HSGROUP

DUE DILIGENCE RISK ASSESSMENT REPORT

human health, ecological risk assessment, and toxicology

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PROJECT TITLE:	Due Diligence Risk Assessment – 7504 McLean Road, Puslinch, Ontario
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DATE:	March 31, 2025

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EXECUTIVE SUMMARY

Hugh Scobie o/a HS Group (HS Group) in association with BVD Real Estate Inc. ('the client') has prepared this due diligence risk assessment (DDRA) for the purpose of evaluating potential risks to human receptors for the property located at 7504 McLean Road, Puslinch, Ontario (the 'Site'). The RA is being conducted as part of due diligence and while the format generally follows that of a risk assessment conducted under Ontario Regulation 153/04 (O. Reg. 153/04) (as amended) that would be used to support a Record of Site Condition (RSC) the DDRA will not be submitted to the Ontario Ministry of the Environment, nor be used to support the filing of an RSC.

The subject site is a rectangular shaped lot located in the northwest area of Puslinch, Ontario at 7504 McLean Road. The site is bound by vacant land located northeast and northwest and industrial buildings to the southwest and southeast of the site. The site is currently vacant land. The subject site area is located within the Mill Creek-Grand River watershed which contains Mill Creek and the Grand River. The site is zoned as being "Industrial" as quoted from the Township of Puslinch Comprehensive Zoning By-law No. 023-18 as amended and is located on the northwest side of McLean Road. Sub-surface intrusive investigations have been conducted at the Site by A&A Environmental Consultants Inc.. The investigations noted impacts of both soil and ground water. The impacts in soil were identified Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), zinc, lead and PHC F4. The impacts in groundwater were identified as cobalt and copper. Importation of impacted fill has been identified as the likely source of the exceedances noted in soil and groundwater.

The Table 1 Site Condition Standards have been used for the identification of impacts in soil and groundwater, as the Township of Puslinch requires its use as part of a bylaw issue. In the discussions presented below, soil and ground water are considered to be impacted or contaminated if they exceed the Table 1 Site Condition Standards. As previously noted, on this basis, EC, SAR, zinc, lead and PHC F4 were found to exceed their applicable MECP Table 1 Site Condition Standards (SCS) in soil, while cobalt and copper were found to exceed their applicable MECP Table 1 SCS. As a result, the above compounds in soil and groundwater were evaluated further in the DDRA.

As discussed, the Site is used for industrial/commercial use and is currently vacant. The Site is to be used for truck parking in the future, along with the construction of an on-site building. Therefore, the primary human receptors are workers at the Site. In the case of soil, there is the potential for direct contact with soil and the inhalation of dust. There is the potential for direct contact with groundwater as it may be used as a potable source. In the case of ecological receptors, the primary receptors are terrestrial plants, soil invertebrates, birds and mammals. In the case of soil, there is the potential for root uptake, direct contact, inhalation of dust, ingestion of food items and prey. In the case of groundwater given the minimum depth to groundwater (3.77 mbgs), there is no potential exposure for ecological receptors.

For the Human Health Risk Assessment (HHRA), further screening of the exceedances in soil and groundwater was completed with a comparison to the applicable MECP Table 2 (industrial/commercial, coarse soil, potable groundwater) human health component values, as the Table 1 SCS were only applicable for the identification of impacts at the Site given the requirement of the Township of Puslinch. For soil, the values for direct contact were used for comparison. In the case of soil, no exceedances were noted. In the case of lead, no human health component values are currently available. The MEPC has released updated TRVs for lead and these will be used to determine potential risks to risks at the Site due to exposure to soil. In the case of groundwater, cobalt

exceeded the human health component value associated with the ingestion of potable groundwater and will be evaluated further in the HHRA.

For the Ecological Risk Assessment (ERA), further screening of the exceedances in soil and groundwater was completed with a comparison to the applicable MECP Table 2 (industrial/commercial, coarse soil, potable groundwater) ecological component values. In the case of soil, lead exceeded for birds and mammals, while zinc exceeded for both terrestrial plants/soil invertebrates and birds and mammals requiring further assessment in the ERA. In the case of groundwater, no exceedances were noted, as such groundwater in association with ecological receptors will not be evaluated further in the ERA.

The HHRA concluded that no unacceptable risks were present in association with soil. In the case of groundwater, the calculated HQ was above the MECP's target HQ of 0.2 for cobalt and as a result it was concluded that there may be unacceptable risks from the ingestion of potable groundwater. Therefore, measures need to be in place to reduce or eliminate exposure to groundwater via the ingestion of potable groundwater. As a result, there is the requirement to have a restriction on the installation of potable wells at the Site. With this risk management measure in place no unacceptable risks are present due to groundwater at the Site.

The ERA concluded that in the absence of risk management measures, SIs for terrestrial plants and soil invertebrates were greater than one for zinc in soil. It may be inferred from this result that growth and reproduction of sensitive plants and soil invertebrates may be inhibited in areas of the Site with concentrations of zinc exceeding their associated TRVs. In the case of mammals and birds exposed to soil at the soil, in the absence of risk management measures, SIs for were greater than one for lead and zinc for the American woodcock. It may be inferred from this result that there is the potential for unacceptable risks to birds at the Site. As a result, there is the requirement to have capping of the impacted soil with 0.5 m of gravel or soil meeting the Table 1 SCS is required to mitigate potential risks to ecological health. With this risk management measure in place no unacceptable risks are present due soil at the Site.

With the recommended risk management measures in place, no unacceptable risks exist at the Site and the Site is suitable for continued industrial use without any remediation.

