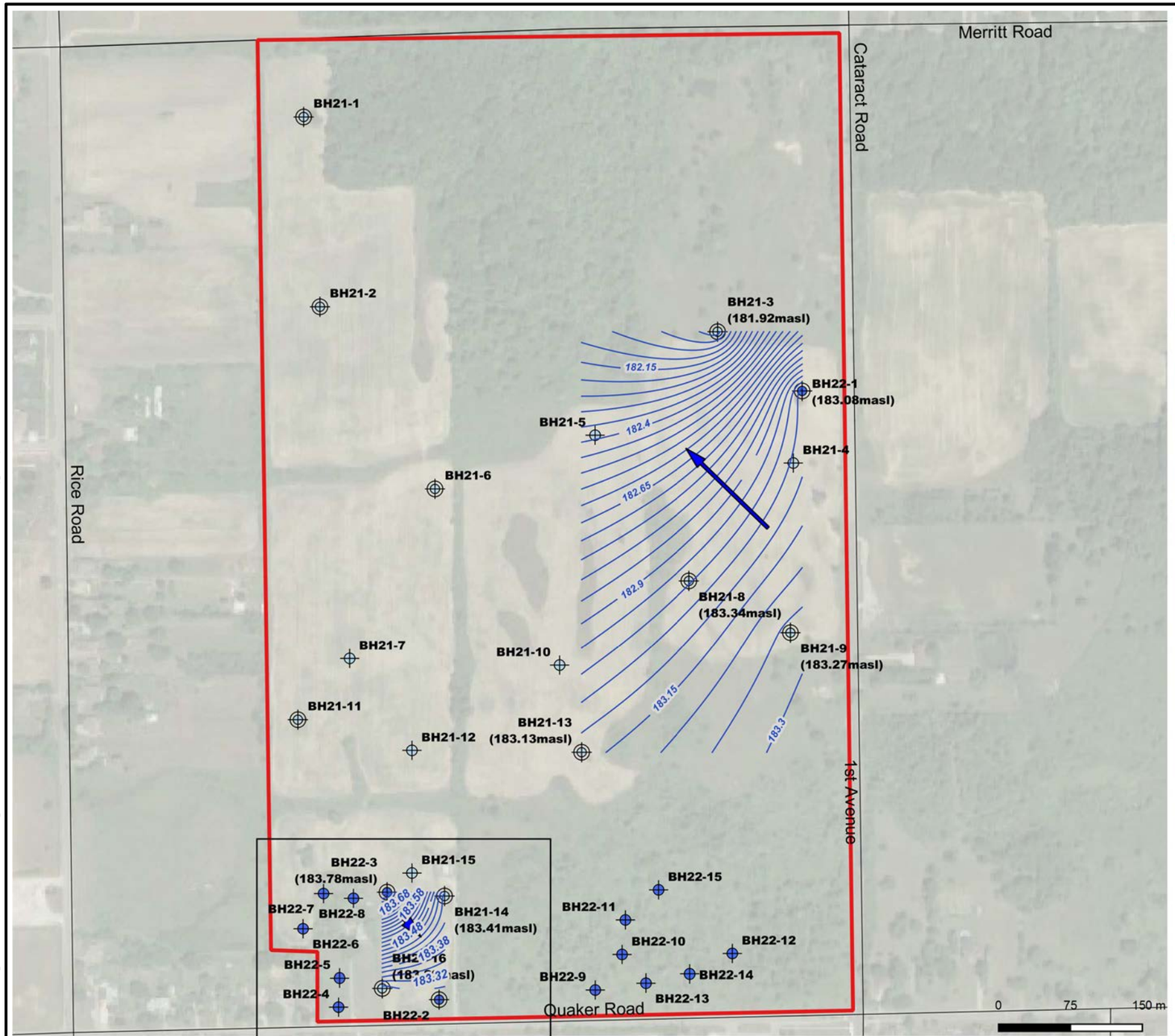
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

Title: **BOREHOLE LOCATION PLAN WITH APECs**

N

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev: 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 5

Image/Map Source: *Google Satellite Image*



Legend

- Approx Property Boundary
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022
- Groundwater Elevation Contour March 25, 2022
- Groundwater Flow Direction

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Quaker Road and First Ave, Welland, ON

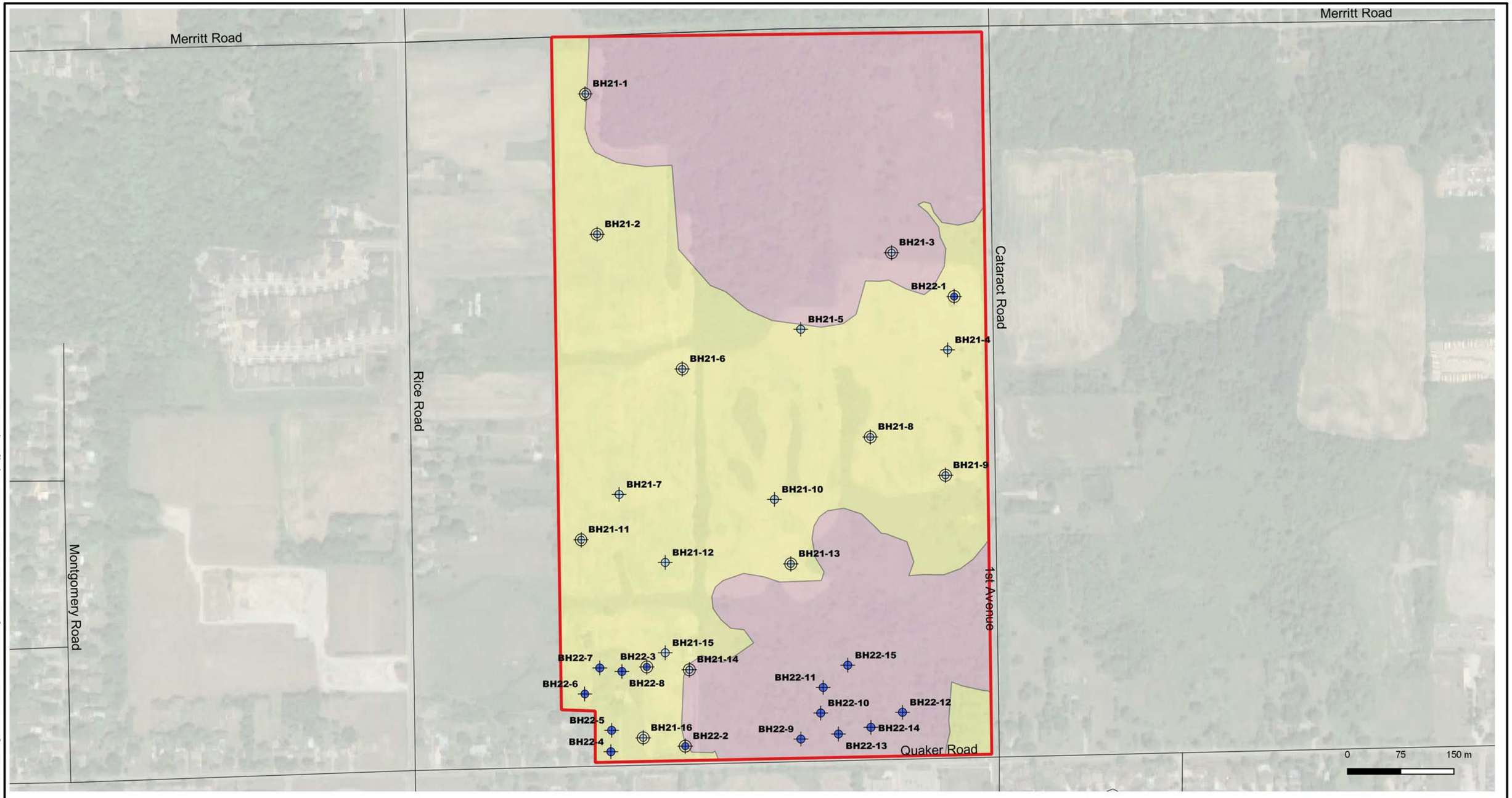
Title: **GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 6

Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 6 – Groundwater Elevation Contours and Flow Direction.qgs Apr-04 13:02



C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 7 – Site Condition Standards Map.qgs Apr-04 13:04

Legend

- Approx Property Boundary
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022
- Table 1 SCS
- Table 2 SCS

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Quaker Road and First Ave, Welland, ON

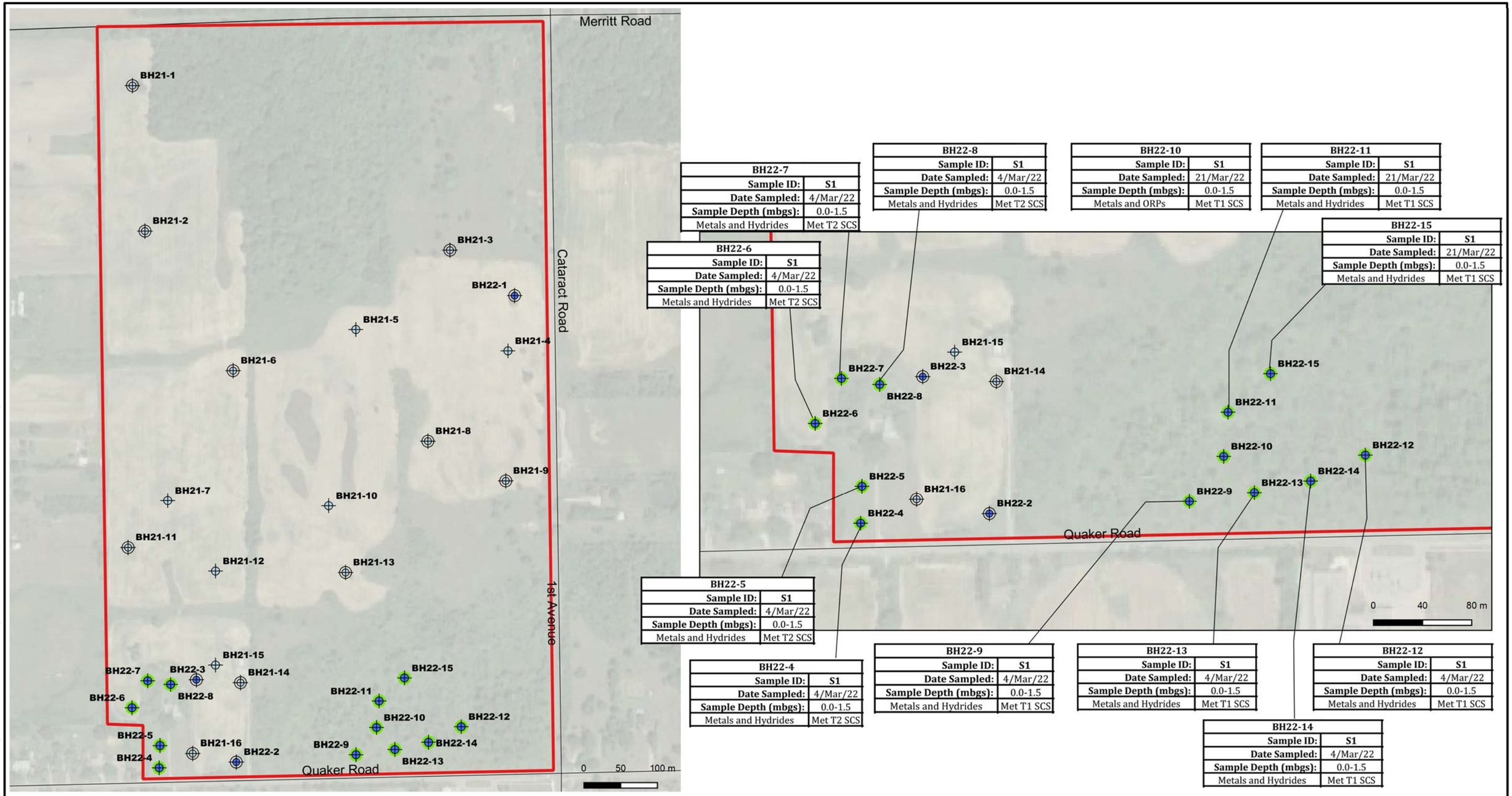
Title: **SITE CONDITION STANDARDS MAP**

N

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 7

Image/Map Source: *Google Satellite Image*



BH22-7	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T2 SCS

BH22-8	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T2 SCS

BH22-10	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and ORPs	Met T1 SCS

BH22-11	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

BH22-15	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

BH22-6	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T2 SCS

BH22-5	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T2 SCS

BH22-4	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T2 SCS

BH22-9	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

BH22-13	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

BH22-12	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

BH22-14	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
Metals and Hydrides	Met T1 SCS

Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Quaker Road and First Ave, Welland, ON

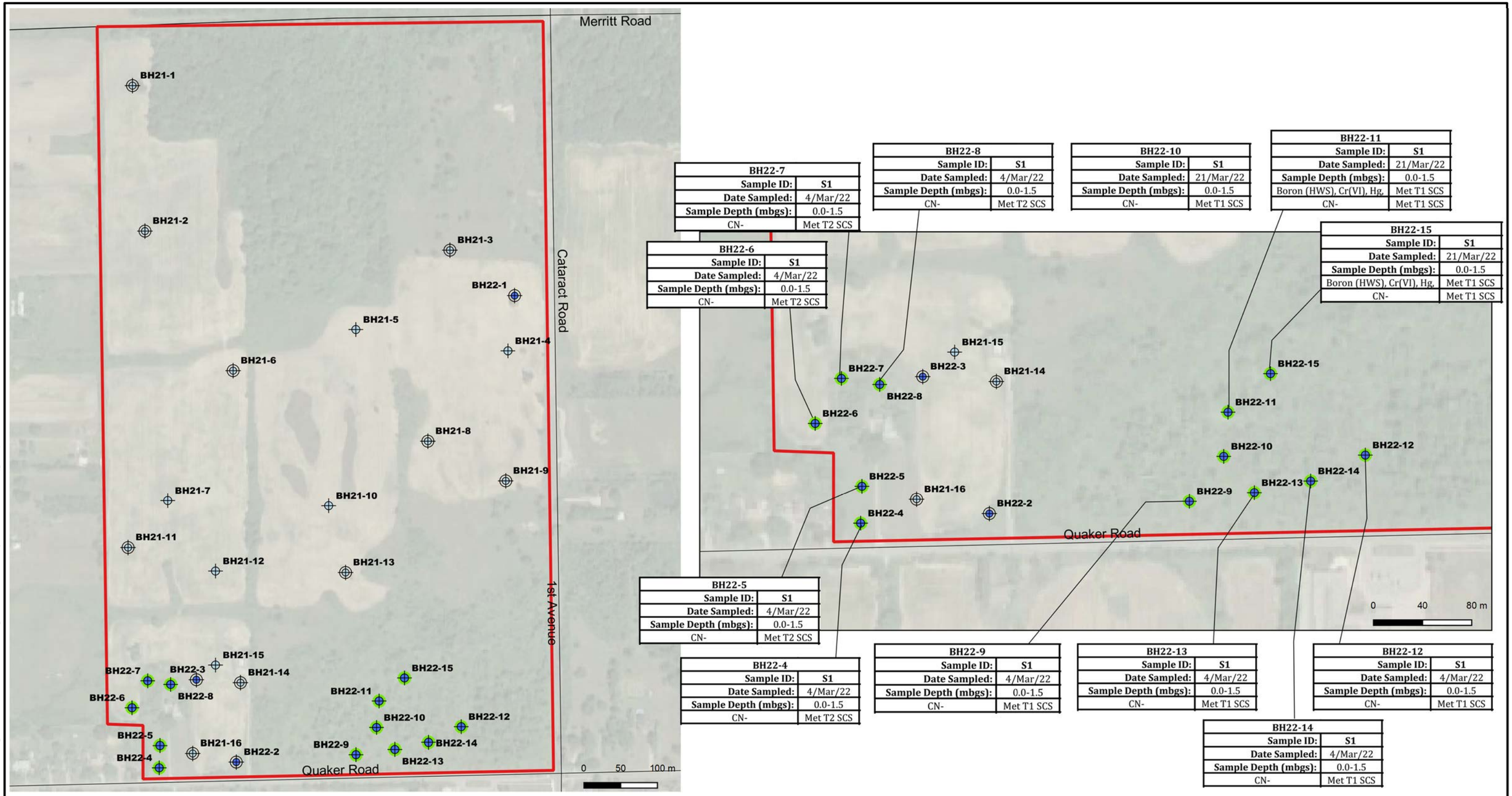
Title: **SOIL CHARACTERIZATION – METALS AND HYDRIDES**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: 8A

Image/Map Source: *Google Satellite Image*

C:\10Sharon\21-339-300 Preliminary Geotechnical Investigation\1-GIS\Phase Two\Figure 8A – Summary of Metals and Hydrides in Soil.qgs Apr-04 13:05



BH22-7	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T2 SCS

BH22-8	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T2 SCS

BH22-10	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T1 SCS

BH22-11	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
Boron (HWS), Cr(VI), Hg,	Met T1 SCS
CN-	Met T1 SCS

BH22-6	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T2 SCS

BH22-15	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
Boron (HWS), Cr(VI), Hg,	Met T1 SCS
CN-	Met T1 SCS

BH22-5	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T2 SCS

BH22-4	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T2 SCS

BH22-9	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T1 SCS

BH22-13	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T1 SCS

BH22-12	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T1 SCS

BH22-14	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
CN-	Met T1 SCS

Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Quaker Road and First Ave, Welland, ON