1 INTRODUCTION

Hugh Scobie o/a HS Group (HS Group) in association with BVD Real Estate Inc. ('the client') has prepared this due diligence risk assessment (DDRA) for the purpose of evaluating potential risks to human receptors for the property located at 7504 McLean Road, Puslinch, Ontario (the 'Site'). The RA is being conducted as part of due diligence and while the format generally follows that of a risk assessment conducted under Ontario Regulation 153/04 (O. Reg. 153/04) (as amended) that would be used to support a Record of Site Condition (RSC) the DDRA will not be submitted to the Ontario Ministry of the Environment, nor be used to support the filing of an RSC.

The risk assessment format will follow the general approach, analysis and protocol utilized in conducting a risk assessment under O.Reg. 153/04 (as amended), however a formal risk assessment document will not be submitted to the MECP for review, nor will it be used to support the filing of an RSC.

1.1 Risk Assessment Assumptions

The RA was prepared using the following assumptions:

- The site is currently vacant but will be developed to include a track parking area and an on-site building.
- The Table 1 Site Condition Standards have been used for the identification of impacts in soil and groundwater, as the Township of Puslinch requires its use as part of a bylaw issue
- The Site is considered to have potable ground water with coarse-textured soil with use for commercial/industrial purposes as defined under O.Reg.153/04 (as amended) resulting in the use of the MECP Table 2 Site Condition Standards for further screening of the identified impacts in soil and groundwater within the Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA).

1.2 Risk Management Requirements

Capping of impacted soil with 0.5 m of gravel or soil meeting the Table 1 SCS is required to mitigate potential risks to ecological health. Additionally, there is a requirement to restrict the installation of potable wells at the Site to mitigate risks to human health.

2 PROPERTY INFORMATION, SUMMARY OF ENVIRONMENTAL CONDITIONS AND IDENTIFICATION OF COCS

Site characterization involves assessing the degree and extent of contamination at the Site. Information is provided in the following sections regarding the site history, neighboring properties, current and where required future land uses, the geologic conditions at the Site, and the identification of the contaminants of concern.

The subject site is a rectangular shaped lot located in the northwest area of Puslinch, Ontario at 7504 McLean Road. The site is bound by vacant land located northeast and northwest and industrial buildings to the southwest and southeast of the site. The site is currently vacant land. The subject site area is located within the Mill Creek-Grand River watershed which contains Mill Creek and the Grand River. The site is zoned as being "Industrial" as quoted from the Township of Puslinch Comprehensive Zoning By-law No. 023-18 as amended and is located on the northwest side of McLean Road (Figure 1). Sub-surface intrusive investigations have been conducted at the Site by A&A Environmental Consultants Inc.. The investigations noted impacts of both soil and ground water (Figure 2). The impacts in soil were identified Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), zinc, lead and PHC F4. The impacts in groundwater were identified as cobalt and copper. Importation of impacted fill has been identified as the likely source of the exceedances noted in soil and groundwater.

2.1 Contaminants of Concern

According to O. Reg. 153/04 (as amended), any chemical detected at the risk assessment (RA) property that exceeds the applicable site condition standards (SCS) are considered to be a chemical of concern and are required to be assessed in the RA. Observed concentrations of chemicals in soil or ground water numerically greater than the standard were considered to exceed the standard. Furthermore, any chemicals detected at the RA property for which no applicable SCS is prescribed under the Regulation were also assessed in the RA.

The contaminants of potential concern (COPC) were identified based on exceeding the Table 9 ground water and soil SCS, as outlined under the Ministry's *Soil, Ground Water and Sediment Standards for Use Under XV.1 of the Environmental Protection Act* (MOE 2011a). The criteria for coarse-textured soil for a residential land use was used in the identification of COPCs.

In the case where any analytical results were reported as “below detection limit” or “non- detect,” the chemical was dropped from further consideration in the RA if the chemical could not be linked to historical site use. There is also high confidence that these parameters are not present on-site, regardless of whether the laboratory-reporting limit was greater than the screening criteria. The COPCs identified through the chemical screening process presented below are further evaluated in Section 3 (Human Health Risk Assessment). Chemicals retained for either quantitative and/or qualitative analysis are discussed in the human health detailed chemical screening sub-sections.

2.1.1 Selection of COPCs in Soil

The identified COPCs for soil are summarized in Table 2-1.

Table 2-1: Identification of COPCs in Soil

Parameter	Maximum Conc. (µg/g)	Table 1 SCS (µg/g)
Metals		
Lead	130	120
Zinc	678	290
PHCs		
PHC F4	439	120
Inorganics		
EC (mS/cm)	0.92	0.57
SAR	3.07	2.4

It is noted that the concentrations of lead, zinc, PHC F4, EC and SAR were above their applicable MECP Table 1 SCS for soil, and as such were carried forward for formal quantitative screening and assessment.

2.1.2 Selection of COPCs in Ground Water

The identified COPCs for ground water are summarized in Table 2-2.

Table 2-2: Identification of COPCs in Groundwater

Parameter	Maximum Conc. (µg/L)	Table 1 SCS (µg/L)
Metals		
Cobalt	4.97	3.8
Copper	6.6	5

It is noted that the concentrations of cobalt and copper were above their applicable MECP Table 1 SCS for groundwater, and as such were carried forward for formal quantitative screening and assessment.