Title: **SOIL CHARACTERIZATION – ORPs**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
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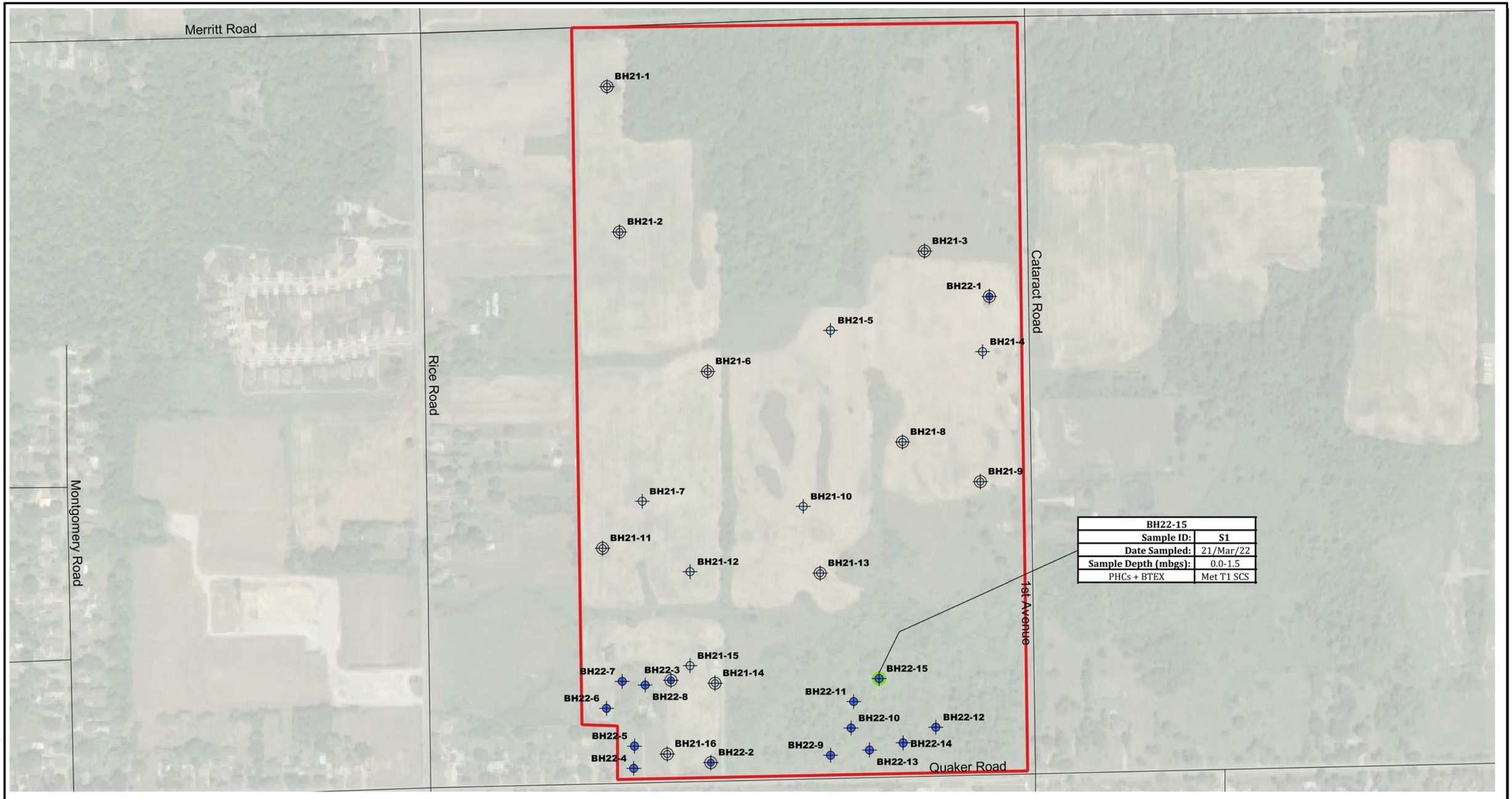
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: **8B**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-GQIS\Phase Two\Figure 8B – Summary of ORPs in Soil.qgs Apr-04 13:06



Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
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Title: **SOIL CHARACTERIZATION – PHCs + BTEX**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: **8C**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 8C – Summary of PHCs in Soil.ggs Apr-04 13:08

Merritt Road

Rice Road

Montgomery Road

Cataract Road

1st Avenue

Quaker Road

BH21-1
BH21-2
BH21-3
BH22-1
BH21-5
BH21-4
BH21-6
BH21-8
BH21-9
BH21-7
BH21-10
BH21-11
BH21-12
BH21-13
BH21-15
BH22-7
BH22-3
BH21-14
BH22-6
BH22-8
BH22-15
BH22-11
BH22-10
BH22-12
BH22-5
BH21-16
BH22-2
BH22-9
BH22-14
BH22-4
BH22-13

BH22-15	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
VOCs	Met T1 SCS

Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Quaker Road and First Ave, Welland, ON

Title: **SOIL CHARACTERIZATION – VOCs**

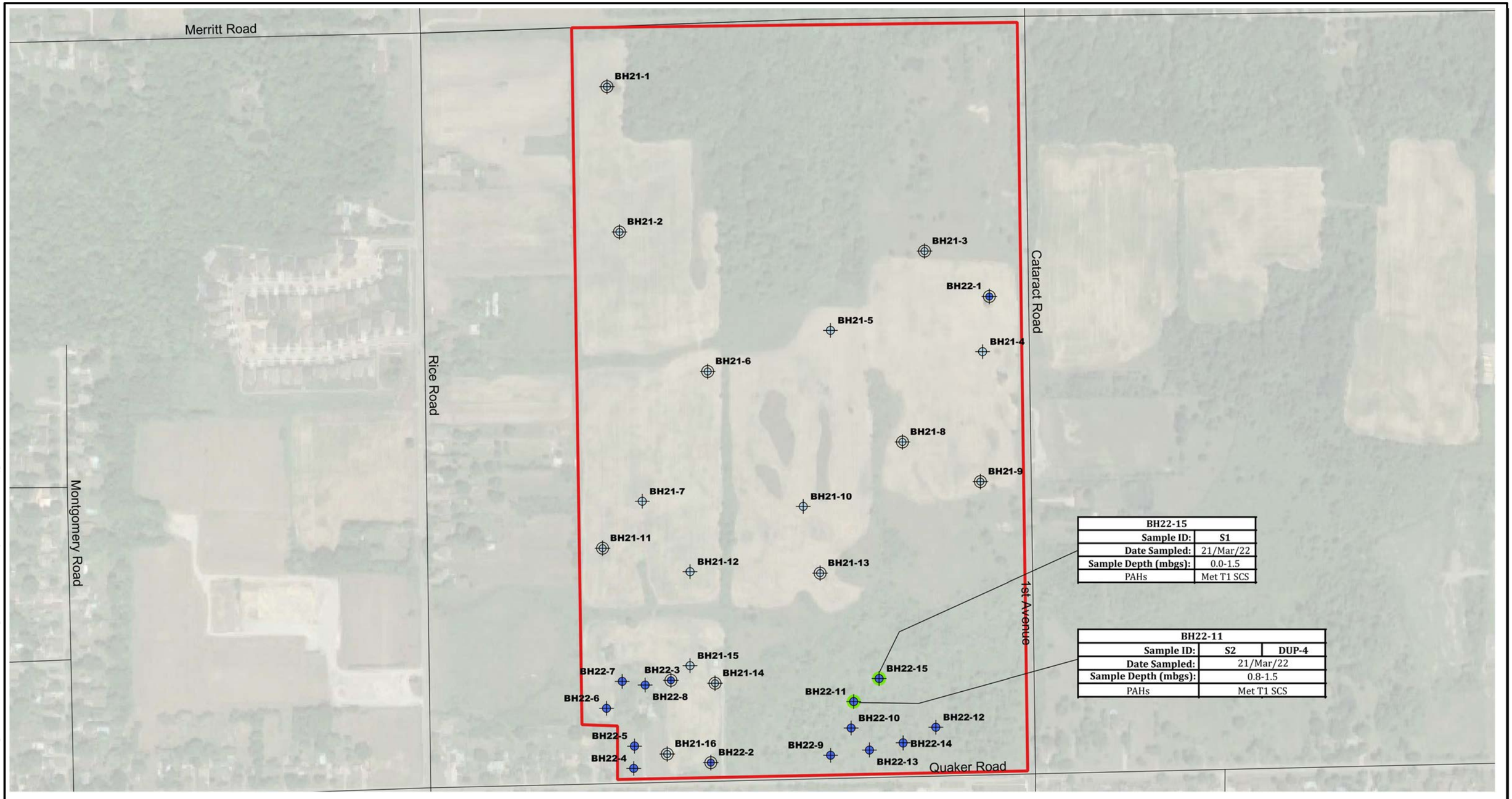
Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: **8D**

Image/Map Source: *Google Satellite Image*

N

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 8D – Summary of VOCs in Soil.ggs Apr-04 13:09



BH22-15	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
PAHs	Met T1 SCS

BH22-11		
Sample ID:	S2	DUP-4
Date Sampled:	21/Mar/22	
Sample Depth (mbgs):	0.8-1.5	
PAHs	Met T1 SCS	

Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Quaker Road and First Ave, Welland, ON

Title: **SOIL CHARACTERIZATION – PAHs**

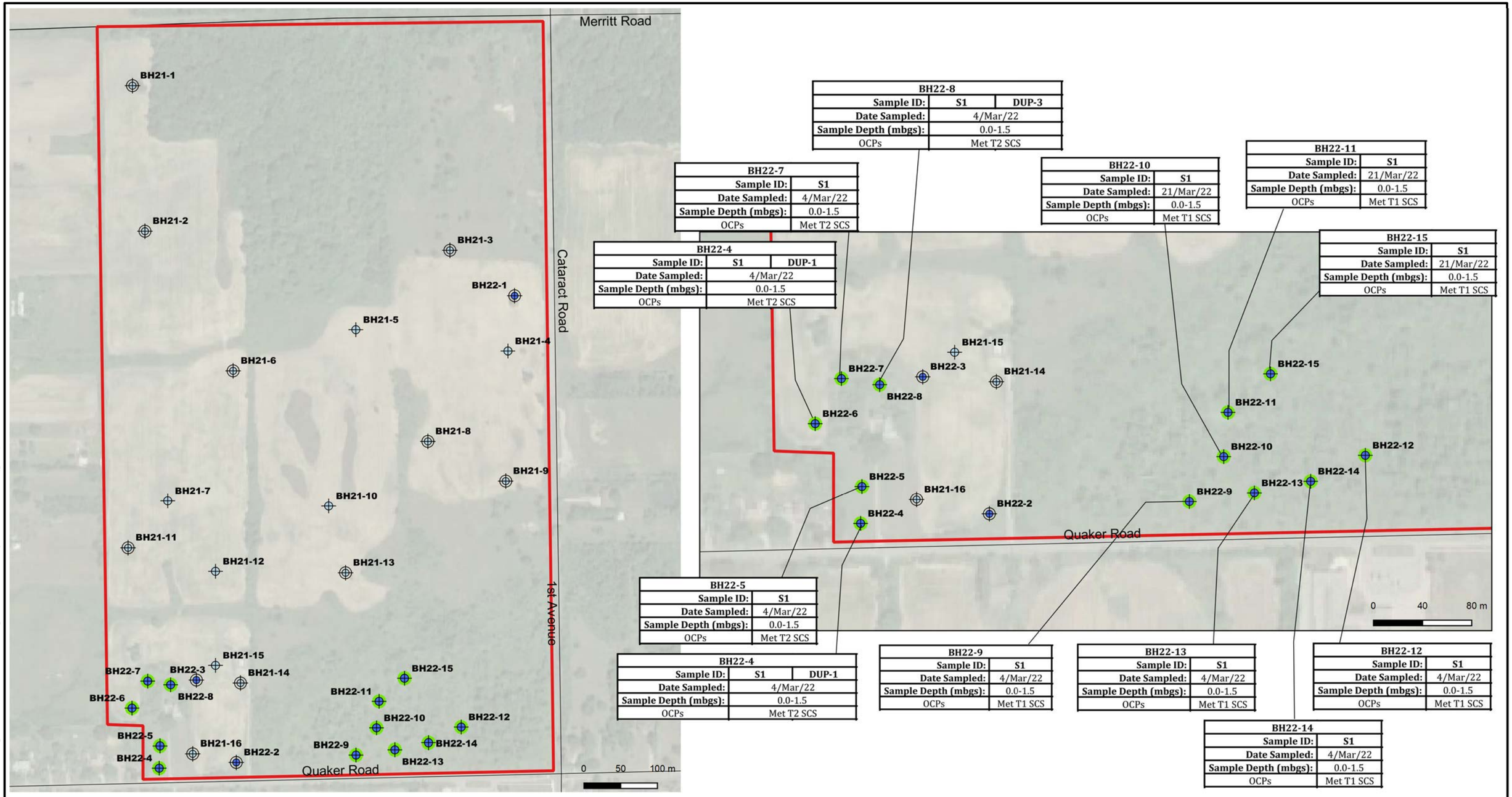
Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	April 2022
Rev. 0	Scale: As Shown	Project No.: 21-339-302	Figure No.: **8E**

Image/Map Source: *Google Satellite Image*

N

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 8E – Summary of PAHs in Soil.qgs Apr-04 13:10



BH22-8		
Sample ID:	S1	DUP-3
Date Sampled:	4/Mar/22	
Sample Depth (mbgs):	0.0-1.5	
OCPs	Met T2 SCS	

BH22-7	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T2 SCS

BH22-10	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-11	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-4		
Sample ID:	S1	DUP-1
Date Sampled:	4/Mar/22	
Sample Depth (mbgs):	0.0-1.5	
OCPs	Met T2 SCS	

BH22-15	
Sample ID:	S1
Date Sampled:	21/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-5	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T2 SCS

BH22-4		
Sample ID:	S1	DUP-1
Date Sampled:	4/Mar/22	
Sample Depth (mbgs):	0.0-1.5	
OCPs	Met T2 SCS	

BH22-9	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-13	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-12	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

BH22-14	
Sample ID:	S1
Date Sampled:	4/Mar/22
Sample Depth (mbgs):	0.0-1.5
OCPs	Met T1 SCS

Legend

- Approx Property Boundary
- Sample Met Applicable Standards
- Borehole - 2021
- Monitoring Well - 2021
- Borehole - 2022
- Monitoring Well - 2022

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Quaker Road and First Ave, Welland, ON

Title: **SOIL CHARACTERIZATION – OCPs**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
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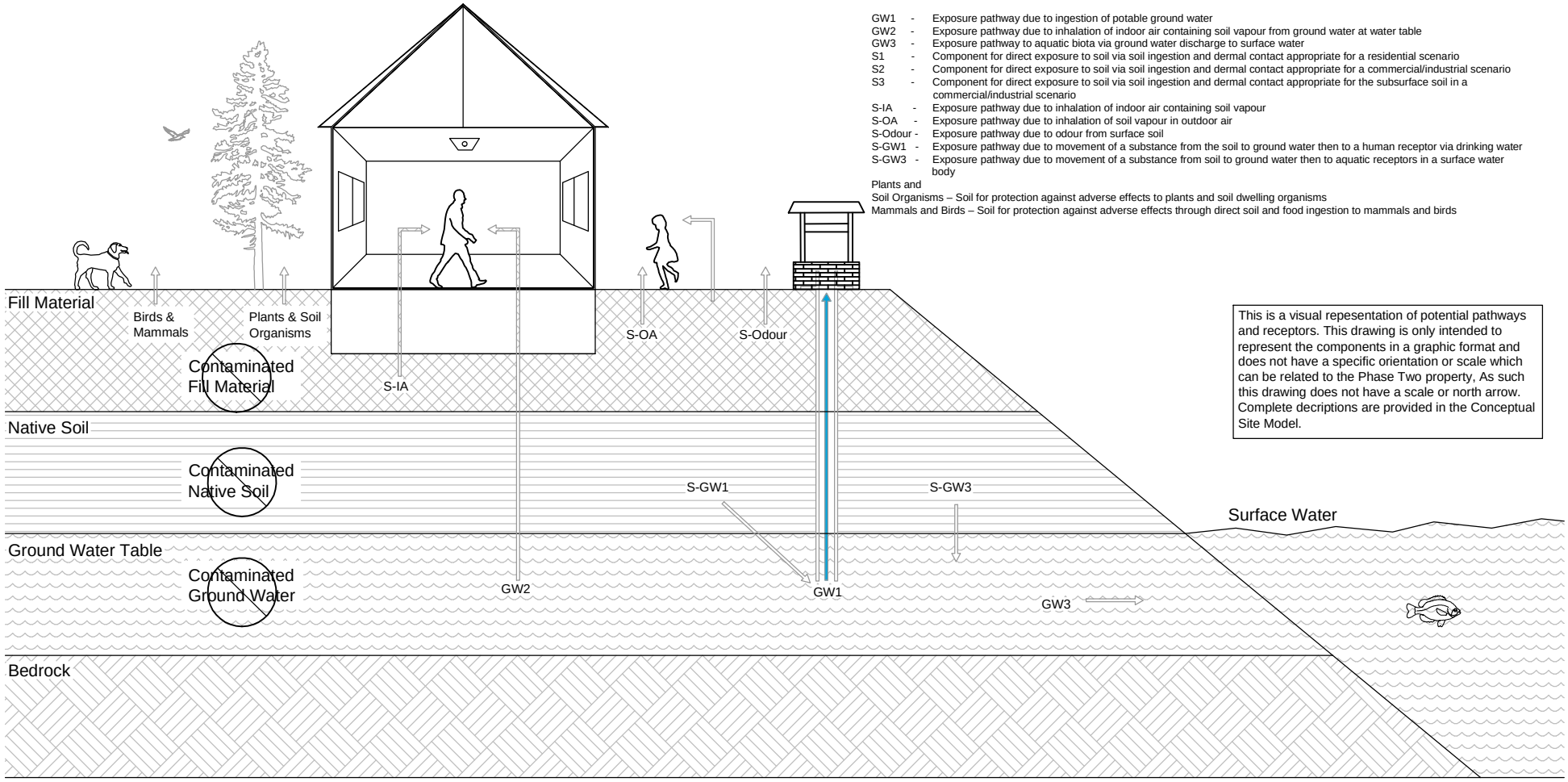
Image/Map Source: *Google Satellite Image*

C:\0Sharon\21-339-300 Preliminary Geotechnical Investigation\1-QGIS\Phase Two\Figure 8F – Summary of OCPs in Soil.qgs Apr-04 13:11

Path:c:\0sharon\21-339-300 preliminary geotechnical investigation\7-misc\cad\contaminant transport diagram.dwg



Not Identified

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Quaker Road and First Ave, Welland, ON

Title: **EXPOSURE PATHWAYS AND RECEPTORS**

Client: PRIMONT (THOROLD/WELLAND) INC.