3 HUMAN HEALTH RISK ASSESSMENT

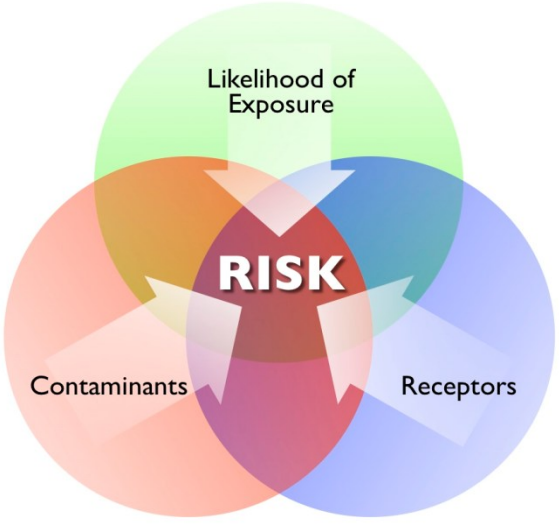
This section examines the potential human health risks associated with the presence of contaminants in soil and groundwater at the Site. While the risk assessment is not being used to support an RSC for the Site, the approach to completing a risk assessment at this contaminated site was still conducted according to risk assessment procedures outlined in Schedule C of O. Reg. 153/04.

3.1 Problem Formulation

Problem formulation provides the initial framework and methodology used to select compounds for evaluation in the human health risk assessment component and identifying the relevant components of the HHRA, including a qualitative description of exposed receptors and potential pathways that are summarized in the conceptual exposure model. In addition to providing a discussion of the human health conceptual site and exposure models, a discussion of the risk assessment objectives is also provided.

Risk assessment, in the context of properties potentially impacted by contaminants, is the process of estimating the likelihood of undesirable effects on human and ecological health resulting from exposure to chemical contaminants. Three components must be present for risks to human health to exist at contaminated sites impacted by chemicals (as illustrated in the graphic below):

- The chemical must be present at concentration sufficient to cause a possible adverse effect.
- A receptor (theoretical human receptor) must be present; and
- There must be a complete exposure pathway by which the receptor can come into contact with the chemical.



In general, there can only be a health concern or potential for risk when there is a complete link from a substance (e.g., a metal or volatile organic compound, etc.) through an environmental medium (e.g., air, water, soil) to a person (e.g., a visitor). Subsequently, for there to be a potential risk (i.e., represented

by the shaded section in the middle of the Venn diagram presented above), there must be three factors present: (1) a substance, (2) a receptor, and (3) an operable exposure pathway or route.

If there is no possible exposure to a chemical (e.g., an inorganic or non-volatile chemical found at significant depth), regardless of its inherent toxicity or potency or environmental concentration, there would be no potential for the development of an adverse human health effect. It is to say that without all three factors described above, there can be no risk. The Conceptual Exposure Model (CEM) for human receptors is predicted based on the above noted principles and is described in the following Section of the RA report.

3.1.1 Human Health Conceptual Site (Exposure) Model

The risk components identified above, namely contaminants of concern detected in on-Site media, exposure pathways, and receptors, as well as the current Site configuration, are combined to synthesize the CEM for the human health risk assessment. The CEM is used to focus the quantitative assessment to ensure that all the critical aspects of the RA are properly addressed. It uses the site-specific information as provided in Section 2 as its basis, combined with information presented in the following sections of the RA.

The development of the CEM was considered under the following headings in sections that follow:

- Contaminant screening for applicable human receptors.
- Release, transport, and intermediate transfer of COCs.
- Human exposure routes and pathways of concern; and
- Human health risk assessment receptors.

Based on the site characterization, chemistry, and the anticipated receptors on the Site, several exposure pathways will be assessed.

Figure 3 depicts the CEM in detail. The CEM identifies the complete exposure pathways where receptors may make direct contact with chemicals in soil or ground water through the three possible exposure pathways (ingestion, dermal contact, inhalation). The CEM was used as the basis for the quantitative, and qualitative risk assessment identifying the sources of chemicals, pathways or potential pathways, and receptor combinations that appear to be complete and, therefore, require an evaluation of the magnitude and nature of the risks present. Significant pathways were quantitatively assessed in the exposure assessment and risk characterization stages that follow.

As discussed, the Site is used for industrial/commercial use and is currently vacant. The Site is to be used for truck parking in the future, along with the construction of an on-site building. Therefore, the primary human receptors are workers at the Site. In the case of soil, there is the potential for direct contact with soil and the inhalation of dust. There is the potential for direct contact with groundwater as it may be used as a potable source.

From the environmental investigations conducted at the Site, some compounds were found to exceed the MECP Table 1 SCS in association with soil and groundwater. The maximum concentration of these compounds in soil and groundwater were used for the purposes of the identification of COCs for human

receptors. Further discussion of the relevant exposure pathways is provided in Section 3.2 (Exposure Assessment).

3.1.2 Identification of Chemicals of Concern for HHRA

In Section 2.3, COPCs were identified based on their presence in ground water at levels in excess of their applicable MECP Table 1 SCS. Additional screening for the identification of COCs was undertaken to establish those relevant for the HHRA. Additional screening was conducted by comparing the previously identified COPCs in soil and groundwater with the MECP Table 2 (industrial/commercial, coarse soil, potable groundwater) human health component values, as the Table 1 SCS were only applicable for the identification of impacts at the Site given the requirement of the Township of Puslinch. Table 3-1 provides the comparison of the COPCs to the MECP Table 2 SCS human health component values for the identification of the COCs for soil being carried forward in the HHRA, while Table 3-2 provides the comparison of the COPCs to the MECP Table 2 SCS human health component values for the identification of the COCs for groundwater being carried forward in the HHRA