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	April 2022
Rev.	Scale:	Project No:	Figure No.
	As Shown	21-339-302	9

Tables

Table 1: Summary of Monitoring Well Installation and Groundwater Data

Well ID			BH21-1	BH21-2	BH21-3	BH21-6	BH21-8	BH21-9	BH21-11	BH21-13	BH21-14	BH21-16	BH22-1	BH22-2	BH22-3
Installed By:			DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS
Installation Date:			29-Oct-21	29-Oct-21	27-Oct-21	28-Oct-21	27-Oct-21	27-Oct-21	27-Oct-21	27-Oct-21	28-Oct-21	28-Oct-21	08-Mar-22	03-Mar-22	04-Mar-22
Well Status:			Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active
EastUTM17			641188	641216	641631	641336	641601	641707	641193	641489	641346	641281	641719.196	641340.276	641286.0
NorthUTM17			4765685	4765487	4765461	4765297	4765201	4765147	4765056	4765022	4764872	4764776	4765399.2	4764764.3	4764876
Inner Diameter		(mm)	50	50	50	50	50	50	50	50	50	50	50	50	50
Surface Elevation		(masl)	183.50	184.10	182.40	184.10	183.60	183.50	184.30	183.40	183.60	183.40	184.65	183.35	183.93
Bottom of Concrete Seal/Top of Bentonite Seal		mbgs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		masl	183.50	184.10	182.40	184.10	183.60	183.50	184.30	183.40	183.60	183.40	184.65	183.35	183.93
Bottom of Bentonite Seal/Top of Sand Pack		mbgs	4.00	2.50	2.50	2.50	2.50	2.50	4.00	2.50	2.50	2.50	2.40	2.40	2.40
		masl	179.50	181.60	179.90	181.60	181.10	181.00	180.30	180.90	181.10	180.90	182.25	180.95	181.53
Top of Well Screen		mbgs	4.60	3.10	3.10	3.10	3.10	3.10	4.30	3.10	3.10	3.10	3.05	3.05	3.05
		masl	178.90	181.00	179.30	181.00	180.50	180.40	180.00	180.30	180.50	180.30	181.60	180.30	180.88
Well Screen Length		m	1.50	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
Bottom of Well Screen		mbgs	6.10	6.10	6.10	6.10	6.10	6.10	7.35	6.10	6.10	6.10	6.10	6.10	6.10
		masl	177.40	178.00	176.30	178.00	177.50	177.40	176.95	177.30	177.50	177.30	178.55	177.25	177.83
GW Monitoring															
11-Nov-21	Depth to GW	mbgs	1.26	0.70	0.35	0.54	1.37	0.25	3.47	0.55	0.56	4.43	NI	NI	NI
	GW Elevation	masl	182.24	183.40	182.05	183.56	182.23	183.25	180.83	182.85	183.04	178.97	NI	NI	NI
25-Mar-22	Depth to GW	mbgs	NA	NA	0.48	NA	0.26	0.23	NA	0.27	0.19	0.12	1.57	NA	0.16
	GW Elevation	masl	NA	NA	181.92	NA	183.34	183.27	NA	183.13	183.41	183.29	183.08	NA	183.78

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

Table 2: Summary of Soil Samples Submitted for Chemical Analysis

Borehole ID	Sample No.	Sample Depth (mbgs)	Soil Description	Parameter Analyzed	APEC Investigated
BH22-4	S1	0.0-0.8	Topsoil/Clayey Silt	OCPs, metals, As, Sb, Se, CN-	APEC-1
	DUP-1			OCPs	APEC-1
BH22-5	S1	0.0-1.5	Topsoil/Clayey Silt/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-1
BH22-6	S1	0.0-1.5	Topsoil/Clayey Silt/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-1
	DUP-2			OCPs	APEC-1
BH22-7	S1	0.0-1.5	Topsoil/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-1
BH22-8	S1	0.0-1.5	Topsoil/ Sandy Silt	OCPs, metals, As, Sb, Se, CN-	APEC-1
	DUP-3			OCPs	APEC-1
BH22-9	S1A	0.0-0.8	Topsoil/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-2
BH22-10	S1	0.0-0.8	Topsoil/Sandy Silt	OCPs, metals, As, Sb, Se, CN-	APEC-2
BH22-11	S1	0.0-0.8	Topsoil/Sandy Silt	Metals & ORPs, OCPs	APEC-2, 3
	S2	0.8-1.5	Sandy Silt	PAHs	APEC-3
	DUP-4			PAHs	APEC-3
BH22-12	S1	0.0-1.5	Topsoil/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-2
BH22-13	S1	0-0.6	Topsoil/Clayey Silt/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-2
BH22-14	S1	0.0-1.5	Topsoil/Clayey Silt/Silty Clay	OCPs, metals, As, Sb, Se, CN-	APEC-2
BH22-15	S1	0.0-1.5	Topsoil/Silty Clay	Metals & ORPs, PHCs, VOCs, PAHs	APEC-3

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

Table 3: Summary of APECs Investigated

APEC	Description	PCOCs	Media	Boreholes Within APEC	Samples Analysed	Parameter Analyzed
APEC-1	Based on the 1876 Lincoln and Welland County Atlas, an orchard operated on the southwest portion the Phase One Property.	OCPs, metals, As, Sb, Se, CN-	Soil	BH22-4	S1	OCPs, metals, As, Sb, Se, CN-
					DUP-1	OCPs
				BH22-5	S1	OCPs, metals, As, Sb, Se, CN-
				BH22-6	S1	OCPs, metals, As, Sb, Se, CN-
					DUP-2	OCPs
				BH22-7	S1	OCPs, metals, As, Sb, Se, CN-
				BH22-8	S1	OCPs, metals, As, Sb, Se, CN-
					DUP-3	OCPs
APEC-2	Based on the 1876 Lincoln and Welland County Atlas, an orchard operated on the southern portion southwest portion the Phase One Property at Parcel A.	OCPs, metals, As, Sb, Se, CN-	Soil	BH22-9	S1A	OCPs, metals, As, Sb, Se, CN-
				BH22-10	S1	
				BH22-11	S1	
				BH22-12	S1	
				BH22-13	S1	
				BH22-14	S1	
APEC-3	Based on the aerial photographs and interview, two structures (Former Building B, and C) on the southeast portion of the Site (Parcel A) were demolished circa 1968. It is inferred that fill material may have been used to infill the area where the structures were located.	PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-, HWS, CN-, Cr (VI), Hg, low or high pH, SAR, PAHs	Soil	BH22-11	S1	Metals & ORPs
					S2	PAHs
					DUP-4	PAHs
				BH22-15	S1	Metals & ORPs, PHCs, VOCs, PAHs

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

Table 4: Summary of Metals and ORPs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table 1 SCS	BH22-9 S1A	BH22-10 S1	BH22-11 S1	BH22-12 S1	BH22-13 S1
Date of Collection		04-Mar-22	21-Mar-22	21-Mar-22	04-Mar-22	04-Mar-22
Date Reported		16-Mar-22	30-Mar-22	30-Mar-22	16-Mar-22	16-Mar-22
Sampling Depth (mbgs)		0.0-0.8	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7065724/C274280	R7065724/C274280	R7045867/C258447	R7045867/C258447
Antimony	1	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	11	4.6	2.3	1.8	5	4.1
Barium	210	160	59	35	160	170
Beryllium	2.5	1.1	0.56	0.4	1.2	1.1
Boron (Hot Water Soluble)	NV	-	0.14	0.094	-	-
Cadmium	1	<0.10	<0.10	<0.10	0.11	<0.10
Chromium	67	32	16	11	33	34
Chromium VI	0.66	-	<0.18	<0.18	-	-
Cobalt	19	16	7.2	4.4	17	17
Copper	62	25	11	9.3	26	24
Lead	45	10	8.3	5.8	11	11
Mercury	0.16	-	0.069	<0.050	-	-
Molybdenum	2	0.66	0.66	<0.50	0.55	<0.50
Nickel	37	36	15	9.7	38	40
Selenium	1.2	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	0.5	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1	0.19	0.13	0.065	0.18	0.18
Vanadium	86	42	27	18	47	45
Zinc	290	69	43	24	72	74
pH (pH Units)	NV	-	-	5.66	-	-
Conductivity (ms/cm)	0.47	-	-	0.05	-	-
Sodium Adsorption Ratio	1	-	-	0.47	-	-
Cyanide, Free	0.051	<0.01	<0.01	<0.01	<0.01	<0.01
Boron (Total)	36	13	<5.0	<5.0	11	12
Uranium	1.9	1.1	0.56	0.37	0.87	0.76

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 4: Summary of Metals and ORPs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table 1 SCS	BH22-14 S1	BH22-15 S1
Date of Collection		04-Mar-22	21-Mar-22
Date Reported		16-Mar-22	30-Mar-22
Sampling Depth (mbgs)		0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7065724/C274280
Antimony	1	<0.20	<0.20
Arsenic	11	4.5	3.1
Barium	210	160	81
Beryllium	2.5	1.1	0.68
Boron (Hot Water Soluble)	NV	-	0.14
Cadmium	1	<0.10	0.11
Chromium	67	31	19
Chromium VI	0.66	-	<0.18
Cobalt	19	16	9.4
Copper	62	25	16
Lead	45	11	7.6
Mercury	0.16	-	<0.050
Molybdenum	2	<0.50	0.62
Nickel	37	36	20
Selenium	1.2	<0.50	<0.50
Silver	0.5	<0.20	<0.20
Thallium	1	0.18	0.11
Vanadium	86	42	27
Zinc	290	67	43
pH (pH Units)	NV	-	7.74
Conductivity (ms/cm)	0.47	-	0.47
Sodium Adsorption Ratio	1	-	0.35
Cyanide, Free	0.051	<0.01	<0.01
Boron (Total)	36	13	5.1
Uranium	1.9	0.54	0.47

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 5: Summary of Metals and ORPs in Soil

Parameter	MECP Table 2 SCS	BH22-4 S1	BH22-5 S1	BH22-6 S1	BH22-7 S1	BH22-8 S1
Date of Collection		04-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22
Date Reported		16-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22
Sampling Depth (mbgs)		0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7045867/C258447	R7045867/C258447	R7045867/C258447	R7045867/C258447
Antimony	7.5	0.21	<0.20	<0.20	<0.20	<0.20
Arsenic	18	5.4	3.1	4.6	3.8	3
Barium	390	230	150	160	170	88
Beryllium	4	1.3	0.85	1.1	1.1	0.6
Cadmium	1.2	0.1	<0.10	0.11	<0.10	<0.10
Chromium	160	34	26	32	32	17
Chromium VI	8	-	-	-	-	-
Cobalt	22	17	12	16	19	8.1
Copper	140	27	19	25	25	18
Lead	120	11	8.8	11	12	5.6
Mercury	0.27	-	-	-	-	-
Molybdenum	6.9	0.6	<0.50	0.5	<0.50	<0.50
Nickel	100	38	28	37	37	17
Selenium	2.4	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1	0.18	0.16	0.18	0.16	0.078
Vanadium	86	48	37	43	42	25
Zinc	340	71	56	69	71	40
pH (pH Units)	NV	-	-	-	-	-
Conductivity (ms/cm)	0.7	-	-	-	-	-
Sodium Adsorption Ratio	5	-	-	-	-	
Cyanide, Free	0.051	<0.01	<0.01	<0.01	<0.01	<0.01
Boron (Total)	120	11	8.4	12	11	<5.0
Uranium	23	1.2	0.58	1	0.78	0.58

For Table Notes see **Notes for Soil Summary Tables,**
included at the end of this Section.

Table 6: Summary of PHCs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table 1 SCS	BH22-15 S1
Date of Collection		21-Mar-22
Date Reported		30-Mar-22
Sampling Depth (mbgs)		0.0-1.5
Analytical Report Reference No.		R7065724/C274280
Benzene	0.02	<0.0060
Ethylbenzene	0.05	<0.010
Toluene	0.2	<0.020
Xylenes (Total)	0.05	<0.020
F1 (C6-C10) -BTEX	25	<10
F2 (C10-C16)	10	<10
F3 (C16-C34)	240	<50
F4 (C34-C50)	120	<50

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 7: Summary of VOCs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table 1 SCS	BH22-15 S1
Date of Collection		21-Mar-22
Date Reported		30-Mar-20
Sampling Depth (mbgs)		0.0-1.5
Analytical Report Reference No.		R7065724/C274280
Acetone	0.5	<0.49
Benzene	0.02	<0.0060
Bromodichloromethane	0.05	<0.040
Bromoform	0.05	<0.040
Bromomethane	0.05	<0.040
Carbon Tetrachloride	0.05	<0.040
Chlorobenzene	0.05	<0.040
Chloroform	0.05	<0.040
Dibromochloromethane	0.05	<0.040
1,2-Dichlorobenzene	0.05	<0.040
1,3-Dichlorobenzene	0.05	<0.040
1,4-Dichlorobenzene	0.05	<0.040
1,1-Dichloroethane	0.05	<0.040
1,2-Dichloroethane	0.05	<0.049
1,1-Dichloroethylene	0.05	<0.040
Cis-1,2-Dichloroethylene	0.05	<0.040
Trans-1,2-Dichloroethylene	0.05	<0.040
1,2-Dichloropropane	0.05	<0.040
Ethylbenzene	0.05	<0.010
Ethylene Dibromide	0.05	<0.040
Methyl Ethyl Ketone	0.5	<0.40
Methylene Chloride	0.05	<0.049
Methyl Isobutyl Ketone	0.5	<0.40
Methyl-t-Butyl Ether	0.05	<0.040
Styrene	0.05	<0.040
1,1,1,2-Tetrachloroethane	0.05	<0.040
1,1,2,2-Tetrachloroethane	0.05	<0.040
Toluene	0.2	<0.020
Tetrachloroethylene	0.05	<0.040
1,1,1-Trichloroethane	0.05	<0.040
1,1,2-Trichloroethane	0.05	<0.040
Trichloroethylene	0.05	<0.010
Vinyl Chloride	0.02	<0.019
Total Xylenes	0.05	<0.020
Dichlorodifluoromethane	0.05	<0.040
Hexane(n)	0.05	<0.040
Trichlorofluoromethane	0.05	<0.040
1,3-Dichloropropene (cis + trans)	0.05	<0.050

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 8: Summary of PAHs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table 1 SCS	BH22-11 S2	DUP-4 (BH22-11 S2)	BH22-15 S1
Date of Collection		21-Mar-22	21-Mar-22	21-Mar-22
Date Reported		30-Mar-20	30-Mar-20	30-Mar-20
Sampling Depth (mbgs)		0.8-1.5	0.8-1.5	0.0-1.5
Analytical Report Reference No.		R7065724/C274280	R7065724/C274280	R7065724/C274280
Acenaphthene	0.05	<0.0050	<0.0050	<0.0050
Acenaphthylene	0.093	<0.0050	<0.0050	<0.0050
Anthracene	0.05	<0.0050	<0.0050	<0.0050
Benzo(a)anthracene	0.095	0.03	0.0073	<0.0050
Benzo(a)pyrene	0.05	0.028	0.0067	<0.0050
Benzo(b/j)fluoranthene	0.3	0.04	0.01	<0.0050
Benzo(ghi)perylene	0.2	0.019	<0.0050	<0.0050
Benzo(k)fluoranthene	0.05	0.014	<0.0050	<0.0050
Chrysene	0.18	0.021	0.006	<0.0050
Dibenzo(a,h)anthracene	0.1	<0.0050	<0.0050	<0.0050
Fluoranthene	0.24	0.064	0.017	<0.0050
Fluorene	0.05	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.11	0.021	<0.0050	<0.0050
Naphthalene	0.05	<0.0050	<0.0050	<0.0050
Phenanthrene	0.19	0.015	<0.0050	<0.0050
Pyrene	0.19	0.051	0.013	<0.0050
Methylnaphthalene, 2-(1-)	0.05	<0.0071	<0.0071	<0.0071

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 9: Summary of OCPs & PCBs in Soil - Samples within 30m of an Area of Natural Significance

Parameter	MECP Table1 SCS	BH22-9 S1A	BH22-10 S1	BH22-11 S1	BH22-12 S1	BH22-13 S1	BH22-14 S1
Date of Collection		04-Mar-22	21-Mar-22	21-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22
Date Reported		16-Mar-22	30-Mar-22	30-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22
Screen Interval (mbgs)		0.0-0.8	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7065724/C274280	R7065724/C274280	R7045867/C258447	R7045867/C258447	R7045867/C258447
Aldrin	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Chlordane (total)	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDD (total)	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDE (total)	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDT (total)	0.078	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dieldrin	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Endosulphan	0.04	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Endrin	0.04	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor Epoxide	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Lindane	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Methoxychlor	0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total PCB	0.3	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Hexachlorobenzene	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Hexachlorobutadiene	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Hexachloroethane	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 10: Summary of OCPs & PCBs in Soil

Parameter	MECP Table 2 SCS	BH22-4 S1	DUP-1 (BH22-4 S1)	BH22-5 S1	BH22-6 S1	DUP-2 (BH22-6 S1)	BH22-7 S1
Date of Collection		04-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22	04-Mar-22
Date Reported		16-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22	16-Mar-22
Screen Interval (mbgs)		0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7045867/C258447	R7045867/C258447	R7045867/C258447	R7045867/C258447	R7045867/C258447
Aldrin	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Chlordane (total)	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDD (total)	3.3	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDE (total)	0.26	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
DDT (total)	1.4	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dieldrin	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Endosulphan	0.04	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Endrin	0.04	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor	0.15	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor Epoxide	0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Lindane	0.056	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Methoxychlor	0.13	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total PCB	0.35	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Hexachlorobenzene	0.52	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Hexachlorobutadiene	0.012	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Hexachloroethane	0.089	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 10: Summary of OCPs & PCBs in Soil

Parameter	MECP Table 2 SCS	BH22-8 S1	DUP-3 (BH22-8 S10)
Date of Collection		04-Mar-22	04-Mar-22
Date Reported		16-Mar-22	16-Mar-22
Screen Interval (mbgs)		0.0-1.5	0.0-1.5
Analytical Report Reference No.		R7045867/C258447	R7045867/C258447
Aldrin	0.05	<0.0020	<0.0020
Chlordane (total)	0.05	<0.0020	<0.0020
DDD (total)	3.3	<0.0020	<0.0020
DDE (total)	0.26	<0.0020	<0.0020
DDT (total)	1.4	<0.0020	<0.0020
Dieldrin	0.05	<0.0020	<0.0020
Total Endosulphan	0.04	<0.0020	<0.0020
Endrin	0.04	<0.0020	<0.0020
Heptachlor	0.15	<0.0020	<0.0020
Heptachlor Epoxide	0.05	<0.0020	<0.0020
Lindane	0.056	<0.0020	<0.0020
Methoxychlor	0.13	<0.0050	<0.0050
Total PCB	0.35	<0.015	<0.015
Hexachlorobenzene	0.52	<0.0020	<0.0020
Hexachlorobutadiene	0.012	<0.0020	<0.0020
Hexachloroethane	0.089	<0.0020	<0.0020

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 11: Summary of Maximum Concentrations in Soil - Samples compared to Table 1 SCS

	Parameter	Standard	Maximum Concentration	Location
Metals and ORPs	Antimony	1	<0.20	All Samples
	Arsenic	11	5	BH22-12 S1
	Barium	210	170	BH22-13 S1
	Beryllium	2.5	1.2	BH22-12 S1
	Boron (Hot Water Soluble)	NV	0.14	BH22-10 S1
	Cadmium	1	0.11	BH22-12 S1
	Chromium	67	34	BH22-13 S1
	Chromium VI	0.66	-	All Samples
	Cobalt	19	17	BH22-12 S1
	Copper	62	26	BH22-12 S1
	Lead	45	11	BH22-12 S1
	Mercury	0.16	0.069	BH22-10 S1
	Molybdenum	2	0.66	BH22-9 S1A
	Nickel	37	40	BH22-13 S1
	Selenium	1.2	<0.50	All Samples
	Silver	0.5	<0.20	All Samples
	Thallium	1	0.19	BH22-9 S1A
	Vanadium	86	47	BH22-12 S1
	Zinc	290	74	BH22-13 S1
	pH (pH Units)	NV	7.74	BH22-15 S1
	Conductivity (ms/cm)	0.47	0.47	BH22-15 S1
	Sodium Adsorption Ratio	1	0.47	BH22-11 S1
	Cyanide, Free	0.051	<0.01	All Samples
	Boron (Total)	36	13	BH22-9 S1A
	Uranium	1.9	1.1	BH22-9 S1A
PHCs	Benzene	0.02	<0.0060	All Samples
	Ethylbenzene	0.05	<0.010	All Samples
	Toluene	0.2	<0.020	All Samples
	Xylenes (Total)	0.05	<0.020	All Samples
	F1 (C6-C10) -BTEX	25	<10	All Samples
	F2 (C10-C16)	10	<10	All Samples
	F3 (C16-C34)	240	<50	All Samples
	F4 (C34-C50)	120	<50	All Samples
VOCs	Acetone	0.5	<0.49	All Samples
	Benzene	0.02	<0.0060	All Samples
	Bromodichloromethane	0.05	<0.040	All Samples
	Bromoform	0.05	<0.040	All Samples
	Bromomethane	0.05	<0.040	All Samples
	Carbon Tetrachloride	0.05	<0.040	All Samples
	Chlorobenzene	0.05	<0.040	All Samples
	Chloroform	0.05	<0.040	All Samples
	Dibromochloromethane	0.05	<0.040	All Samples
	1,2-Dichlorobenzene	0.05	<0.040	All Samples

Table 11: Summary of Maximum Concentrations in Soil - Samples compared to Table 1 SCS

	Parameter	Standard	Maximum Concentration	Location
VOCs	1,3-Dichlorobenzene	0.05	<0.040	All Samples
	1,4-Dichlorobenzene	0.05	<0.040	All Samples
	1,1-Dichloroethane	0.05	<0.040	All Samples
	1,2-Dichloroethane	0.05	<0.049	All Samples
	1,1-Dichloroethylene	0.05	<0.040	All Samples
	Cis-1,2-Dichloroethylene	0.05	<0.040	All Samples
	Trans-1,2-Dichloroethylene	0.05	<0.040	All Samples
	1,2-Dichloropropane	0.05	<0.040	All Samples
	Ethylbenzene	0.05	<0.010	All Samples
	Ethylene Dibromide	0.05	<0.040	All Samples
	Methyl Ethyl Ketone	0.5	<0.40	All Samples
	Methylene Chloride	0.05	<0.049	All Samples
	Methyl Isobutyl Ketone	0.5	<0.40	All Samples
	Methyl-t-Butyl Ether	0.05	<0.040	All Samples
	Styrene	0.05	<0.040	All Samples
	1,1,1,2-Tetrachloroethane	0.05	<0.040	All Samples
	1,1,2,2-Tetrachloroethane	0.05	<0.040	All Samples
	Toluene	0.2	<0.020	All Samples
	Tetrachloroethylene	0.05	<0.040	All Samples
	1,1,1-Trichloroethane	0.05	<0.040	All Samples
	1,1,2-Trichloroethane	0.05	<0.040	All Samples
	Trichloroethylene	0.05	<0.010	All Samples
	Vinyl Chloride	0.02	<0.019	All Samples
	Total Xylenes	0.05	<0.020	All Samples
	Dichlorodifluoromethane	0.05	<0.040	All Samples
	Hexane(n)	0.05	<0.040	All Samples
	Trichlorofluoromethane	0.05	<0.040	All Samples
	1,3-Dichloropropene (cis + trans)	0.05	<0.050	All Samples
PAHs	Acenaphthene	0.05	<0.0050	All Samples
	Acenaphthylene	0.093	<0.0050	All Samples
	Anthracene	0.05	<0.0050	All Samples
	Benzo(a)anthracene	0.095	0.03	BH22-11 S2
	Benzo(a)pyrene	0.05	0.028	BH22-11 S2
	Benzo(b/j)fluoranthene	0.3	0.04	BH22-11 S2
	Benzo(ghi)perylene	0.2	0.019	BH22-11 S2
	Benzo(k)fluoranthene	0.05	0.014	BH22-11 S2
	Chrysene	0.18	0.021	BH22-11 S2
	Dibenzo(a,h)anthracene	0.1	<0.0050	All Samples
	Fluoranthene	0.24	0.064	BH22-11 S2
	Fluorene	0.05	<0.0050	All Samples
	Indeno(1,2,3-cd)pyrene	0.11	0.021	BH22-11 S2
	Naphthalene	0.05	<0.0050	All Samples
	Phenanthrene	0.19	0.015	BH22-11 S2
	Pyrene	0.19	0.051	BH22-11 S2
	Methylnaphthalene, 2-(1-)	0.05	<0.0071	All Samples

Table 11: Summary of Maximum Concentrations in Soil - Samples compared to Table 1 SCS

	Parameter	Standard	Maximum Concentration	Location
OCPs & PCBs	Aldrin	0.05	<0.0020	All Samples
	Chlordane (total)	0.05	<0.0020	All Samples
	DDD (total)	0.05	<0.0020	All Samples
	DDE (total)	0.05	<0.0020	All Samples
	DDT (total)	0.078	<0.0020	All Samples
	Dieldrin	0.05	<0.0020	All Samples
	Total Endosulphan	0.04	<0.0020	All Samples
	Endrin	0.04	<0.0020	All Samples
	Heptachlor	0.05	<0.0020	All Samples
	Heptachlor Epoxide	0.05	<0.0020	All Samples
	Lindane	0.01	<0.0020	All Samples
	Methoxychlor	0.05	<0.0050	All Samples
	Total PCB	0.3	<0.015	All Samples
	Hexachlorobenzene	0.01	<0.0020	All Samples
	Hexachlorobutadiene	0.01	<0.0020	All Samples
	Hexachloroethane	0.01	<0.0020	All Samples

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 12: Summary of Maximum Concentrations in Soil - Samples compared to Table 2 SCS

	Parameter	Standard	Maximum Concentration	Location
Metals and ORPs	Antimony	7.5	0.21	BH22-4 S1
	Arsenic	18	5.4	BH22-4 S1
	Barium	390	230	BH22-4 S1
	Beryllium	4	1.3	BH22-4 S1
	Cadmium	1.2	0.11	BH22-6 S1
	Chromium	160	34	BH22-4 S1
	Chromium VI	8	-	All Samples
	Cobalt	22	19	BH22-7 S1
	Copper	140	27	BH22-4 S1
	Lead	120	12	BH22-7 S1
	Mercury	0.27	-	All Samples
	Molybdenum	6.9	0.6	BH22-4 S1
	Nickel	100	38	BH22-4 S1
	Selenium	2.4	<0.50	All Samples
	Silver	20	<0.20	All Samples
	Thallium	1	0.18	BH22-4 S1
	Vanadium	86	48	BH22-4 S1
	Zinc	340	71	BH22-4 S1
	pH (pH Units)	NV	-	All Samples
	Conductivity (ms/cm)	0.7	-	All Samples
	Sodium Adsorption Ratio	5	-	All Samples
	Cyanide, Free	0.051	<0.01	All Samples
	Boron (Total)	120	12	BH22-6 S1
	Uranium	23	1.2	BH22-4 S1
OCPs & PCBs	Aldrin	0.05	<0.0020	All Samples
	Chlordane (total)	0.05	<0.0020	All Samples
	DDD (total)	3.3	<0.0020	All Samples
	DDE (total)	0.26	<0.0020	All Samples
	DDT (total)	1.4	<0.0020	All Samples
	Dieldrin	0.05	<0.0020	All Samples
	Total Endosulphan	0.04	<0.0020	All Samples
	Endrin	0.04	<0.0020	All Samples
	Heptachlor	0.15	<0.0020	All Samples
	Heptachlor Epoxide	0.05	<0.0020	All Samples
	Lindane	0.056	<0.0020	All Samples
	Methoxychlor	0.13	<0.0050	All Samples
	Total PCB	0.35	<0.015	All Samples
	Hexachlorobenzene	0.52	<0.0020	All Samples
	Hexachlorobutadiene	0.012	<0.0020	All Samples
	Hexachloroethane	0.089	<0.0020	All Samples

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Notes for Soil and Groundwater Summary Tables

	For soil and groundwater analytical results, concentration exceeds the applicable Standards.
	For soil and groundwater analytical results, laboratory detection limits exceed the applicable Standards.
masl	Meters above sea level
mbgs	Meters below ground surface
MECP Table 1 SCS	Full Depth Background Site Condition Standards for all property uses other than agricultural as contained in Table 1 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MECP on April 15, 2011.
MECP Table 2 SCS	Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Use with coarse-textured soils. as contained in Table 1 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MECP on April 15, 2011.
NM	Not Monitored
NA	Not Accesible
NI	Not Installed
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
ORPs	Other Regulated Parameters
OCPs	Organochlorine Pesticides
PAH	Polyaromatic Hydrocarbon
PHC	Petroleum Hydrocarbon
Units	Units for all soil analyses are in µg/g (ppm) unless otherwise indicated
Units	Units for all groundwater analyses are in µg/L (ppb) unless otherwise indicated

Appendix A

21-339-302 **February 15, 2022**

Primont Homes
9130 Leslie Street, Suite 301
Richmond Hill, Ontario
L4B 0B9
via email: ian@primont.com

Attention: Ian MacPherson, P.Eng., Vice President Land Development

1. Introduction

DS Consultants Limited (DS) is pleased to present the Sampling and Analysis Plan (SAP) for the proposed Phase Two Environmental Site Assessment for the parcels of land situated in the northeastern quadrant of Quaker Road and First Avenue, Welland and Thorold, ON , (the Site). The purpose of the proposed Phase Two ESA program is to assess the current subsurface environmental conditions in support of the proposed redevelopment of the Site.

The Phase Two ESA will involve intrusive investigation in the areas determined in the Site visit to be Areas of Potential Environmental Concern (APECs), and will be completed in general accordance with O.Reg 153/04. Based on the findings of the field and laboratory analyses, a Phase Two ESA report will be prepared.

2. Background

It is DS's understanding that the Site is a 60.8-hectare (150.23 acres) parcel of land which is currently used for agricultural, residential and commercial purposes. The Phase One Property has been historically used for agricultural and residential purposes circa the mid-1870s. Two (2) houses were historically located on the southeastern portion of the Site (Parcel A) and were demolished circa the late-1960s. In total, ten (10) PCAs were identified on the Phase One Property and within the Phase One Study Area, three (3) of which are considered to be contributing to three (3) APECs in, on, or under the Phase One Property. A summary of the PCAs identified and the associated APECs is provided in Table 2-1 below. Note that the PCA numbers used below are per Table 2, Schedule D of O.Reg. 153/04.

Table 2-1: Summary of APECs Identified on Phase One Property

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on site or off site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC-1	Southwest portion of Parcel C	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large scale application	On Site PCA-1	OCPs, metals, As, Sb, Se, CN-	Soil
APEC-2	Southeast portion of Parcel A	#40 – Pesticides (including herbicides) manufacturing, processing, bulk storage and large-scale application	On Site PCA-2	OCPs, metals, As, Sb, Se, CN-	Soil
APEC-3	Southeast portion of Parcel A	#30 – Importation of Fill Material of Unknown Quality	On Site PCA-6	PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs	Soil

Notes:

1. N/S - not specified in Table 2, Schedule D, of O.Reg. 153/04
2. PHC (F1-F4) = Petroleum Hydrocarbons in the F1-F4 fraction ranges
3. VOCs = Volatile Organic Compounds
4. PAHs = Polycyclic Aromatic Hydrocarbons
5. PCBs = Polychlorinated Biphenyls

3. Site Investigation Program

The proposed field investigation will involve the advancement of boreholes and installation of monitoring wells in selected boreholes. For the Phase Two ESA, DS proposes advancing a total of twelve (12) boreholes across the Site to facilitate the collection of soil samples for chemical analysis. For the additional geotechnical investigation, DS proposes three (3) boreholes to 35 m depth or to competent soils/bedrock, whichever comes first. The geotechnical boreholes will be equipped with 50 mm diameter monitoring wells for long/short term water level measurement. The details of the proposed boreholes and monitoring wells are as follows:

Table 3-1: Summary of Proposed Boreholes and Monitoring Wells

ID	Proposed Depth	Well Installation (Y/N)	Well Install Depth	Purpose
MW22-1	35 mbgs	Yes	35 mbgs	Geotechnical Investigation
MW22-2	35 mbgs	Yes	35 mbgs	Geotechnical Investigation
MW22-3	35 mbgs	Yes	35 mbgs	Geotechnical Investigation
BH22-4 through BH22-8	1.5 mbgs	No	N/A	Environmental Investigation
BH22-9 through BH22-14	1.5 mbgs	No	N/A	Environmental Investigation
BH22-15	3 mbgs	No	N/A	Environmental Investigation

Prior to mobilizing a drilling rig, DS will lay out the proposed boreholes and clear the buried utilities and services by using Ontario One Call System in addition to private utility locates.

The objectives of the Phase Two ESA are:

- To determine the location and concentration of contaminants (if present) in the soil on, in or under the Phase Two Property;
- To obtain information about environmental conditions in the land on, in or under the Phase Two Property; and
- To determine if the applicable site condition standards for contaminants on, in or under the Phase Two Property have been met.

The proposed Phase Two Environmental Site scope of work is based the preliminary results of a Phase One ESA.

The proposed Phase Two ESA involves the following principal tasks, which will be completed in conjunction with the proposed geotechnical investigation:

- Retain the services of public and private utility locaters to identify the locations of buried and overhead utility services prior to any excavation or demolition activities;
    - Certain underground utilities (such as those constructed or encased in plastic, fibreglass, clay, concrete pipe, untraceable cast iron, steel, and/or repaired services) cannot be traced by standard locating practices. DS will review all available Site Plans and/or "As Built" figures in an attempt to identify the locations of potential untraceable services. DS will not be held responsible for any damages to utility services that are not on the figures provided or cannot be located by standard utility locating practices;
- The proposed boreholes will be used to facilitate the collection of soil samples for chemical analysis. All soil samples recovered during the proposed drilling activities will be field screened for visual and olfactory evidence of deleterious impacts and for the presence of petroleum hydrocarbon (PHC) and volatile organic compound (VOC) derived

vapours using either a combustible gas detector (CGD) calibrated to hexane, or a photo-ionization detector (PID) calibrated to isobutylene or equivalent;

- Submit soil samples from the newly advanced boreholes to a CALA accredited laboratory for the following analyses:

Table 3-2: Summary of Proposed Analytical Testing

Soil
• 2 Sample for analysis of metals and inorganics • 10 Samples for analysis of metals, As, Se, Sb, CN- • 11 Samples for analysis of OCPs • 1 Sample for PHCs • 1 Sample for VOCs • 2 Sample for PAHs

- A Quality Assurance and Quality Control (QAQC) program will be implemented, involving the collection and analysis of duplicate soil samples and trip blanks at the frequency specified under O.Reg. 153/04 (as amended);
- A Phase Two ESA Report will be prepared upon receipt of all analytical results. The Phase Two ESA Report will be completed in general accordance with O.Reg. 153/04 (as amended).

It should be noted that drilling activities may result in some disturbance to the ground surface at the site. Precautions will be taken by the drilling contractor to minimize any damage. The Client will be notified should there be cause to extend the borehole termination depth based on field observations. It is assumed that the site can be accessed at our convenience, during regular business hours. Prior notice will be sent to the client and site representative.

It is noted that if the Phase Two ESA reveals parameter concentrations greater than the applicable standards set out in *Ontario Regulation 153/04,* then additional work (i.e., supplemental delineation, additional drilling, sampling, analysis, and/or site remediation activities) will be deemed necessary prior to RSC filing, should an RSC be required. The costs for any additional work, if necessary, are beyond the current scope of work.

The SAP was created based on the request to complete a Phase Two ESA in support of the proposed redevelopment of the Site. The SAP was compiled to collect data to provide information on soil and/or groundwater quality in each APEC.

Additional delineation may be required following the implementation of this SAP to meet the requirements of O.Reg. 153/04 which requires delineation of all areas where concentrations are above the applicable SCS such as in the following conditions:

- Unexpected contamination not previously discovered, or not related to identified APECs, is discovered which will require further delineation to identify source(s); and

- If the sampling results indicate that the soil and/or groundwater impacts are deeper than initially expected.

4. Closure

We trust that this Sampling and Analysis Plan meets the objectives of the Client. If further assistance is required on this matter please do not hesitate to contact the undersigned.

Yours Very Truly,

DS Consultants Limited

Prepared by:

John Gaviria-Ballen, B.Eng., EIT
Assistant Project Manager - Environmental

Appendix B

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-4

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764756.459 E 641235.411

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 4

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.1													
~~184.0~~ 0.1	**TOPSOIL:** 80mm						184						
	CLAYEY SILT: disturbed/reworked, trace gravel, some rootlets brown, moist												Metals, AS, Se, Sb, CN-, OCPs
183.3			1	S									
0.8	**SILTY CLAY:** trace gravel, brown, moist												
							183						
182.6													
1.5	**END OF BOREHOLE**												
	Notes: Borehole backfilled with bentonite upon completion.												