Table 3-1: Identification of Contaminants of Concern in Soil for the HHRA

COPC	Maximum concentration detected in Soil (µg/g)	MECP Table 1 SCS (µg/g)	MECP Table 2 SCS - Human Health Component Value for Direct Contact (coarse-textured soil – Commercial) (µg/g)	COC for the HHRA?
Metals				
Lead	130	120	No Value	**Yes**
Zinc	678	290	57,000	No
PHCs				
PHC F4	439	120	42,000	No
Inorganics				No
EC (mS/cm)	0.92	0.57	Not applicable. Only relevant for terrestrial plants	No

COPC	Maximum concentration detected in Soil (µg/g)	MECP Table 1 SCS (µg/g)	MECP Table 2 SCS - Human Health Component Value for Direct Contact (coarse-textured soil – Commercial) (µg/g)	COC for the HHRA?
SAR	3.07	2.4	Not applicable. Only relevant for terrestrial plants	No

No exceedances were noted, however, in the case of lead, no human health component values are currently available. The MEPC has released updated TRVs for lead and these will be used to determine potential risks to risks at the Site due to exposure to soil.

Table 3-2: Identification of Contaminants of Concern in Groundwater for the HHRA

COPC	Maximum Groundwater Concentration (ug/L)	MECP Table 1 SCS (µg/g)	MECP Table 2 SCS - Human Health Component Value for the Ingestion of Potable GW (coarse-textured soil – Commercial)	COC for the HHRA?
Metals				
Cobalt	4.97	3.8	3	**Yes**

COPC	Maximum Groundwater Concentration (ug/L)	MECP Table 1 SCS (µg/g)	MECP Table 2 SCS - Human Health Component Value for the Ingestion of Potable GW (coarse-textured soil – Commercial)	COC for the HHRA?
Copper	6.6	5	1000	No

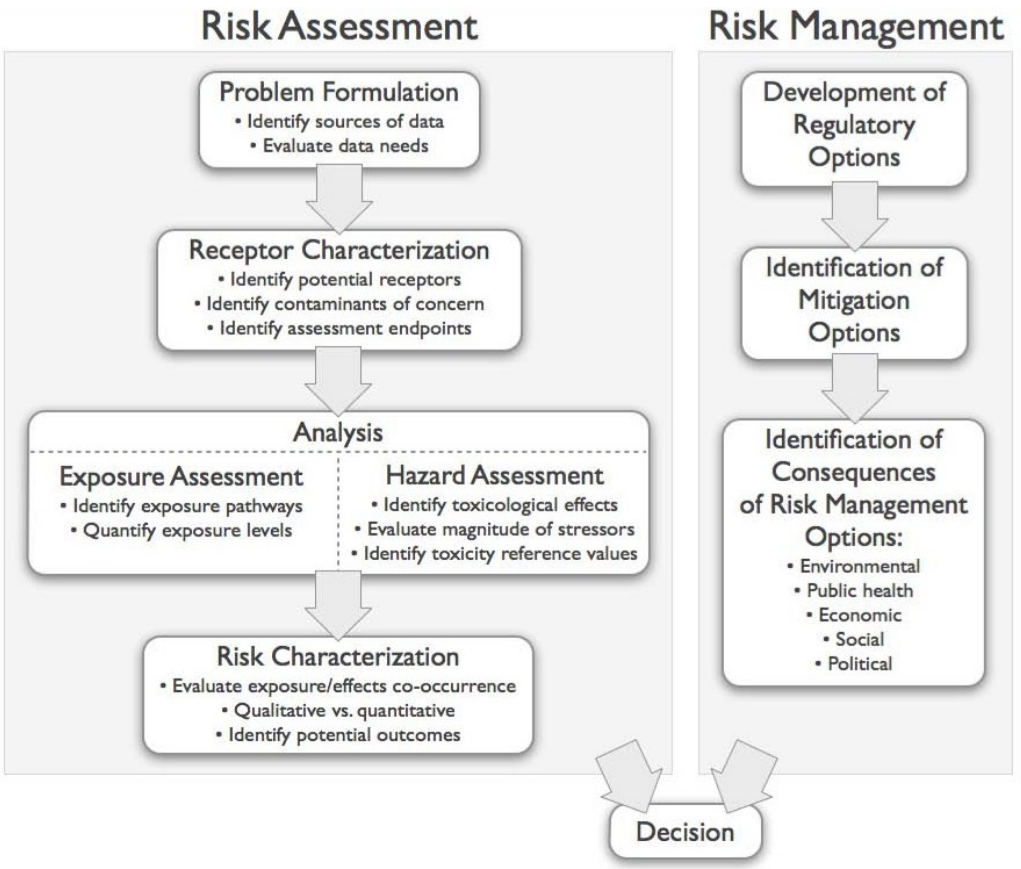
Cobalt was noted to exceed the human health component value associated with the ingestion of potable groundwater and will be evaluated further in the HHRA.

3.1.3 Risk Assessment Objectives (Human Health Component)

The objectives of the human health risk assessment component were to estimate the potential health risks and potential hazard estimates to human receptors that may be present at the Site. Following the formal determination of risk and hazard estimates for various receptors that may contact the chemicals of potential concern through the various source-to-receptor pathways.

Receptors to be considered in the HHRA included residents (all ages). Based on an understanding of the site characteristics and distribution of COCs in soil and ground water as described in Section 2, pathways of exposure included only the inhalation of indoor air as a complete pathway.