DS ENVIRO 0-50 PPM-2016 22-339-302 QUAKER RD AND FIRST AV - ENV.2022.GPJ DS.GDT 3/29/22

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-5

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764786.624 E 641236.481

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 5

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.1													
184.0	**TOPSOIL:** 150mm						184						Metals, AS, Se, Sb, CN-, OCPs
0.2	**SANDY SILT:**disturbed/reworked, trace rootlets, very moist, brown		1	S									
182.9							183						
1.2	**CLAYEY SILT:**brown, moist												
182.6													
1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

DS ENVIRO 0-50 PPM-2016 22-339-302 QUAKER RD AND FIRST AV - ENV.2022.GPJ DS.GDT 3/29/22

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES $+^3$, $\times^3$: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

DS CONSULTANTS LTD.
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LOG OF BOREHOLE BH22-6

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764837.85 E 641198.387

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 6

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.4													
184.3 / 0.1	**TOPSOIL:** 50mm **SANDY SILT:** disturbed/reworked, trace rootlets, trace gravel very moist, brown		1	S			184						Metals, AS, Se, Sb, CN-, OCPs
183.0 / 1.5	**CLAYEY SILT:** brown, trace rootlets, very moist						183						
	END OF BOREHOLE Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

DS ENVIRO 0-50 PPM-2016 22-339-302 QUAKER RD AND FIRST AV - ENV.2022.GPJ DS.GDT 3/29/22

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LOG OF BOREHOLE BH22-7

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764874.563 E 641219.756

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 7

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.8													
183.7 0.1	**TOPSOIL:** 50mm **SILTY CLAY:**bdisturbed/reworked, trace gravel, brown to grey, moist		1	S			183						Metals, AS, Se, Sb, CN-, OCPs
182.3 1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +³, ×³: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-8

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764869.594 E 641250.96

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 8

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.3													
184.2 / 0.1	**TOPSOIL:** 50mm												
	SANDY SILT: disturbed/reworked, some silty clay, trave gravel, brown to grey, mosit to very moist		1	S			184						Metals, AS, Se, Sb, CN-, OCPs
182.8 / 1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.						183						

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: + 3, × 3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-9

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764774.323 E 641503.202

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 9

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.8													
183.7 / 0.1	**TOPSOIL:** 50mm												
	SILTY CLAY:disturbed/reworked, brown, moist		1	S									Metals, AS, Se, Sb, CN-, OCPs
	very moist, trace rootlets, trace gravel at 0.2 m						183						
182.3 / 1.5			2	S									
	END OF BOREHOLE												
	Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-10

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764811.019 E 641531.152

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/21/2022

REF. NO.: 22-339-3.2
ENCL NO.: 10

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.6													
183.4 / 0.2	**TOPSOIL**: 150mm												
	SANDY SILT TO SILTY CLAY: disturbed/reworked, moist to very moist		1	S			183						Metals, AS, Se, Sb, CN-, OCPs
182.1			2	S									
1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-11

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764847.042 E 641534.634

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/21/2022

REF. NO.: 22-339-3.2
ENCL NO.: 11

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors: PID (ppm)	Soil Head Space Vapors: CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT; WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.1													
184.0	**TOPSOIL**: 150mm						184						
0.2	**SANDY SILT**: disturbed/reworked, trace gravel, wet, brown		1	S									Metals& ORPs, OCPs
1			2	S			183						
182.6													
1.5	**SILTY CLAY:** trace gravel, moist, brown, firm		3	S			182						
2			4	S									PAHs DUP-4(PAHs)
181.1													
3.0	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

PID (ppm): 10 20 30 40
CGD (ppm): 10 20 30 40
WATER CONTENT (%): 10 20 30

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-12

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764812.067 E 641646.401

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 12

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.5													
183.4 / 0.1	**TOPSOIL:** 100mm												
	SILTY CLAY TO CLAYEY SILT: disturbed/reworked, trace gravel, brown, moist trace rootlets at 0.3 m		1	S			183						Metals, AS, Se, Sb, CN-
182.0							182						
1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-13

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764781.411 E 641556.103

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 13

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.9													
183.8 / 0.1	**TOPSOIL:** 100mm												
	SANDY SILT:disturbed/reworked, trace gravel, brown, moist to very moist		1	S			183						Metals, AS, Se, Sb, CN-, OCPs
183.1 / 0.8	**CLAYEY SILT:**trace gravel, brown to grey												
182.4 / 1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES + 3, × 3: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-14

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764790.92 E 641601.907

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/04/2022

REF. NO.: 22-339-3.2
ENCL NO.: 14

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.6													
183.6 / 0.0	**TOPSOIL:** 76mm												
0.1	**CLAYEY SILT TO SILTY CLAY:** disturbed/reworked, trace rootlets, trace gravel, brown, moist to very moist		1	S			183						Metals, AS, Se, Sb, CN-, OCPs
182.1 / 1.5	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^{3}$, $\times^{3}$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-15

PROJECT: Phase Two Environmental Site Assessment
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764878.434 E 641569.229

DRILLING DATA
Method: Direct Push
Diameter:
Date: Mar/21/2022

REF. NO.: 22-339-3.2
ENCL NO.: 15

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm)	Soil Head Space Vapors CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (w_P w w_L) WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.5													
183.3 / 0.0	**TOPSOIL**: 150mm												
0.2	**SANDY SILT**: disturbed/reworked, trace rootlets, trace gravel, wet, brown		1	S			183						Metals & ORPS, PHCs, VOCs, PAHs
182.7													
0.8	**SILTY CLAY:** trace gravel, trace rootlet, moist, brown		2	S			182						
			3	S									
			4	S			181						
180.5													
3.0	**END OF BOREHOLE** Notes: Borehole backfilled with bentonite upon completion.												

PID (ppm) scale: 10 20 30 40
CGD (ppm) scale: 10 20 30 40
WATER CONTENT (%) scale: 10 20 30

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-1

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.186 E 641719.196

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/08/2022

REF. NO.: 22-339-3.2
ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	NUMBER	TYPE	BLOWS 0.3 m "N"	ELEVATION	Remarks
184.6						
0.0 / 184.2	**TOPSOIL**: 350 mm	1	SS	11		
0.4 / 183.9	**CLAYEY SILT:** disturbed/reworked, trace sand, brown, moist, firm				184	
0.8 / 183.1	**SILT TILL:** red, moist, firm	2	SS	41		
1.5 / 182.3	**CLAYEY SILT TILL:** red, moist, firm	3	SS	33	183	WL 183.1 masl Mar 25, 2022
2.3	**SILTY SAND:** red, moist, firm	4	SS	40	182	
		5	SS	67		
	moist to wet at 4.6 m	6	SS	39	181	
	wet, firm to loose at 6.1 m	7	SS	31	180	
		8	SS	33	179	
	trace clay, red wet loose at 9.1 m	9	SS	17	178	
		10	SS	28	177	
	red to brown, wet, firm to loose at 12.2 m	11	SS	20	176	
		12	SS	19	175	
					174	
					173	
					172	
					171	
					170	

Soil Head Space Vapors: PID (ppm) 10 20 30 40; CGD (ppm) 10 20 30 40

PLASTIC LIMIT w_P — NATURAL MOISTURE CONTENT w — LIQUID LIMIT w_L; WATER CONTENT (%) 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

Continued Next Page

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-1

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.186 E 641719.196

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/08/2022

REF. NO.: 22-339-3.2
ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
169.4													
15.2	**SILT:**grey, wet, loose		13	SS	20		169						
16													
			14	SS	25		168						
17													
							167						
18													
166.3													
18.3	**CLAYEY SILT TILL:** grey, wet, loose		15	SS	20		166						
19													
			16	SS	19		165						
20													
							164						
21													
	wet and firm at 21.3 m		17	SS	40		163						
22													
							162						
23			18	SS	50/ 125mm								
							161						
24													
160.2													
24.4	**CLAYEY SILT:** red to brown, wet, hard						160						
25													
							159						
26													
							158						
27													
157.2													
27.4	**SILT:** brown, wet, loose to firm		19	SS	50/ / 125mm		157						
28													
							156						
29													
30							155						

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GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε_f=3% Strain at Failure

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LOG OF BOREHOLE BH22-1

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.186 E 641719.196

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/08/2022

REF. NO.: 22-339-3.2
ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
154.1	**SILT:** brown, wet, loose to firm(Continued)												
30.5	**SILTY CLAY TILL:** brown, moist, hard		20	SS	47		154						
31													
							153						
32													
							152						
33													
			21	SS	69		151						
34													
							150						
35	wet at 35 m												
149.0			22	SS	69								
35.6	**END OF BOREHOLE** Notes: 1) 50 mm dia. monitoring well installed at 6.10 mbgs upon completion. 2) Water Levels Readings: Date — Water Level (mbgs) Mar. 25, 2022 — 1.57												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^{3}$, $\times^{3}$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-2

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764764.336 E 641340.276

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/02/2022

REF. NO.: 22-339-3.2
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm)	Soil Head Space Vapors CGD (ppm)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
183.4								10 20 30 40	10 20 30 40	10 20 30			
0.0 / 183.0	**TOPSOIL**: 400 mm		1	SS	3		183						
0.4	**SILTY CLAY:**disturbed/reworked, brown, moist, loose												
1	dry and hard at 0.75 m		2	SS	17		182						
2 / 181.1			3	SS	20								
2.3	**SILTY CLAY TILL:** brown to red, dry to moist, loose		4	SS	12		181						
3	brown to grey, moist at 3.0 m		5	SS	9		180						
4 / 178.8							179						
4.6	**SILTY CLAY:** grey, wet, loose		6	SS	4								
5							178						
6			7	SS	4		177						
7 / 175.8													
7.6	**SILT:** some sand, brown to red, wet, loose	× × × × × × × × × ×	8	SS	8		176						
8							175						
9 / 174.2													
9.1	**SANDY SILT TO SILTY CLAY:** red, wet		9	SS	4		174						
10													
11			10	SS	5		173						
12 / 171.2							172						
12.2	**SILTY CLAY:** grey, wet, loose		11	SS	8		171						
13 / 169.7													
13.7	**SILT TILL:** some sand, brown to red, moist		12	SS	15		170						
14							169						
15													

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GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε_f=3% Strain at Failure

LOG OF BOREHOLE BH22-2

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764764.336 E 641340.276

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/02/2022

REF. NO.: 22-339-3.2
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm)	CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT w_P w w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
	SILT TILL: some sand, brown to red, moist(Continued)		13	SS	16		168						
16							167						
			14	SS	23		166						
18							165						
			15	SS	31		164						
20	hard at 19.8 m		16	SS	54		163						
21							162						
			17	SS	55		161						
23	some clay at 22.85 m		18	SS	37		160						
24							159						
			19	SS	43		158						
26			20	SS	46		157						
27							156						
			21	SS	25		155						
29	154.4												
	29.0 **CLAYEY SILT**: brown to red, moist, hard		22	SS	18		154						
30													

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GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

LOG OF BOREHOLE BH22-2

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4764764.336 E 641340.276

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/02/2022

REF. NO.: 22-339-3.2
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
152.9	**CLAYEY SILT**: brown to red, moist, hard(Continued)						153						
30.5	**CLAYEY SILT TILL**: brown to red, moist, hard		23	SS	28								
31							152						
151.4													
32.0	**SILTY CLAY TILL**brown to grey, wet and hard		24	SS	25		151						
33													
			25	SS	39		150						
34													
							149						
35	some sand, moist at 35 m												
147.8			26	SS	33		148						
35.6	**END OF BOREHOLE** Notes: 1) 50 mm dia. monitoring well installed at 6.10 mbgs upon completion. 2) Water Levels Readings: Date — Water Level (mbgs) Mar. 25, 2022 — Not Accessible												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^{3}$, $\times^{3}$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-3

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.212 E 641719.246

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/03/2022

REF. NO.: 22-339-3.2
ENCL NO.: 3

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm)	CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (w_P w w_L) WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
184.7													
0.0			1	SS									
183.9													
0.8	**SILTY CLAY:** disturbed/reworked, brown, some gravel, moist, firm, some sand		2	SS	10								
	brown to red at 1.5 m		3	SS	22								
			4	SS	21								
			5	SS	11								
	grey, wet, loose at 4.6 m		6	SS	7								
	some sand at 7.6 m		7	SS	2								
174.0													
10.7	**SANDY SILT:** red to brown, wet		8	SS	6								
	moist at 12.2 m		9	SS	19								
171.0													
13.7	**SILT:** red to brown, moist, hard, trace gravel		10	SS	23								

W. L. 184.5 masl
Mar 25, 2022

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GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-3

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.212 E 641719.246

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/03/2022

REF. NO.: 22-339-3.2
ENCL NO.: 3

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
169.4													
15.2	**CLAYEY SILT:** red to brown, moist, hard, some sand		11	SS	14		169						
16													
			12	SS	27		168						
17													
18							167						
166.4													
18.3	**SANDY SILT TO SILTY SAND:** red to brown, moist, hard, some sand		13	SS	68		166						
19													
			14	SS	81		165						
20	red to brown, moist to wet at 19.8 m												
21							164						
			15	SS	77		163						
22													
23							162						
24							161						
160.3													
24.4	**SILT TILL:** brown, moist, hard		16	SS	64		160						
25													
26							159						
27							158						
157.3													
27.4	**SILT:** some sand, trace clay, brown to red, moist and hard		17	SS	59		157						
28													
29							156						
30							155						

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GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε_f=3% Strain at Failure

LOG OF BOREHOLE BH22-3

PROJECT: Preliminary Geotechnical Investigation
CLIENT: Primont Homes
PROJECT LOCATION: Quaker Road and First Avenue, Welland, ON
DATUM: Geodetic
LOCATION: See Figure 5 N 4765399.212 E 641719.246

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200 mm
Date: Mar/03/2022

REF. NO.: 22-339-3.2
ENCL NO.: 3

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 10 20 30 40	Soil Head Space Vapors CGD (ppm) 10 20 30 40	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	Remarks
	SILT: some sand, trace clay, brown to red, moist and hard(Continued)												
			18	SS	61		154						
31													
							153						
32													
							152						
33													
151.2													
33.5	**SILTY CLAY TO CLAYEY SILT TILL:** brown, moist, hard		25	SS	18		151						
34													
							150						
35													
149.1			26	SS	38								
35.6	**END OF BOREHOLE** Notes: 1) 50 mm dia. monitoring well installed at 6.10 mbgs upon completion. 2) Water Levels Readings: Date — Water Level (mbgs) Mar. 25, 2022 — 0.15												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +³, ×³: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

Appendix C

Your Project #: 21-339-302
Your C.O.C. #: 868121-01-01, 868121-02-01

Attention: John Gaviria-Ballen

DS Consultants Limited
6221 Highway 7, Unit 16
Vaughan, ON
CANADA L4H 0K8

Report Date: 2022/03/16
Report #: R7045867
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C258447
Received: 2022/03/04, 18:28

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Free (WAD) Cyanide	9	2022/03/08	2022/03/09	CAM SOP-00457	OMOE E3015 m
Acid Extractable Metals by ICPMS	9	2022/03/08	2022/03/10	CAM SOP-00447	EPA 6020B m
Moisture	12	N/A	2022/03/05	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (1)	1	2022/03/14	2022/03/15	CAM SOP-00307	SW846 8081, 8082
OC Pesticides (Selected) & PCB (1)	2	2022/03/08	2022/03/10	CAM SOP-00307	SW846 8081, 8082
OC Pesticides (Selected) & PCB (1)	9	2022/03/09	2022/03/10	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	12	N/A	2022/03/07	CAM SOP-00307	EPA 8081/8082 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Your Project #: 21-339-302
Your C.O.C. #: 868121-01-01, 868121-02-01

Attention: John Gaviria-Ballen

DS Consultants Limited
6221 Highway 7, Unit 16
Vaughan, ON
CANADA L4H 0K8

Report Date: 2022/03/16
Report #: R7045867
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C258447
Received: 2022/03/04, 18:28

Encryption Key

Bureau Veritas
16 Mar 2022 16:33:54

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ashton Gibson, Project Manager
Email: Ashton.Gibson@bureauveritas.com
Phone# (905)817-5765

==========

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For Service Group specific validation please refer to the Validation Signature Page.

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O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID				RZZ230	RZZ231	RZZ232	RZZ233		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-4 S1	BH22-5 S1	BH22-6 S1	BH22-7 S1	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	1.3	7.5	0.21	<0.20	<0.20	<0.20	0.20	7869778
Acid Extractable Arsenic (As)	ug/g	18	18	5.4	3.1	4.6	3.8	1.0	7869778
Acid Extractable Barium (Ba)	ug/g	220	390	**230**	150	160	170	0.50	7869778
Acid Extractable Beryllium (Be)	ug/g	2.5	4	1.3	0.85	1.1	1.1	0.20	7869778
Acid Extractable Boron (B)	ug/g	36	120	11	8.4	12	11	5.0	7869778
Acid Extractable Cadmium (Cd)	ug/g	1.2	1.2	0.10	<0.10	0.11	<0.10	0.10	7869778
Acid Extractable Chromium (Cr)	ug/g	70	160	34	26	32	32	1.0	7869778
Acid Extractable Cobalt (Co)	ug/g	21	22	17	12	16	19	0.10	7869778
Acid Extractable Copper (Cu)	ug/g	92	140	27	19	25	25	0.50	7869778
Acid Extractable Lead (Pb)	ug/g	120	120	11	8.8	11	12	1.0	7869778
Acid Extractable Molybdenum (Mo)	ug/g	2	6.9	0.60	<0.50	0.50	<0.50	0.50	7869778
Acid Extractable Nickel (Ni)	ug/g	82	100	38	28	37	37	0.50	7869778
Acid Extractable Selenium (Se)	ug/g	1.5	2.4	<0.50	<0.50	<0.50	<0.50	0.50	7869778
Acid Extractable Silver (Ag)	ug/g	0.5	20	<0.20	<0.20	<0.20	<0.20	0.20	7869778
Acid Extractable Thallium (Tl)	ug/g	1	1	0.18	0.16	0.18	0.16	0.050	7869778
Acid Extractable Uranium (U)	ug/g	2.5	23	1.2	0.58	1.0	0.78	0.050	7869778
Acid Extractable Vanadium (V)	ug/g	86	86	48	37	43	42	5.0	7869778
Acid Extractable Zinc (Zn)	ug/g	290	340	71	56	69	71	5.0	7869778

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID				RZZ234	RZZ235	RZZ237	RZZ238		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-8 S1	BH22-9 S1A	BH22-12 S1	BH22-13 S1	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	1.3	7.5	<0.20	<0.20	<0.20	<0.20	0.20	7869778
Acid Extractable Arsenic (As)	ug/g	18	18	3.0	4.6	5.0	4.1	1.0	7869778
Acid Extractable Barium (Ba)	ug/g	220	390	88	160	160	170	0.50	7869778
Acid Extractable Beryllium (Be)	ug/g	2.5	4	0.60	1.1	1.2	1.1	0.20	7869778
Acid Extractable Boron (B)	ug/g	36	120	<5.0	13	11	12	5.0	7869778
Acid Extractable Cadmium (Cd)	ug/g	1.2	1.2	<0.10	<0.10	0.11	<0.10	0.10	7869778
Acid Extractable Chromium (Cr)	ug/g	70	160	17	32	33	34	1.0	7869778
Acid Extractable Cobalt (Co)	ug/g	21	22	8.1	16	17	17	0.10	7869778
Acid Extractable Copper (Cu)	ug/g	92	140	18	25	26	24	0.50	7869778
Acid Extractable Lead (Pb)	ug/g	120	120	5.6	10	11	11	1.0	7869778
Acid Extractable Molybdenum (Mo)	ug/g	2	6.9	<0.50	0.66	0.55	<0.50	0.50	7869778
Acid Extractable Nickel (Ni)	ug/g	82	100	17	36	38	40	0.50	7869778
Acid Extractable Selenium (Se)	ug/g	1.5	2.4	<0.50	<0.50	<0.50	<0.50	0.50	7869778
Acid Extractable Silver (Ag)	ug/g	0.5	20	<0.20	<0.20	<0.20	<0.20	0.20	7869778
Acid Extractable Thallium (Tl)	ug/g	1	1	0.078	0.19	0.18	0.18	0.050	7869778
Acid Extractable Uranium (U)	ug/g	2.5	23	0.58	1.1	0.87	0.76	0.050	7869778
Acid Extractable Vanadium (V)	ug/g	86	86	25	42	47	45	5.0	7869778
Acid Extractable Zinc (Zn)	ug/g	290	340	40	69	72	74	5.0	7869778

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID				RZZ239		
Sampling Date				2022/03/04		
COC Number				868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-14 S1	RDL	QC Batch
Metals						
Acid Extractable Antimony (Sb)	ug/g	1.3	7.5	<0.20	0.20	7869778
Acid Extractable Arsenic (As)	ug/g	18	18	4.5	1.0	7869778
Acid Extractable Barium (Ba)	ug/g	220	390	160	0.50	7869778
Acid Extractable Beryllium (Be)	ug/g	2.5	4	1.1	0.20	7869778
Acid Extractable Boron (B)	ug/g	36	120	13	5.0	7869778
Acid Extractable Cadmium (Cd)	ug/g	1.2	1.2	<0.10	0.10	7869778
Acid Extractable Chromium (Cr)	ug/g	70	160	31	1.0	7869778
Acid Extractable Cobalt (Co)	ug/g	21	22	16	0.10	7869778
Acid Extractable Copper (Cu)	ug/g	92	140	25	0.50	7869778
Acid Extractable Lead (Pb)	ug/g	120	120	11	1.0	7869778
Acid Extractable Molybdenum (Mo)	ug/g	2	6.9	<0.50	0.50	7869778
Acid Extractable Nickel (Ni)	ug/g	82	100	36	0.50	7869778
Acid Extractable Selenium (Se)	ug/g	1.5	2.4	<0.50	0.50	7869778
Acid Extractable Silver (Ag)	ug/g	0.5	20	<0.20	0.20	7869778
Acid Extractable Thallium (Tl)	ug/g	1	1	0.18	0.050	7869778
Acid Extractable Uranium (U)	ug/g	2.5	23	0.54	0.050	7869778
Acid Extractable Vanadium (V)	ug/g	86	86	42	5.0	7869778
Acid Extractable Zinc (Zn)	ug/g	290	340	67	5.0	7869778

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ230	RZZ231	RZZ232	RZZ233		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-4 S1	BH22-5 S1	BH22-6 S1	BH22-7 S1	RDL	QC Batch
Inorganics									
Moisture	%	-	-	21	19	20	22	1.0	7866788
Calculated Parameters									
Chlordane (Total)	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDD + p,p-DDD	ug/g	-	3.3	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDE + p,p-DDE	ug/g	-	0.26	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDT + p,p-DDT	ug/g	-	1.4	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
Total Endosulfan	ug/g	-	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
Total PCB	ug/g	0.3	0.35	<0.015	<0.015	<0.015	<0.015	0.015	7866594
Pesticides & Herbicides									
Aldrin	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
a-Chlordane	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
g-Chlordane	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDD	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDD	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDE	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDE	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDT	ug/g	1.4	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDT	ug/g	1.4	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Dieldrin	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Lindane	ug/g	0.01	0.056	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endosulfan I (alpha)	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endosulfan II (beta)	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endrin	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Heptachlor	ug/g	0.05	0.15	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Heptachlor epoxide	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Hexachlorobenzene	ug/g	0.01	0.52	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ230	RZZ231	RZZ232	RZZ233		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-4 S1	BH22-5 S1	BH22-6 S1	BH22-7 S1	RDL	QC Batch
Hexachlorobutadiene	ug/g	0.01	0.012	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Hexachloroethane	ug/g	0.01	0.089	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Methoxychlor	ug/g	0.05	0.13	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7872443
Aroclor 1242	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1248	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1254	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1260	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	-	-	91	85	50	80		7872443
Decachlorobiphenyl	%	-	-	114	111	235 (1)	96		7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
(1) The recovery was above the upper control limit. This may represent a high bias in some results for flagged analytes. For results that were not detected (ND), this potential bias has no impact.

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ234			RZZ234		
Sampling Date				2022/03/04			2022/03/04		
COC Number				868121-01-01			868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-8 S1	RDL	QC Batch	BH22-8 S1 Lab-Dup	RDL	QC Batch
Inorganics									
Moisture	%	-	-	19	1.0	7866788			
Calculated Parameters									
Chlordane (Total)	ug/g	0.05	0.05	<0.0020	0.0020	7866594			
o,p-DDD + p,p-DDD	ug/g	-	3.3	<0.0020	0.0020	7866594			
o,p-DDE + p,p-DDE	ug/g	-	0.26	<0.0020	0.0020	7866594			
o,p-DDT + p,p-DDT	ug/g	-	1.4	<0.0020	0.0020	7866594			
Total Endosulfan	ug/g	-	-	<0.0020	0.0020	7866594			
Total PCB	ug/g	0.3	0.35	<0.015	0.015	7866594			
Pesticides & Herbicides									
Aldrin	ug/g	0.05	0.05	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
a-Chlordane	ug/g	0.05	0.05	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
g-Chlordane	ug/g	0.05	0.05	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
o,p-DDD	ug/g	0.05	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
p,p-DDD	ug/g	0.05	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
o,p-DDE	ug/g	0.05	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
p,p-DDE	ug/g	0.05	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
o,p-DDT	ug/g	1.4	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
p,p-DDT	ug/g	1.4	-	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Dieldrin	ug/g	0.05	0.05	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Lindane	ug/g	0.01	0.056	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Endosulfan I (alpha)	ug/g	0.04	0.04	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Endosulfan II (beta)	ug/g	0.04	0.04	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Endrin	ug/g	0.04	0.04	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Heptachlor	ug/g	0.05	0.15	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Heptachlor epoxide	ug/g	0.05	0.05	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ234			RZZ234		
Sampling Date				2022/03/04			2022/03/04		
COC Number				868121-01-01			868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-8 S1	RDL	QC Batch	BH22-8 S1 Lab-Dup	RDL	QC Batch
Hexachlorobenzene	ug/g	0.01	0.52	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Hexachlorobutadiene	ug/g	0.01	0.012	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Hexachloroethane	ug/g	0.01	0.089	<0.0020	0.0020	7872443	<0.0020	0.0020	7872443
Methoxychlor	ug/g	0.05	0.13	<0.0050	0.0050	7872443	<0.0050	0.0050	7872443
Aroclor 1242	ug/g	-	-	<0.015	0.015	7872443	<0.015	0.015	7872443
Aroclor 1248	ug/g	-	-	<0.015	0.015	7872443	<0.015	0.015	7872443
Aroclor 1254	ug/g	-	-	<0.015	0.015	7872443	<0.015	0.015	7872443
Aroclor 1260	ug/g	-	-	<0.015	0.015	7872443	<0.015	0.015	7872443
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	-	-	91		7872443	82		7872443
Decachlorobiphenyl	%	-	-	115		7872443	108		7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ235	RZZ237	RZZ238	RZZ239		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-9 S1A	BH22-12 S1	BH22-13 S1	BH22-14 S1	RDL	QC Batch
Inorganics									
Moisture	%	-	-	19	21	22	20	1.0	7866788
Calculated Parameters									
Chlordane (Total)	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDD + p,p-DDD	ug/g	-	3.3	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDE + p,p-DDE	ug/g	-	0.26	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
o,p-DDT + p,p-DDT	ug/g	-	1.4	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
Total Endosulfan	ug/g	-	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7866594
Total PCB	ug/g	0.3	0.35	<0.015	<0.015	<0.015	<0.015	0.015	7866594
Pesticides & Herbicides									
Aldrin	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
a-Chlordane	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
g-Chlordane	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDD	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDD	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDE	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDE	ug/g	0.05	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
o,p-DDT	ug/g	1.4	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
p,p-DDT	ug/g	1.4	-	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Dieldrin	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Lindane	ug/g	0.01	0.056	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endosulfan I (alpha)	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endosulfan II (beta)	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Endrin	ug/g	0.04	0.04	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Heptachlor	ug/g	0.05	0.15	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Heptachlor epoxide	ug/g	0.05	0.05	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Hexachlorobenzene	ug/g	0.01	0.52	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ235	RZZ237	RZZ238	RZZ239		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-9 S1A	BH22-12 S1	BH22-13 S1	BH22-14 S1	RDL	QC Batch
Hexachlorobutadiene	ug/g	0.01	0.012	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Hexachloroethane	ug/g	0.01	0.089	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7872443
Methoxychlor	ug/g	0.05	0.13	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7872443
Aroclor 1242	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1248	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1254	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Aroclor 1260	ug/g	-	-	<0.015	<0.015	<0.015	<0.015	0.015	7872443
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	-	-	75	84	80	75		7872443
Decachlorobiphenyl	%	-	-	104	118	119	116		7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ240		RZZ241		RZZ242		
Sampling Date				2022/03/04		2022/03/04		2022/03/04		
COC Number				868121-02-01		868121-02-01		868121-02-01		
	UNITS	Criteria	Criteria-2	DUP-1	QC Batch	DUP-2	QC Batch	DUP-3	RDL	QC Batch
Inorganics										
Moisture	%	-	-	21	7866788	20	7866788	18	1.0	7866788
Calculated Parameters										
Chlordane (Total)	ug/g	0.05	0.05	<0.0020	7866594	<0.0020	7866594	<0.0020	0.0020	7866594
o,p-DDD + p,p-DDD	ug/g	-	3.3	<0.0020	7866594	<0.0020	7866594	<0.0020	0.0020	7866594
o,p-DDE + p,p-DDE	ug/g	-	0.26	<0.0020	7866594	<0.0020	7866594	<0.0020	0.0020	7866594
o,p-DDT + p,p-DDT	ug/g	-	1.4	<0.0020	7866594	<0.0020	7866594	<0.0020	0.0020	7866594
Total Endosulfan	ug/g	-	-	<0.0020	7866594	<0.0020	7866594	<0.0020	0.0020	7866594
Total PCB	ug/g	0.3	0.35	<0.015	7866594	<0.015	7866594	<0.015	0.015	7866594
Pesticides & Herbicides										
Aldrin	ug/g	0.05	0.05	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
a-Chlordane	ug/g	0.05	0.05	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
g-Chlordane	ug/g	0.05	0.05	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
o,p-DDD	ug/g	0.05	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
p,p-DDD	ug/g	0.05	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
o,p-DDE	ug/g	0.05	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
p,p-DDE	ug/g	0.05	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
o,p-DDT	ug/g	1.4	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
p,p-DDT	ug/g	1.4	-	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Dieldrin	ug/g	0.05	0.05	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Lindane	ug/g	0.01	0.056	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Endosulfan I (alpha)	ug/g	0.04	0.04	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Endosulfan II (beta)	ug/g	0.04	0.04	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Endrin	ug/g	0.04	0.04	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Heptachlor	ug/g	0.05	0.15	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Heptachlor epoxide	ug/g	0.05	0.05	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Hexachlorobenzene	ug/g	0.01	0.52	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID				RZZ240		RZZ241		RZZ242		
Sampling Date				2022/03/04		2022/03/04		2022/03/04		
COC Number				868121-02-01		868121-02-01		868121-02-01		
	UNITS	Criteria	Criteria-2	DUP-1	QC Batch	DUP-2	QC Batch	DUP-3	RDL	QC Batch
Hexachlorobutadiene	ug/g	0.01	0.012	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Hexachloroethane	ug/g	0.01	0.089	<0.0020	7872443	<0.0020	7881276	<0.0020	0.0020	7872443
Methoxychlor	ug/g	0.05	0.13	<0.0050	7872443	<0.0050	7881276	<0.0050	0.0050	7872443
Aroclor 1242	ug/g	-	-	<0.015	7872443	<0.015	7881276	<0.015	0.015	7872443
Aroclor 1248	ug/g	-	-	<0.015	7872443	<0.015	7881276	<0.015	0.015	7872443
Aroclor 1254	ug/g	-	-	<0.015	7872443	<0.015	7881276	<0.015	0.015	7872443
Aroclor 1260	ug/g	-	-	<0.015	7872443	<0.015	7881276	<0.015	0.015	7872443
Surrogate Recovery (%)										
2,4,5,6-Tetrachloro-m-xylene	%	-	-	79	7872443	80	7881276	77		7872443
Decachlorobiphenyl	%	-	-	109	7872443	86	7881276	122		7872443

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID				RZZ230	RZZ231	RZZ232	RZZ233	RZZ234		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-4 S1	BH22-5 S1	BH22-6 S1	BH22-7 S1	BH22-8 S1	RDL	QC Batch
Inorganics										
WAD Cyanide (Free)	ug/g	0.051	0.051	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	7869473

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

Bureau Veritas ID				RZZ235	RZZ237	RZZ238	RZZ239		
Sampling Date				2022/03/04	2022/03/04	2022/03/04	2022/03/04		
COC Number				868121-01-01	868121-01-01	868121-01-01	868121-01-01		
	UNITS	Criteria	Criteria-2	BH22-9 S1A	BH22-12 S1	BH22-13 S1	BH22-14 S1	RDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/g	0.051	0.051	<0.01	<0.01	<0.01	<0.01	0.01	7869473

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 1: Full Depth Background Site Condition Standards
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Criteria-2: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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TEST SUMMARY

Bureau Veritas ID: RZZ230 **Collected:** 2022/03/04
Sample ID: BH22-4 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ231 **Collected:** 2022/03/04
Sample ID: BH22-5 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ232 **Collected:** 2022/03/04
Sample ID: BH22-6 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ233 **Collected:** 2022/03/04
Sample ID: BH22-7 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ234 **Collected:** 2022/03/04
Sample ID: BH22-8 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti

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TEST SUMMARY

Bureau Veritas ID: RZZ234 **Collected:** 2022/03/04
Sample ID: BH22-8 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/08	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ234 Dup **Collected:** 2022/03/04
Sample ID: BH22-8 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/08	2022/03/10	Joy Zhang

Bureau Veritas ID: RZZ235 **Collected:** 2022/03/04
Sample ID: BH22-9 S1A **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ237 **Collected:** 2022/03/04
Sample ID: BH22-12 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ238 **Collected:** 2022/03/04
Sample ID: BH22-13 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/08	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

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TEST SUMMARY

Bureau Veritas ID: RZZ239 **Collected:** 2022/03/04
Sample ID: BH22-14 S1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	7869473	2022/03/08	2022/03/09	Aditiben Patel
Acid Extractable Metals by ICPMS	ICP/MS	7869778	2022/03/08	2022/03/10	Prempal Bhatti
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ240 **Collected:** 2022/03/04
Sample ID: DUP-1 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ241 **Collected:** 2022/03/04
Sample ID: DUP-2 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7881276	2022/03/14	2022/03/15	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

Bureau Veritas ID: RZZ242 **Collected:** 2022/03/04
Sample ID: DUP-3 **Shipped:**
Matrix: Soil **Received:** 2022/03/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7866788	N/A	2022/03/05	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	7872443	2022/03/09	2022/03/10	Joy Zhang
OC Pesticides Summed Parameters	CALC	7866594	N/A	2022/03/07	Automated Statchk

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GENERAL COMMENTS

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

Package 1	4.7°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7872443	2,4,5,6-Tetrachloro-m-xylene	2022/03/10	88	50 - 130	94	50 - 130	91	%		
7872443	Decachlorobiphenyl	2022/03/10	114	50 - 130	123	50 - 130	117	%		
7881276	2,4,5,6-Tetrachloro-m-xylene	2022/03/15	82	50 - 130	83	50 - 130	95	%		
7881276	Decachlorobiphenyl	2022/03/15	92	50 - 130	79	50 - 130	92	%		
7866788	Moisture	2022/03/05							3.9	20
7869473	WAD Cyanide (Free)	2022/03/09	80	75 - 125	89	80 - 120	<0.01	ug/g	NC	35
7869778	Acid Extractable Antimony (Sb)	2022/03/10	101	75 - 125	106	80 - 120	<0.20	ug/g	NC	30
7869778	Acid Extractable Arsenic (As)	2022/03/10	112	75 - 125	104	80 - 120	<1.0	ug/g	1.4	30
7869778	Acid Extractable Barium (Ba)	2022/03/10	NC	75 - 125	103	80 - 120	<0.50	ug/g	0.27	30
7869778	Acid Extractable Beryllium (Be)	2022/03/10	108	75 - 125	105	80 - 120	<0.20	ug/g	0.22	30
7869778	Acid Extractable Boron (B)	2022/03/10	101	75 - 125	105	80 - 120	<5.0	ug/g	4.2	30
7869778	Acid Extractable Cadmium (Cd)	2022/03/10	109	75 - 125	103	80 - 120	<0.10	ug/g	1.9	30
7869778	Acid Extractable Chromium (Cr)	2022/03/10	NC	75 - 125	102	80 - 120	<1.0	ug/g	1.5	30
7869778	Acid Extractable Cobalt (Co)	2022/03/10	110	75 - 125	102	80 - 120	<0.10	ug/g	3.1	30
7869778	Acid Extractable Copper (Cu)	2022/03/10	NC	75 - 125	102	80 - 120	<0.50	ug/g	7.4	30
7869778	Acid Extractable Lead (Pb)	2022/03/10	113	75 - 125	98	80 - 120	<1.0	ug/g	6.9	30
7869778	Acid Extractable Molybdenum (Mo)	2022/03/10	106	75 - 125	102	80 - 120	<0.50	ug/g	3.4	30
7869778	Acid Extractable Nickel (Ni)	2022/03/10	NC	75 - 125	103	80 - 120	<0.50	ug/g	3.4	30
7869778	Acid Extractable Selenium (Se)	2022/03/10	110	75 - 125	106	80 - 120	<0.50	ug/g	NC	30
7869778	Acid Extractable Silver (Ag)	2022/03/10	103	75 - 125	97	80 - 120	<0.20	ug/g	NC	30
7869778	Acid Extractable Thallium (Tl)	2022/03/10	105	75 - 125	100	80 - 120	<0.050	ug/g	1.3	30
7869778	Acid Extractable Uranium (U)	2022/03/10	107	75 - 125	99	80 - 120	<0.050	ug/g	2.7	30
7869778	Acid Extractable Vanadium (V)	2022/03/10	NC	75 - 125	103	80 - 120	<5.0	ug/g	0.77	30
7869778	Acid Extractable Zinc (Zn)	2022/03/10	NC	75 - 125	98	80 - 120	<5.0	ug/g	3.3	30
7872443	a-Chlordane	2022/03/10	100	50 - 130	94	50 - 130	<0.0020	ug/g	NC	40
7872443	Aldrin	2022/03/10	92	50 - 130	99	50 - 130	<0.0020	ug/g	NC	40
7872443	Aroclor 1242	2022/03/10					<0.015	ug/g	NC	40
7872443	Aroclor 1248	2022/03/10					<0.015	ug/g	NC	40
7872443	Aroclor 1254	2022/03/10					<0.015	ug/g	NC	40
7872443	Aroclor 1260	2022/03/10					<0.015	ug/g	NC	40
7872443	Dieldrin	2022/03/10	108	50 - 130	102	50 - 130	<0.0020	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7872443	Endosulfan I (alpha)	2022/03/10	91	50 - 130	90	50 - 130	<0.0020	ug/g	NC	40
7872443	Endosulfan II (beta)	2022/03/10	86	50 - 130	86	50 - 130	<0.0020	ug/g	NC	40
7872443	Endrin	2022/03/10	99	50 - 130	91	50 - 130	<0.0020	ug/g	NC	40
7872443	g-Chlordane	2022/03/10	94	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40
7872443	Heptachlor epoxide	2022/03/10	99	50 - 130	95	50 - 130	<0.0020	ug/g	NC	40
7872443	Heptachlor	2022/03/10	92	50 - 130	95	50 - 130	<0.0020	ug/g	NC	40
7872443	Hexachlorobenzene	2022/03/10	90	50 - 130	97	50 - 130	<0.0020	ug/g	NC	40
7872443	Hexachlorobutadiene	2022/03/10	79	50 - 130	106	50 - 130	<0.0020	ug/g	NC	40
7872443	Hexachloroethane	2022/03/10	58	50 - 130	91	50 - 130	<0.0020	ug/g	NC	40
7872443	Lindane	2022/03/10	89	50 - 130	86	50 - 130	<0.0020	ug/g	NC	40
7872443	Methoxychlor	2022/03/10	104	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
7872443	o,p-DDD	2022/03/10	120	50 - 130	110	50 - 130	<0.0020	ug/g	NC	40
7872443	o,p-DDE	2022/03/10	101	50 - 130	109	50 - 130	<0.0020	ug/g	NC	40
7872443	o,p-DDT	2022/03/10	112	50 - 130	102	50 - 130	<0.0020	ug/g	NC	40
7872443	p,p-DDD	2022/03/10	111	50 - 130	108	50 - 130	<0.0020	ug/g	NC	40
7872443	p,p-DDE	2022/03/10	108	50 - 130	116	50 - 130	<0.0020	ug/g	NC	40
7872443	p,p-DDT	2022/03/10	108	50 - 130	89	50 - 130	<0.0020	ug/g	NC	40
7881276	a-Chlordane	2022/03/15	93	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40
7881276	Aldrin	2022/03/15	91	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40
7881276	Aroclor 1242	2022/03/15					<0.015	ug/g	NC	40
7881276	Aroclor 1248	2022/03/15					<0.015	ug/g	NC	40
7881276	Aroclor 1254	2022/03/15					<0.015	ug/g	NC	40
7881276	Aroclor 1260	2022/03/15					<0.015	ug/g	NC	40
7881276	Dieldrin	2022/03/15	96	50 - 130	92	50 - 130	<0.0020	ug/g	NC	40
7881276	Endosulfan I (alpha)	2022/03/15	85	50 - 130	91	50 - 130	<0.0020	ug/g	NC	40
7881276	Endosulfan II (beta)	2022/03/15	73	50 - 130	78	50 - 130	<0.0020	ug/g	NC	40
7881276	Endrin	2022/03/15	86	50 - 130	81	50 - 130	<0.0020	ug/g	NC	40
7881276	g-Chlordane	2022/03/15	90	50 - 130	84	50 - 130	<0.0020	ug/g	NC	40
7881276	Heptachlor epoxide	2022/03/15	94	50 - 130	89	50 - 130	<0.0020	ug/g	NC	40
7881276	Heptachlor	2022/03/15	81	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40
7881276	Hexachlorobenzene	2022/03/15	90	50 - 130	86	50 - 130	<0.0020	ug/g	NC	40