A quantitative estimate of potential exposure and commensurate risk was carried out for the receptors and pathways identified in the following sections of this RA. The framework for carrying out the risk assessment (represented in the graphic below) is considered to be standard, and follows guidance developed by MOECC (2011b), U.S EPA (2004).



Modified from U.S. EPA (2004)

A standard RA approach was used. Point-of-exposure doses/concentrations of COCs were modeled for the various human receptors using standard exposure models. As described above, the receptors examined in the HHRA were:

- Workers (i.e., adults).

The sole pathway of exposure examined in this HHRA was the inhalation of indoor air for workers. Exposure point concentrations received by resident receptors as exposure doses were compared to relevant toxicity reference values (TRV) obtained from MOECC (2011b), if not available, other recognized regulatory jurisdictions (e.g., US EPA).

3.2 Exposure Assessment

The exposure assessment component of the HHRA is intended to estimate potential exposure for individuals (i.e., receptors) that could be expected to inhale indoor air due to impacts identified in soil and groundwater. It identifies the receptors and the exposure pathways that could contribute to exposures and uses this information to estimate the potential exposure for each receptor. The exposure

assessment also provides an indication of the relative contribution that each exposure pathway makes to the total daily exposure experienced by each receptor. The exposure assessment can be summarized by these three basic components:

1. Receptor Characteristics.
2. Pathway Analysis; and
3. Exposure Estimates.

Each of the three components of the exposure assessment are detailed below.

3.2.1 Receptor Characteristics and Pathway Analysis

As discussed, the Site is used for commercial use. Therefore, the primary receptors are workers at the Site. In the case of soil, as determined through the additional screening in Section 3.1.2 the only complete exposure pathway is the inhalation of indoor air due to impacts in both soil and groundwater.

Workers

As discussed previously, Workers may be exposed to the identified COCs in soil in association with direct contact and the inhalation of dust and groundwater via the ingestion of potable groundwater. The rationale for the identification of these exposure pathways for the Workers is provided in Table 3-3.

Table 3-3: Summary of Potential Pathways of Exposure for Workers

Potential pathway of exposure	Complete exposure pathway (Yes/No)	Comment
Soil Ingestion	Yes	No human health component value for direct contact with soil was available for lead
Soil Inhalation	Yes	No human health component value for direct contact with soil was available for lead
Soil Skin Contact	Yes	No human health component value for direct contact with soil was available for lead
Ground Water Ingestion	Yes	The groundwater is not used as a source of potable water
Ground Water Skin Contact	Yes	The groundwater is not used as a source of potable water
Surface Water Ingestion	No	It is unlikely that a worker would be exposed to surface water

Potential pathway of exposure	Complete exposure pathway (Yes/No)	Comment
Surface Water Skin Contact	No	It is unlikely that a worker would be exposed to surface water
Garden Produce Ingestion	No	There is no garden produce present at the Site for consumption.
Livestock Ingestion	No	As the Site is located in a mainly commercial area no livestock will be present.
Vapour Inhalation	No	No COCs are volatile
Vapour Skin Contact	No	No COCs are volatile
Other Pathways	No	

3.2.2 Exposure Estimates

As discussed previously, Workers may be exposed to the identified COCs in soil in association with direct contact and the inhalation of dust and groundwater via the ingestion of potable groundwater. Potential exposures for direct contact with soil as well as soil inhalation have been calculated. The maximum groundwater concentrations have been used as the exposure estimate for the potential ingestion of the potable groundwater.

3.2.3 Receptor Exposure Estimates

The estimated exposures of workers to soil have been provided in Table 3-4.

Table 3-4: Exposure Estimates from Soil COC – Ingestion, Dermal Contact and Dust Inhalation

COC	Soil Incidental Ingestion & Dermal Contact (mg/kg-day)	Soil Dust Inhalation (mg/kg-day)	Total Direct Contact Exposure from Soil (mg/kg-day)
Lead	7.57E-05	5.55E-09	7.57E-05

The estimated exposures of workers to groundwater have been provided in Table 3-5.

Table 3-5: Exposure Estimates from Groundwater COC – Ingestion

COC	Groundwater Ingestion (ug/L)
Cobalt	4.97

3.3 Toxicity Assessment

The purpose of the toxicity assessment is to identify both the types of adverse health effects a COC may potentially cause, as well as the relationship between the magnitude of COCs to which receptors may be exposed (dose) and the likelihood of an adverse effect (response). This is called the dose-response relationship. In addition, the toxicity assessment involves the classification of the potential toxicological effects of chemicals as carcinogenic or non-carcinogenic, and the subsequent estimation of the amounts of chemicals that can be received by human receptors without experiencing adverse effects on their health. A toxicity assessment is conducted for all COCs and considers possible modes of toxicity associated following different routes and durations of exposure. The toxicity assessment provides an estimate of how much chemical exposure may occur without unacceptable health effects occurring from lifetime exposure (or significant portion of a lifetime) and provides a basis to interpret exposure rates.

In general, carcinogenic chemicals are considered to work through a non-threshold mechanism of action. This implies that there is no dose below in which an adverse effect (i.e., the development of cancer) will not occur. Current regulatory guidance considers that any exposure to a genotoxic carcinogen is considered to be associated with some level of risk. At very low doses, the probability that an adverse effect (i.e., cancer) will occur is extremely small (e.g., 1 in 1 million lifetime cancer risk). The probability of developing cancer increases as the dose increases. Because it is possible for cancer to develop after exposure to a chemical has ceased (i.e., a latency period), the toxicity values are expressed as the probability of developing cancer over a lifetime. This is based on the assumption that the risk associated with an elevated exposure to a carcinogenic chemical for a short period of time is equivalent to the risk associated with a lower level of exposure over a longer period of time.

3.3.1 Hazard Assessment (Nature of Toxicity)

Chemicals are classified based on their mode of action (i.e., threshold versus non-threshold substance). For substances exhibiting a threshold for toxicity, an acceptable level of exposure at or below which no adverse effects are anticipated is established. For non-threshold-acting chemicals, any level of exposure is assumed to theoretically pose a potential risk, and a slope factor (or in the case of a volatile compound, a unit risk factor) is used to predict risks from estimated exposures. Carcinogenic substances, which act through a mechanism involving damage to the genetic material (i.e., DNA) are usually considered to be non-threshold-acting substances. The following sections provide a summary of the effects associated with exposure to each of the identified COCs.

3.3.2 Dose Response Assessment

Dose-response assessment is the process of characterizing the relationship between the dose of an agent administered or received and the incidence of an adverse health effect in the exposed population. The intensity of exposure and potency of the agent play key roles in understanding the potential adverse health effects.

Potency values, generally established by regulatory agencies, describe the relative toxicity of carcinogenic substances and are typically expressed as cancer slope factors (CSFs). For the non-carcinogenic substances, oral reference doses (RfDs) and tolerable daily intakes (TDIs) are used as an indicator of the relative toxicity of an agent.

The MOECC (2011b) and U.S. EPA were the primary source of all toxicological dose-response data for this assessment, in accordance with MOECC guidance (MOE 2011b). In several instances, U.S. EPA values were chosen over those published by MOECC because of the toxicity criteria were based on more recent studies or more robust assessments of the original toxicology data available for the chemical of concern. A list of TRV values used in the assessment is provided in Table 3-6.

Many chemicals exhibit both types of dose-response relationships, exhibiting different adverse effect end points. Some of the COCs that are the subject of this assessment are assumed to have shown both threshold and non-threshold adverse effects. It is appropriate to assess both health endpoints in this type of risk assessment, to ensure that both potential risk and hazard are properly addressed. A list of TRV values used in the assessment is provided in Table 3-6.

The following definitions have been extracted from the U.S. EPA's Integrated Risk Information System (IRIS) documentation:

- Reference Concentration (RfC): An estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a No Observed Adverse Effect Level (NOAEL), Lowest Observed Adverse Effect Level (LOAEL), or benchmark concentration, with uncertainty factors generally applied to reflect limitations of the data used. This estimate is generally used in U.S. EPA's non-cancer health assessments.

- Reference Dose (RfD): An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a NOAEL, LOAEL, or benchmark dose, with uncertainty factors generally applied to reflect limitations of the data used. This estimate is generally used in U.S. EPA's non-cancer health assessments.

- Slope Factor: An upper bound, approximating a 95 percent confidence limit, on the increased cancer risk from a lifetime exposure to an agent. This estimate, usually expressed in units of proportion (of a population) affected per mg/kg/day, is generally reserved for use in the low-

dose region of the dose-response relationship, that is, for exposures corresponding to risks less than 1 in 100.

- Unit Risk: The upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 μg/L in water, or 1 μg/m^3 in air. The interpretation of unit risk would be as follows: if unit risk = 1.5 x 10^{-6} per μg/L, 1.5 excess tumors are expected to develop per 1,000,000 people if exposed daily for a lifetime to 1 μg of the chemical in 1 litre of drinking water. Cancer slope factors (CSF) are generally derived using mathematical models that, in most cases, extrapolate results from animal studies conducted at high doses to low doses that may occur in human populations. This approach assumes that a threshold for the carcinogenic low dose response does not exist and that some risk is associated with any dose of the chemical. It should also be noted that for many compounds carcinogenicity has only been demonstrated in experimental animal models. Slope factors for each compound are derived for the most sensitive or affected organ or system (the target) in the studied species. In cases where only animal data are available, it is generally assumed that the target organ or system would be the same for a human subject. The limitations of using animal data for dose response assessment have been discussed in many publications over the past 20 years (Paustenbach 1989; Paustenbach 1990; Crump 2000). In addition to CSFs, toxicity values for carcinogens can also be expressed in terms of risk per unit concentration of the substance in the medium in which human contact occurs (U.S. EPA 1989). The chemical-specific unit risk value (or unit risk factor: URF) defines the relationship between air concentration and carcinogenic response. This potency value represents the upper bound estimate of the probability of response per unit concentration of the chemical in air over a 70-year lifetime.

Many chemicals exhibit both types of dose-response relationships, exhibiting different adverse effect end points. Some of the COCs that are the subject of this assessment are assumed to have shown both threshold and non-threshold adverse effects. It is appropriate to assess both health endpoints in this type of risk assessment, to ensure that both potential risk and hazard is properly accounted for.

A full list of TRV values used in the HHRA are presented in Table 3-6 below:

Table 3-6: Summary of TRV Values Used in the HHRA

COC	RfD (mg/kg/d)	Endpoint	Source
Metals			
Lead	6.3E-04	increased prevalence of chronic kidney disease and increased systolic blood pressure as well as protecting the fetus from neurodevelop	EFSA, 2013

COC	RfD (mg/kg/d)	Endpoint	Source
		mental effects	

3.4 Risk Characterization

The purpose of the risk characterization is to estimate potential risks associated with Site contaminants for each exposure scenario. The findings of the dose-response assessment are integrated with the results of the exposure assessment to derive quantitative estimates of risk and hazard for carcinogenic and non-carcinogenic COCs, respectively. Therefore, risk characterization is the step in the risk assessment process that combines the results of the exposure assessment and the toxicity assessment for each COC to estimate the potential for carcinogenic and non-carcinogenic human health effects from chronic exposure to that constituent.