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7881276	Hexachlorobutadiene	2022/03/15	79	50 - 130	93	50 - 130	<0.0020	ug/g	NC	40
7881276	Hexachloroethane	2022/03/15	60	50 - 130	70	50 - 130	<0.0020	ug/g	NC	40
7881276	Lindane	2022/03/15	86	50 - 130	82	50 - 130	<0.0020	ug/g	NC	40
7881276	Methoxychlor	2022/03/15	81	50 - 130	82	50 - 130	<0.0050	ug/g	NC	40
7881276	o,p-DDD	2022/03/15	109	50 - 130	96	50 - 130	<0.0020	ug/g	NC	40
7881276	o,p-DDE	2022/03/15	98	50 - 130	93	50 - 130	<0.0020	ug/g	NC	40
7881276	o,p-DDT	2022/03/15	88	50 - 130	82	50 - 130	<0.0020	ug/g	NC	40
7881276	p,p-DDD	2022/03/15	91	50 - 130	85	50 - 130	<0.0020	ug/g	NC	40
7881276	p,p-DDE	2022/03/15	101	50 - 130	102	50 - 130	<0.0020	ug/g	NC	40
7881276	p,p-DDT	2022/03/15	89	50 - 130	79	50 - 130	<0.0020	ug/g	NC	40

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

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

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

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

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

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

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

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VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Cristina Carriere, Senior Scientific Specialist

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

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

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH22-4 S1	RZZ230-01	Acid Extractable Barium (Ba)	220	230	0.50	ug/g

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

Exceedance Summary Table – Reg153/04 T3-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: 21-339-302
Your C.O.C. #: N/A

Attention: John Gaviria-Ballen

DS Consultants Limited
6221 Highway 7, Unit 16
Vaughan, ON
CANADA L4H 0K8

Report Date: 2022/03/30
Report #: R7065724
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C274280
Received: 2022/03/21, 19:49

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	3	N/A	2022/03/28	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	3	2022/03/25	2022/03/25	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	1	N/A	2022/03/24		EPA 8260C m
Free (WAD) Cyanide	3	2022/03/25	2022/03/25	CAM SOP-00457	OMOE E3015 m
Conductivity	2	2022/03/25	2022/03/25	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	1	2022/03/24	2022/03/25	CAM SOP-00436	EPA 3060/7199 m
Hexavalent Chromium in Soil by IC (1)	2	2022/03/25	2022/03/25	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	1	2022/03/24	2022/03/25	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	3	2022/03/25	2022/03/25	CAM SOP-00447	EPA 6020B m
Moisture	5	N/A	2022/03/23	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (3)	2	2022/03/27	2022/03/28	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	2	N/A	2022/03/24	CAM SOP-00307	EPA 8081/8082 m
PAH Compounds in Soil by GC/MS (SIM)	3	2022/03/24	2022/03/25	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	2	2022/03/24	2022/03/24	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	2	N/A	2022/03/25	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	1	N/A	2022/03/23	CAM SOP-00230	EPA 8260C m

Remarks:

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

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

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

Your Project #: 21-339-302
Your C.O.C. #: N/A

Attention: John Gaviria-Ballen

DS Consultants Limited
6221 Highway 7, Unit 16
Vaughan, ON
CANADA L4H 0K8

Report Date: 2022/03/30
Report #: R7065724
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C274280

Received: 2022/03/21, 19:49

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

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

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

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

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

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
30 Mar 2022 16:06:35

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ashton Gibson, Project Manager
Email: Ashton.Gibson@bureauveritas.com
Phone# (905)817-5765

==========

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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SDO221			SDO223		
Sampling Date			2022/03/21			2022/03/21		
COC Number			N/A			N/A		
	UNITS	Criteria	BH22-11 S1	RDL	QC Batch	BH22-15 S1	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	5.0	0.47 (1)		7897957	0.35		7897957
Inorganics								
Conductivity	mS/cm	0.7	0.050	0.002	7903258	0.47	0.002	7903258
Moisture	%	-	18	1.0	7898468			
Available (CaCl2) pH	pH	-	5.66		7901084	7.74		7901070
WAD Cyanide (Free)	ug/g	0.051	<0.01	0.01	7903305	<0.01	0.01	7903305
Chromium (VI)	ug/g	8	<0.18	0.18	7903319	<0.18	0.18	7900987
Metals								
Hot Water Ext. Boron (B)	ug/g	1.5	0.094	0.050	7903501	0.14	0.050	7903501
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	0.20	7903486	<0.20	0.20	7903486
Acid Extractable Arsenic (As)	ug/g	18	1.8	1.0	7903486	3.1	1.0	7903486
Acid Extractable Barium (Ba)	ug/g	390	35	0.50	7903486	81	0.50	7903486
Acid Extractable Beryllium (Be)	ug/g	4	0.40	0.20	7903486	0.68	0.20	7903486
Acid Extractable Boron (B)	ug/g	120	<5.0	5.0	7903486	5.1	5.0	7903486
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	0.10	7903486	0.11	0.10	7903486
Acid Extractable Chromium (Cr)	ug/g	160	11	1.0	7903486	19	1.0	7903486
Acid Extractable Cobalt (Co)	ug/g	22	4.4	0.10	7903486	9.4	0.10	7903486
Acid Extractable Copper (Cu)	ug/g	140	9.3	0.50	7903486	16	0.50	7903486
Acid Extractable Lead (Pb)	ug/g	120	5.8	1.0	7903486	7.6	1.0	7903486
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	0.50	7903486	0.62	0.50	7903486
Acid Extractable Nickel (Ni)	ug/g	100	9.7	0.50	7903486	20	0.50	7903486
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	0.50	7903486	<0.50	0.50	7903486
Acid Extractable Silver (Ag)	ug/g	20	<0.20	0.20	7903486	<0.20	0.20	7903486
Acid Extractable Thallium (Tl)	ug/g	1	0.065	0.050	7903486	0.11	0.050	7903486
Acid Extractable Uranium (U)	ug/g	23	0.37	0.050	7903486	0.47	0.050	7903486
Acid Extractable Vanadium (V)	ug/g	86	18	5.0	7903486	27	5.0	7903486
Acid Extractable Zinc (Zn)	ug/g	340	24	5.0	7903486	43	5.0	7903486
Acid Extractable Mercury (Hg)	ug/g	0.27	<0.050	0.050	7903486	<0.050	0.050	7903486

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

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O.REG 153 METALS PACKAGE (SOIL)

Bureau Veritas ID			SDO220			SDO220		
Sampling Date			2022/03/21			2022/03/21		
COC Number			N/A			N/A		
	UNITS	Criteria	BH22-10 S1	RDL	QC Batch	BH22-10 S1 Lab-Dup	RDL	QC Batch
Inorganics								
Moisture	%	-	16	1.0	7898468			
Chromium (VI)	ug/g	8	<0.18	0.18	7903319			
Metals								
Hot Water Ext. Boron (B)	ug/g	1.5	0.14	0.050	7903501	0.16	0.050	7903501
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	0.20	7903486			
Acid Extractable Arsenic (As)	ug/g	18	2.3	1.0	7903486			
Acid Extractable Barium (Ba)	ug/g	390	59	0.50	7903486			
Acid Extractable Beryllium (Be)	ug/g	4	0.56	0.20	7903486			
Acid Extractable Boron (B)	ug/g	120	<5.0	5.0	7903486			
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	0.10	7903486			
Acid Extractable Chromium (Cr)	ug/g	160	16	1.0	7903486			
Acid Extractable Cobalt (Co)	ug/g	22	7.2	0.10	7903486			
Acid Extractable Copper (Cu)	ug/g	140	11	0.50	7903486			
Acid Extractable Lead (Pb)	ug/g	120	8.3	1.0	7903486			
Acid Extractable Molybdenum (Mo)	ug/g	6.9	0.66	0.50	7903486			
Acid Extractable Nickel (Ni)	ug/g	100	15	0.50	7903486			
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	0.50	7903486			
Acid Extractable Silver (Ag)	ug/g	20	<0.20	0.20	7903486			
Acid Extractable Thallium (Tl)	ug/g	1	0.13	0.050	7903486			
Acid Extractable Uranium (U)	ug/g	23	0.56	0.050	7903486			
Acid Extractable Vanadium (V)	ug/g	86	27	5.0	7903486			
Acid Extractable Zinc (Zn)	ug/g	340	43	5.0	7903486			
Acid Extractable Mercury (Hg)	ug/g	0.27	0.069	0.050	7903486			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID			SDO220	SDO221		
Sampling Date			2022/03/21	2022/03/21		
COC Number			N/A	N/A		
	UNITS	Criteria	BH22-10 S1	BH22-11 S1	RDL	QC Batch
Calculated Parameters						
Chlordane (Total)	ug/g	0.05	<0.0020	<0.0020	0.0020	7897903
o,p-DDD + p,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	7897903
o,p-DDE + p,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	7897903
o,p-DDT + p,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	7897903
Total Endosulfan	ug/g	0.05	<0.0020	<0.0020	0.0020	7897903
Total PCB	ug/g	0.35	<0.015	<0.015	0.015	7897903
Pesticides & Herbicides						
Aldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	7906198
a-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	7906198
g-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	7906198
o,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	7906198
p,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	7906198
o,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	7906198
p,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	7906198
o,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	7906198
p,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	7906198
Dieldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	7906198
Lindane	ug/g	0.056	<0.0020	<0.0020	0.0020	7906198
Endosulfan I (alpha)	ug/g	0.04	<0.0020	<0.0020	0.0020	7906198
Endosulfan II (beta)	ug/g	0.04	<0.0020	<0.0020	0.0020	7906198
Endrin	ug/g	0.04	<0.0020	<0.0020	0.0020	7906198
Heptachlor	ug/g	0.15	<0.0020	<0.0020	0.0020	7906198
Heptachlor epoxide	ug/g	0.05	<0.0020	<0.0020	0.0020	7906198
Hexachlorobenzene	ug/g	0.52	<0.0020	<0.0020	0.0020	7906198
Hexachlorobutadiene	ug/g	0.012	<0.0020	<0.0020	0.0020	7906198
Hexachloroethane	ug/g	0.089	<0.0020	<0.0020	0.0020	7906198
Methoxychlor	ug/g	0.13	<0.0050	<0.0050	0.0050	7906198
Aroclor 1242	ug/g	-	<0.015	<0.015	0.015	7906198
Aroclor 1248	ug/g	-	<0.015	<0.015	0.015	7906198

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

Bureau Veritas ID			SDO220	SDO221		
Sampling Date			2022/03/21	2022/03/21		
COC Number			N/A	N/A		
	UNITS	Criteria	BH22-10 S1	BH22-11 S1	RDL	QC Batch
Aroclor 1254	ug/g	-	<0.015	<0.015	0.015	7906198
Aroclor 1260	ug/g	-	<0.015	<0.015	0.015	7906198
Surrogate Recovery (%)						
2,4,5,6-Tetrachloro-m-xylene	%	-	80	97		7906198
Decachlorobiphenyl	%	-	95	102		7906198

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SDO222			SDO223			SDO225		
Sampling Date			2022/03/21			2022/03/21			2022/03/21		
COC Number			N/A			N/A			N/A		
	UNITS	Criteria	BH22-11 S2	RDL	QC Batch	BH22-15 S1	RDL	QC Batch	DUP-4	RDL	QC Batch
Inorganics											
Moisture	%	-	21	1.0	7898468				23	1.0	7898468
Calculated Parameters											
Methylnaphthalene, 2-(1-)	ug/g	-	<0.0071	0.0071	7897924	<0.0071	0.0071	7897924	<0.0071	0.0071	7897924
Polyaromatic Hydrocarbons											
Acenaphthene	ug/g	7.9	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Acenaphthylene	ug/g	0.15	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Anthracene	ug/g	0.67	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Benzo(a)anthracene	ug/g	0.5	0.030	0.0050	7902047	<0.0050	0.0050	7902047	0.0073	0.0050	7902047
Benzo(a)pyrene	ug/g	0.3	0.028	0.0050	7902047	<0.0050	0.0050	7902047	0.0067	0.0050	7902047
Benzo(b/j)fluoranthene	ug/g	0.78	0.040	0.0050	7902047	<0.0050	0.0050	7902047	0.010	0.0050	7902047
Benzo(g,h,i)perylene	ug/g	6.6	0.019	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Benzo(k)fluoranthene	ug/g	0.78	0.014	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Chrysene	ug/g	7	0.021	0.0050	7902047	<0.0050	0.0050	7902047	0.0060	0.0050	7902047
Dibenzo(a,h)anthracene	ug/g	0.1	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Fluoranthene	ug/g	0.69	0.064	0.0050	7902047	<0.0050	0.0050	7902047	0.017	0.0050	7902047
Fluorene	ug/g	62	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.021	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
1-Methylnaphthalene	ug/g	0.99	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
2-Methylnaphthalene	ug/g	0.99	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Naphthalene	ug/g	0.6	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Phenanthrene	ug/g	6.2	0.015	0.0050	7902047	<0.0050	0.0050	7902047	<0.0050	0.0050	7902047
Pyrene	ug/g	78	0.051	0.0050	7902047	<0.0050	0.0050	7902047	0.013	0.0050	7902047
Surrogate Recovery (%)											
D10-Anthracene	%	-	82		7902047	91		7902047	94		7902047
D14-Terphenyl (FS)	%	-	79		7902047	89		7902047	93		7902047
D8-Acenaphthylene	%	-	75		7902047	87		7902047	90		7902047

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SDO223			SDO223		
Sampling Date			2022/03/21			2022/03/21		
COC Number			N/A			N/A		
	UNITS	Criteria	BH22-15 S1	RDL	QC Batch	BH22-15 S1 Lab-Dup	RDL	QC Batch
Inorganics								
Moisture	%	-	20	1.0	7898468			
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	0.05	<0.050	0.050	7897956			
Volatile Organics								
Acetone (2-Propanone)	ug/g	16	<0.49	0.49	7899278			
Benzene	ug/g	0.21	<0.0060	0.0060	7899278			
Bromodichloromethane	ug/g	1.5	<0.040	0.040	7899278			
Bromoform	ug/g	0.27	<0.040	0.040	7899278			
Bromomethane	ug/g	0.05	<0.040	0.040	7899278			
Carbon Tetrachloride	ug/g	0.05	<0.040	0.040	7899278			
Chlorobenzene	ug/g	2.4	<0.040	0.040	7899278			
Chloroform	ug/g	0.05	<0.040	0.040	7899278			
Dibromochloromethane	ug/g	2.3	<0.040	0.040	7899278			
1,2-Dichlorobenzene	ug/g	1.2	<0.040	0.040	7899278			
1,3-Dichlorobenzene	ug/g	4.8	<0.040	0.040	7899278			
1,4-Dichlorobenzene	ug/g	0.083	<0.040	0.040	7899278			
Dichlorodifluoromethane (FREON 12)	ug/g	16	<0.040	0.040	7899278			
1,1-Dichloroethane	ug/g	0.47	<0.040	0.040	7899278			
1,2-Dichloroethane	ug/g	0.05	<0.049	0.049	7899278			
1,1-Dichloroethylene	ug/g	0.05	<0.040	0.040	7899278			
cis-1,2-Dichloroethylene	ug/g	1.9	<0.040	0.040	7899278			
trans-1,2-Dichloroethylene	ug/g	0.084	<0.040	0.040	7899278			
1,2-Dichloropropane	ug/g	0.05	<0.040	0.040	7899278			
cis-1,3-Dichloropropene	ug/g	0.05	<0.030	0.030	7899278			
trans-1,3-Dichloropropene	ug/g	0.05	<0.040	0.040	7899278			
Ethylbenzene	ug/g	1.1	<0.010	0.010	7899278			
Ethylene Dibromide	ug/g	0.05	<0.040	0.040	7899278			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SDO223			SDO223		
Sampling Date			2022/03/21			2022/03/21		
COC Number			N/A			N/A		
	UNITS	Criteria	BH22-15 S1	RDL	QC Batch	BH22-15 S1 Lab-Dup	RDL	QC Batch
Hexane	ug/g	2.8	<0.040	0.040	7899278			
Methylene Chloride(Dichloromethane)	ug/g	0.1	<0.049	0.049	7899278			
Methyl Ethyl Ketone (2-Butanone)	ug/g	16	<0.40	0.40	7899278			
Methyl Isobutyl Ketone	ug/g	1.7	<0.40	0.40	7899278			
Methyl t-butyl ether (MTBE)	ug/g	0.75	<0.040	0.040	7899278			
Styrene	ug/g	0.7	<0.040	0.040	7899278			
1,1,1,2-Tetrachloroethane	ug/g	0.058	<0.040	0.040	7899278			
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.040	0.040	7899278			
Tetrachloroethylene	ug/g	0.28	<0.040	0.040	7899278			
Toluene	ug/g	2.3	<0.020	0.020	7899278			
1,1,1-Trichloroethane	ug/g	0.38	<0.040	0.040	7899278			
1,1,2-Trichloroethane	ug/g	0.05	<0.040	0.040	7899278			
Trichloroethylene	ug/g	0.061	<0.010	0.010	7899278			
Trichlorofluoromethane (FREON 11)	ug/g	4	<0.040	0.040	7899278			
Vinyl Chloride	ug/g	0.02	<0.019	0.019	7899278			
p+m-Xylene	ug/g	-	<0.020	0.020	7899278			
o-Xylene	ug/g	-	<0.020	0.020	7899278			
Total Xylenes	ug/g	3.1	<0.020	0.020	7899278			
F1 (C6-C10)	ug/g	55	<10	10	7899278			
F1 (C6-C10) - BTEX	ug/g	55	<10	10	7899278			
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	98	<10	10	7901270	<10	10	7901270
F3 (C16-C34 Hydrocarbons)	ug/g	300	<50	50	7901270	<50	50	7901270
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<50	50	7901270	<50	50	7901270
Reached Baseline at C50	ug/g	-	Yes		7901270	Yes		7901270
Surrogate Recovery (%)								
o-Terphenyl	%	-	97		7901270	102		7901270
4-Bromofluorobenzene	%	-	93		7899278			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SDO223			SDO223		
Sampling Date			2022/03/21			2022/03/21		
COC Number			N/A			N/A		
	UNITS	**Criteria**	**BH22-15 S1**	**RDL**	**QC Batch**	**BH22-15 S1 Lab-Dup**	**RDL**	**QC Batch**
D10-o-Xylene	%	-	98		7899278			
D4-1,2-Dichloroethane	%	-	107		7899278			
D8-Toluene	%	-	93		7899278			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID			SDO220		
Sampling Date			2022/03/21		
COC Number			N/A		
	UNITS	Criteria	BH22-10 S1	RDL	QC Batch
Inorganics					
WAD Cyanide (Free)	ug/g	0.051	<0.01	0.01	7903305