The risk characterization compares estimated site-specific risk levels to target risk levels. For this risk assessment, the allowable incremental lifetime target cancer risk is set at 10^{-6} (1 in 1,000,000). In addition, MOE's target non-cancer hazard index is set at 0.2 (0.5 for PHCs) to allow for the potential exposure to other contaminants unrelated to the site.

3.4.1 Approach to Risk Characterization

For the assessment of non-carcinogenic health effects, the calculated acceptable daily dose (ADD) is compared to the Tolerable Daily Intake (TDI). The TDI is defined as an estimate of compound intake that is unlikely to cause adverse health effects even if exposure occurs for an entire lifetime.

For each exposure pathway, the predicted concentration or dose rate is compared to the reference concentration (RfC) or tolerable daily intake/reference dose (TDI/RfD) for non-carcinogens. The ratio of the predicted exposure to the TDI is termed the hazard quotient (HQ):

$$HQ = ADD / TDI$$

where: ADD = Average daily dose; estimated daily intake averaged over the exposure period (mg kg^{-1} d^{-1})

TDI = Tolerable daily intake (mg kg^{-1} d^{-1} or mg m^{-3}).

In the absence of a multi-media exposure assessment, the limit for acceptable risk is set at 0.2 for all COCs. The use of an HQ of 0.2 for the majority of COCs assumes that 80% of allowable exposure occurs via other exposure pathways (i.e., exposure to the COCs from food, consumer products, etc.). While the allocation factor can be adjusted based on a multi-media exposure assessment, this was not included as part of this assessment and therefore the 20% source allocation factor was retained in the investigation.

For carcinogens that are assumed to operate via a non-threshold mechanism of action, the risk characterization identifies the incremental cancer risk associated with a particular exposure pathway. Incremental lifetime cancer risks are a unitless value that expresses the probability of developing cancer

for a specified level of exposure averaged over a lifetime. Acceptable incremental lifetime risk is defined as 10^{-6}.

Cancer risks as a result of exposure to several of the chlorinated VOCs (e.g., tetrachloroethylene and trichloroethylene in ground water) were calculated as the product of the predicted exposures and the TRV. The risk characterization is expressed as:

ILCR = Dose Rate x TRV

where: ILCR = Incremental lifetime cancer risk;

Dose rate = Absorbed dose rate received from a contaminant via an exposure pathway (mg/kg/day); and

TRV = Non-threshold acting toxicity reference value $(ug/m^3\ day)^{-1}$.

As recommended by MOECC, an incremental lifetime cancer risk of less than 1 in one million (1×10^{-6}) is considered protective of human health and the associated risk from the contaminant of concern via that exposure pathway are considered to be acceptable.

3.4.2 Interpretation of Health Risks

In the following section, the risks attributable to each of the pathways of exposure are presented. These include all complete pathways determined in the Exposure Assessment section.

3.4.2.1 Quantitative Interpretation of Health Risks

Quantitative Interpretation of Health Risks – Workers

Table 3-7 provides the interpretation of risks due to direct contact with soil.

Table 3-7: Interpretation of Risks – Workers – Direct Contact with Soil

COC	Maximum Soil Concentration (µg/g)	Non-Cancer Hazard		
		Total Conc. (mg/kg/day)	Oral TRV (mg/kg/day)	HQ
Lead	130	7.57E-05	6.30E-04	1.20E-01

The calculated HQ is below the MECP's target HQ of 0.2 and as a result it can be concluded that there are no unacceptable risks from direct contact with soil.

Table 3-8 provides the interpretation of risks due to the inhalation of dust.

Table 3-8: Interpretation of Risks – Workers – Inhalation of Dust

COC	Maximum Soil Concentration (µg/g)	Non-Cancer Hazard		
		Total Inhaled Conc. (mg/kg/day)	Inhal. TRV (mg/kg/day)	HQ
Lead	130	5.55E-09	6.30E-04	8.82E-06

The calculated HQ is below the MECP's target HQ of 0.2 and as a result it can be concluded that there are no unacceptable risks from the inhalation of dust.

Table 3-9 provides the interpretation of risks due to the ingestion of groundwater.

Table 3-9: Summary of Human Health-Based Standards for Potable Groundwater

COC	Maximum Groundwater Concentration (µg/L)	GW-1 Human Health Component Value	HQ
Cobalt	4.97	3	1.66

The calculated HQ is above the MECP's target HQ of 0.2 and as a result it can be concluded that there may be unacceptable risks from the ingestion of potable groundwater. Therefore, measures need to be in place to reduce or eliminate exposure to groundwater via the ingestion of potable groundwater.

4 ECOLOGICAL RISK ASSESSMENT (ERA)

An ecological risk assessment (ERA) was conducted to characterize the risks for ecological receptors from exposure to COCs in soil and groundwater at the Site. The ERA was conducted generally following the ecological risk assessment procedures as prescribed by the Ontario MOECC guidance document, Procedures for the Use of Risk Assessment under Part XV.1 of the Environmental Protection Act, and O. Reg. 153/04 (as amended).

4.1 Problem Formulation

The Problem Formulation step of the ERA defines the issues at the Site as they relate to ecological receptors. A risk assessment must be based on a fundamental understanding of the Site conditions, the potential exposure pathways, and the characteristics of the receptors present at the Site. The Site conditions were discussed previously in Section 2 of this report. A discussion is presented below concerning the development of the ecological Conceptual Site Model (CSM) for the Site, including examination of potential receptors and exposure pathways.