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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Bureau Veritas Job #: C274280
Report Date: 2022/03/30

DS Consultants Limited
Client Project #: 21-339-302
Sampler Initials: AH

TEST SUMMARY

Bureau Veritas ID: SDO220
Sample ID: BH22-10 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7903501	2022/03/25	2022/03/25	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	7903305	2022/03/25	2022/03/25	Aditiben Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	7903319	2022/03/25	2022/03/25	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7903486	2022/03/25	2022/03/25	Daniel Teclu
Moisture	BAL	7898468	N/A	2022/03/23	Kruti Jitesh Patel
OC Pesticides (Selected) & PCB	GC/ECD	7906198	2022/03/27	2022/03/28	Joy Zhang
OC Pesticides Summed Parameters	CALC	7897903	N/A	2022/03/24	Automated Statchk

Bureau Veritas ID: SDO220 Dup
Sample ID: BH22-10 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7903501	2022/03/25	2022/03/25	Suban Kanapathippllai

Bureau Veritas ID: SDO221
Sample ID: BH22-11 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7903501	2022/03/25	2022/03/25	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	7903305	2022/03/25	2022/03/25	Aditiben Patel
Conductivity	AT	7903258	2022/03/25	2022/03/25	Kien Tran
Hexavalent Chromium in Soil by IC	IC/SPEC	7903319	2022/03/25	2022/03/25	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7903486	2022/03/25	2022/03/25	Daniel Teclu
Moisture	BAL	7898468	N/A	2022/03/23	Kruti Jitesh Patel
OC Pesticides (Selected) & PCB	GC/ECD	7906198	2022/03/27	2022/03/28	Joy Zhang
OC Pesticides Summed Parameters	CALC	7897903	N/A	2022/03/24	Automated Statchk
pH CaCl2 EXTRACT	AT	7901084	2022/03/24	2022/03/24	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	7897957	N/A	2022/03/25	Automated Statchk

Bureau Veritas ID: SDO222
Sample ID: BH22-11 S2
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7897924	N/A	2022/03/28	Automated Statchk
Moisture	BAL	7898468	N/A	2022/03/23	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7902047	2022/03/24	2022/03/25	Jonghan Yoon

Bureau Veritas ID: SDO223
Sample ID: BH22-15 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7897924	N/A	2022/03/28	Automated Statchk

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TEST SUMMARY

Bureau Veritas ID: SDO223
Sample ID: BH22-15 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7903501	2022/03/25	2022/03/25	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	7897956	N/A	2022/03/24	Automated Statchk
Free (WAD) Cyanide	TECH	7903305	2022/03/25	2022/03/25	Aditiben Patel
Conductivity	AT	7903258	2022/03/25	2022/03/25	Kien Tran
Hexavalent Chromium in Soil by IC	IC/SPEC	7900987	2022/03/24	2022/03/25	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7901270	2022/03/24	2022/03/25	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	7903486	2022/03/25	2022/03/25	Daniel Teclu
Moisture	BAL	7898468	N/A	2022/03/23	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7902047	2022/03/24	2022/03/25	Jonghan Yoon
pH CaCl2 EXTRACT	AT	7901070	2022/03/24	2022/03/24	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	7897957	N/A	2022/03/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7899278	N/A	2022/03/23	Anna Gabrielyan

Bureau Veritas ID: SDO223 Dup
Sample ID: BH22-15 S1
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7901270	2022/03/24	2022/03/25	Jeevaraj Jeevaratrnam

Bureau Veritas ID: SDO225
Sample ID: DUP-4
Matrix: Soil

Collected: 2022/03/21
Shipped:
Received: 2022/03/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7897924	N/A	2022/03/28	Automated Statchk
Moisture	BAL	7898468	N/A	2022/03/23	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7902047	2022/03/24	2022/03/25	Jonghan Yoon

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GENERAL COMMENTS

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

Package 1	14.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7899278	4-Bromofluorobenzene	2022/03/23	103	60 - 140	106	60 - 140	93	%		
7899278	D10-o-Xylene	2022/03/23	110	60 - 130	110	60 - 130	88	%		
7899278	D4-1,2-Dichloroethane	2022/03/23	104	60 - 140	97	60 - 140	101	%		
7899278	D8-Toluene	2022/03/23	107	60 - 140	108	60 - 140	95	%		
7901270	o-Terphenyl	2022/03/24	98	60 - 130	96	60 - 130	100	%		
7902047	D10-Anthracene	2022/03/25	103	50 - 130	95	50 - 130	116	%		
7902047	D14-Terphenyl (FS)	2022/03/25	91	50 - 130	88	50 - 130	91	%		
7902047	D8-Acenaphthylene	2022/03/25	92	50 - 130	89	50 - 130	89	%		
7906198	2,4,5,6-Tetrachloro-m-xylene	2022/03/27	91	50 - 130	81	50 - 130	80	%		
7906198	Decachlorobiphenyl	2022/03/27	99	50 - 130	88	50 - 130	92	%		
7898468	Moisture	2022/03/23							2.6	20
7899278	1,1,1,2-Tetrachloroethane	2022/03/23	96	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7899278	1,1,1-Trichloroethane	2022/03/23	104	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7899278	1,1,2,2-Tetrachloroethane	2022/03/23	97	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
7899278	1,1,2-Trichloroethane	2022/03/23	103	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7899278	1,1-Dichloroethane	2022/03/23	100	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7899278	1,1-Dichloroethylene	2022/03/23	106	60 - 140	110	60 - 130	<0.040	ug/g	NC	50
7899278	1,2-Dichlorobenzene	2022/03/23	96	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7899278	1,2-Dichloroethane	2022/03/23	103	60 - 140	95	60 - 130	<0.049	ug/g	NC	50
7899278	1,2-Dichloropropane	2022/03/23	100	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7899278	1,3-Dichlorobenzene	2022/03/23	97	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7899278	1,4-Dichlorobenzene	2022/03/23	114	60 - 140	112	60 - 130	<0.040	ug/g	NC	50
7899278	Acetone (2-Propanone)	2022/03/23	117	60 - 140	114	60 - 140	<0.49	ug/g	NC	50
7899278	Benzene	2022/03/23	96	60 - 140	96	60 - 130	<0.0060	ug/g	NC	50
7899278	Bromodichloromethane	2022/03/23	104	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7899278	Bromoform	2022/03/23	99	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7899278	Bromomethane	2022/03/23	112	60 - 140	114	60 - 140	<0.040	ug/g	NC	50
7899278	Carbon Tetrachloride	2022/03/23	102	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7899278	Chlorobenzene	2022/03/23	98	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
7899278	Chloroform	2022/03/23	102	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7899278	cis-1,2-Dichloroethylene	2022/03/23	104	60 - 140	106	60 - 130	<0.040	ug/g	NC	50

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7899278	cis-1,3-Dichloropropene	2022/03/23	98	60 - 140	98	60 - 130	<0.030	ug/g	NC	50
7899278	Dibromochloromethane	2022/03/23	99	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7899278	Dichlorodifluoromethane (FREON 12)	2022/03/23	98	60 - 140	98	60 - 140	<0.040	ug/g	NC	50
7899278	Ethylbenzene	2022/03/23	92	60 - 140	95	60 - 130	<0.010	ug/g	NC	50
7899278	Ethylene Dibromide	2022/03/23	99	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7899278	F1 (C6-C10) - BTEX	2022/03/23					<10	ug/g	NC	30
7899278	F1 (C6-C10)	2022/03/23	95	60 - 140	98	80 - 120	<10	ug/g	NC	30
7899278	Hexane	2022/03/23	107	60 - 140	110	60 - 130	<0.040	ug/g	NC	50
7899278	Methyl Ethyl Ketone (2-Butanone)	2022/03/23	117	60 - 140	115	60 - 140	<0.40	ug/g	NC	50
7899278	Methyl Isobutyl Ketone	2022/03/23	90	60 - 140	87	60 - 130	<0.40	ug/g	NC	50
7899278	Methyl t-butyl ether (MTBE)	2022/03/23	96	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7899278	Methylene Chloride(Dichloromethane)	2022/03/23	104	60 - 140	105	60 - 130	<0.049	ug/g	NC	50
7899278	o-Xylene	2022/03/23	94	60 - 140	95	60 - 130	<0.020	ug/g	NC	50
7899278	p+m-Xylene	2022/03/23	94	60 - 140	97	60 - 130	<0.020	ug/g	NC	50
7899278	Styrene	2022/03/23	108	60 - 140	108	60 - 130	<0.040	ug/g	NC	50
7899278	Tetrachloroethylene	2022/03/23	94	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7899278	Toluene	2022/03/23	100	60 - 140	101	60 - 130	<0.020	ug/g	NC	50
7899278	Total Xylenes	2022/03/23					<0.020	ug/g	NC	50
7899278	trans-1,2-Dichloroethylene	2022/03/23	103	60 - 140	107	60 - 130	<0.040	ug/g	NC	50
7899278	trans-1,3-Dichloropropene	2022/03/23	107	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7899278	Trichloroethylene	2022/03/23	107	60 - 140	110	60 - 130	<0.010	ug/g	NC	50
7899278	Trichlorofluoromethane (FREON 11)	2022/03/23	107	60 - 140	111	60 - 130	<0.040	ug/g	NC	50
7899278	Vinyl Chloride	2022/03/23	109	60 - 140	111	60 - 130	<0.019	ug/g	NC	50
7900987	Chromium (VI)	2022/03/25	83	70 - 130	94	80 - 120	<0.18	ug/g	21	35
7901070	Available (CaCl2) pH	2022/03/24			100	97 - 103			1.5	N/A
7901084	Available (CaCl2) pH	2022/03/24			100	97 - 103			0.58	N/A
7901270	F2 (C10-C16 Hydrocarbons)	2022/03/25	104	60 - 130	101	80 - 120	<10	ug/g	NC	30
7901270	F3 (C16-C34 Hydrocarbons)	2022/03/25	104	60 - 130	101	80 - 120	<50	ug/g	NC	30
7901270	F4 (C34-C50 Hydrocarbons)	2022/03/25	108	60 - 130	105	80 - 120	<50	ug/g	NC	30
7902047	1-Methylnaphthalene	2022/03/25	103	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
7902047	2-Methylnaphthalene	2022/03/25	98	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7902047	Acenaphthene	2022/03/25	98	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7902047	Acenaphthylene	2022/03/25	96	50 - 130	86	50 - 130	<0.0050	ug/g	NC	40
7902047	Anthracene	2022/03/25	98	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
7902047	Benzo(a)anthracene	2022/03/25	104	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7902047	Benzo(a)pyrene	2022/03/25	99	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7902047	Benzo(b/j)fluoranthene	2022/03/25	99	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
7902047	Benzo(g,h,i)perylene	2022/03/25	91	50 - 130	81	50 - 130	<0.0050	ug/g	NC	40
7902047	Benzo(k)fluoranthene	2022/03/25	98	50 - 130	88	50 - 130	<0.0050	ug/g	NC	40
7902047	Chrysene	2022/03/25	106	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7902047	Dibenzo(a,h)anthracene	2022/03/25	88	50 - 130	78	50 - 130	<0.0050	ug/g	NC	40
7902047	Fluoranthene	2022/03/25	98	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7902047	Fluorene	2022/03/25	103	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
7902047	Indeno(1,2,3-cd)pyrene	2022/03/25	96	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7902047	Naphthalene	2022/03/25	93	50 - 130	83	50 - 130	<0.0050	ug/g	NC	40
7902047	Phenanthrene	2022/03/25	98	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
7902047	Pyrene	2022/03/25	97	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7903258	Conductivity	2022/03/25			100	90 - 110	<0.002	mS/cm	0.66	10
7903305	WAD Cyanide (Free)	2022/03/25	95	75 - 125	93	80 - 120	<0.01	ug/g	NC	35
7903319	Chromium (VI)	2022/03/25	87	70 - 130	93	80 - 120	<0.18	ug/g	NC	35
7903486	Acid Extractable Antimony (Sb)	2022/03/25	99	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
7903486	Acid Extractable Arsenic (As)	2022/03/25	106	75 - 125	95	80 - 120	<1.0	ug/g	11	30
7903486	Acid Extractable Barium (Ba)	2022/03/25	NC	75 - 125	96	80 - 120	<0.50	ug/g	4.8	30
7903486	Acid Extractable Beryllium (Be)	2022/03/25	109	75 - 125	98	80 - 120	<0.20	ug/g	0.60	30
7903486	Acid Extractable Boron (B)	2022/03/25	104	75 - 125	97	80 - 120	<5.0	ug/g	0.36	30
7903486	Acid Extractable Cadmium (Cd)	2022/03/25	107	75 - 125	97	80 - 120	<0.10	ug/g	11	30
7903486	Acid Extractable Chromium (Cr)	2022/03/25	110	75 - 125	97	80 - 120	<1.0	ug/g	0.50	30
7903486	Acid Extractable Cobalt (Co)	2022/03/25	107	75 - 125	99	80 - 120	<0.10	ug/g	0.39	30
7903486	Acid Extractable Copper (Cu)	2022/03/25	101	75 - 125	98	80 - 120	<0.50	ug/g	3.0	30
7903486	Acid Extractable Lead (Pb)	2022/03/25	108	75 - 125	100	80 - 120	<1.0	ug/g	3.3	30
7903486	Acid Extractable Mercury (Hg)	2022/03/25	97	75 - 125	88	80 - 120	<0.050	ug/g		
7903486	Acid Extractable Molybdenum (Mo)	2022/03/25	107	75 - 125	100	80 - 120	<0.50	ug/g	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7903486	Acid Extractable Nickel (Ni)	2022/03/25	108	75 - 125	99	80 - 120	<0.50	ug/g	2.1	30
7903486	Acid Extractable Selenium (Se)	2022/03/25	108	75 - 125	104	80 - 120	<0.50	ug/g	NC	30
7903486	Acid Extractable Silver (Ag)	2022/03/25	109	75 - 125	101	80 - 120	<0.20	ug/g	NC	30
7903486	Acid Extractable Thallium (Tl)	2022/03/25	109	75 - 125	102	80 - 120	<0.050	ug/g	7.6	30
7903486	Acid Extractable Uranium (U)	2022/03/25	109	75 - 125	99	80 - 120	<0.050	ug/g	11	30
7903486	Acid Extractable Vanadium (V)	2022/03/25	109	75 - 125	98	80 - 120	<5.0	ug/g	0.86	30
7903486	Acid Extractable Zinc (Zn)	2022/03/25	NC	75 - 125	99	80 - 120	<5.0	ug/g	1.9	30
7903501	Hot Water Ext. Boron (B)	2022/03/25	103	75 - 125	102	75 - 125	<0.050	ug/g	13	40
7906198	a-Chlordane	2022/03/28	96	50 - 130	76	50 - 130	<0.0020	ug/g	NC	40
7906198	Aldrin	2022/03/28	89	50 - 130	76	50 - 130	<0.0020	ug/g	NC	40
7906198	Aroclor 1242	2022/03/28					<0.015	ug/g	NC	40
7906198	Aroclor 1248	2022/03/28					<0.015	ug/g	NC	40
7906198	Aroclor 1254	2022/03/28					<0.015	ug/g	NC	40
7906198	Aroclor 1260	2022/03/28					<0.015	ug/g	NC	40
7906198	Dieldrin	2022/03/28	96	50 - 130	75	50 - 130	<0.0020	ug/g	NC	40
7906198	Endosulfan I (alpha)	2022/03/28	104	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40
7906198	Endosulfan II (beta)	2022/03/28	73	50 - 130	69	50 - 130	<0.0020	ug/g	NC	40
7906198	Endrin	2022/03/28	86	50 - 130	72	50 - 130	<0.0020	ug/g	NC	40
7906198	g-Chlordane	2022/03/28	109	50 - 130	77	50 - 130	<0.0020	ug/g	NC	40
7906198	Heptachlor epoxide	2022/03/28	93	50 - 130	76	50 - 130	<0.0020	ug/g	NC	40
7906198	Heptachlor	2022/03/28	83	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40
7906198	Hexachlorobenzene	2022/03/28	105	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40
7906198	Hexachlorobutadiene	2022/03/28	79	50 - 130	87	50 - 130	<0.0020	ug/g	NC	40
7906198	Hexachloroethane	2022/03/28	65	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40
7906198	Lindane	2022/03/28	97	50 - 130	77	50 - 130	<0.0020	ug/g	NC	40
7906198	Methoxychlor	2022/03/28	91	50 - 130	77	50 - 130	<0.0050	ug/g	NC	40
7906198	o,p-DDD	2022/03/28	115	50 - 130	72	50 - 130	<0.0020	ug/g	NC	40
7906198	o,p-DDE	2022/03/28	97	50 - 130	82	50 - 130	<0.0020	ug/g	NC	40
7906198	o,p-DDT	2022/03/28	90	50 - 130	76	50 - 130	<0.0020	ug/g	NC	40
7906198	p,p-DDD	2022/03/28	104	50 - 130	73	50 - 130	<0.0020	ug/g	NC	40
7906198	p,p-DDE	2022/03/28	120	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7906198	p,p-DDT	2022/03/28	87	50 - 130	77	50 - 130	<0.0020	ug/g	NC	40

N/A = Not Applicable

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

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

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

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

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

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

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

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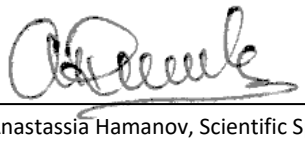
VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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

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Exceedance Summary Table – Reg153/04 T2-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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