4.1.1 Ecological Conceptual Site Model

The site characterization (Section 2) indicated that lead, zinc, PHC F4, EC and SAR were present in soil at concentrations exceeding the Table 1 SCS. In the case of groundwater, cobalt and copper were present above Table 1 SCS.

There are several environmental transport pathways that may apply at the Site. Volatile chemicals may evaporate from shallow soil and groundwater to the atmosphere. Once in the atmosphere, volatile chemicals are rapidly diluted such that exposure to ecological receptors is typically negligible. Chemicals with sufficient aqueous solubility, including some inorganic parameters, a few PAHs, and VOCs may undergo subsurface transport in groundwater.

The Site is an industrial property surrounded by predominantly industrial land uses. The site is currently vacant. The primary receptors are terrestrial plants, soil invertebrates, birds and mammals. In the case of soil, there is the potential for root uptake, direct contact, inhalation of dust, ingestion of food items and prey. As will be noted in Section 4.1.3.2, no COCs are present in groundwater at the Site with respect to the ERA, as such off-site aquatic receptors are not at risk due to the impacts identified at the risk assessment site.

The following terrestrial ecological receptors were identified as on-Site Valued Ecosystem Components (VECs):

- Terrestrial plants, including trees, shrubs, herbs, and grasses that potentially may be present under a future land use.

- Soil invertebrates, represented by earthworms.

- Mammals, represented by the herbivorous meadow vole, insectivorous short-tailed shrew and the red fox; and

- Birds, represented by the herbivorous red-winged blackbird, insectivorous American woodcock and the carnivorous red-tailed hawk.

Soil COCs are assumed to be (potentially) available to terrestrial plants and soil organisms via root uptake and direct contact pathways, and to wildlife via dermal contact and via ingestion of soil and food items that have accumulated COCs from soil. Terrestrial receptors may be exposed to COCs via the inhalation of dust. Based on the minimum depth to groundwater (3.77 mbgs), direct contact/root uptake pathways for groundwater are considered incomplete for terrestrial plants and soil organisms.

A graphical illustration of the ecological conceptual exposure model is presented in Figure 4.

4.1.2 Risk Assessment Objectives

The objectives of the ERA were to:

- Assess the potential risks, is any, related to COCs identified in on-Site soil and groundwater to on-Site terrestrial receptors (namely terrestrial plants, soil invertebrates, terrestrial mammals and terrestrial birds).

- Assess the risks due to direct contact with COCs in soil (invertebrates)

- Assess the risks to plants exposed to COCs in soil by root contact/uptake

- Assess the risks to terrestrial mammals and birds exposed to COCs in soil by direct contact and through prey/food ingestion

- The assessment of exposure and risks will be conducted both qualitatively and quantitatively

- The ERA assumes a full-depth approach for assessing exposures and risks.

- Both qualitative and quantitative assessment of risks were completed in the ERA with a qualitative assessment being completed for plants and soil invertebrates and a more quantitative assessment being completed for mammals and birds.

4.1.3 Contaminants of Concern for ERA

As described in Section 2, several contaminants in soil and groundwater were retained as COCs that exceeded the Table 1 SCS. COCs were compared to the Table 2 ecological component values, calculated through the MGRA model.

4.1.3.1 COCs in Soil

Soil COCs requiring quantitative evaluation in the ERA were identified by screening maximum concentrations against the applicable Table 2 SCS (coarse textured soil) component values for direct contact (plants and soil organisms), and ingestion (mammals and birds). The screening of soil parameters is summarized in Table 4-1. No screening to the soil leaching to groundwater component value as Section 4.1.3.2 notes no exceedances in groundwater at the Site.

Table 4-1: Screening of Soil COCs for Quantitative Evaluation in ERA

Chemical Parameter	Maximum Soil Concentration (ug/g)	Plants & Soil Org.	Mammals & Birds	COC (Yes/No)
Metals				
Lead	130	1,100	32	**Yes, mammals and birds**
Zinc	678	600	340	**Yes, plants/soil organisms, mammals and birds**
PHCs				
PHC F4	439	3,300	No value	No

Chemical Parameter	Maximum Soil Concentration (ug/g)	Plants & Soil Org.	Mammals & Birds	COC (Yes/No)
Inorganics				
EC (mS/cm)	0.92	1.4	Only applicable to terrestrial plants	No
SAR	3.07	12	Only applicable to terrestrial plants	No

It is noted that lead and zinc had exceedances of their ecological component values and will be assessed further in the ERA. In the case of PHC F4 for mammals and birds, PHCs are not of concern to these receptors as PHCs do not accumulate to any significant degree in these receptors. As a result, PHC F4 will not be evaluated further in the ERA.

4.1.3.2 COCs in Groundwater

To identify COCs requiring quantitative evaluation in the ERA, maximum concentrations of COCs were screened against the GW3 component value used to derive the Table 2 SCS (MOE 2011b). The GW3 component value refers to the pathway involving discharge of groundwater to surface water and is intended to protect aquatic receptors. The GW3 value also is considered to offer sufficient protection for terrestrial receptors (plants, soil invertebrates, mammals, birds). In developing the generic standards, the MOECC noted that GW3 values are "assumed to provide a sufficient degree of protection to plants, soil organisms, mammals and birds such that separate calculations for these receptors for ingestion or exposure to shallow ground water or ground water seeps is not needed" (MOE 2011b). However, given the minimum depth to groundwater at the site of 3.77 mbgs, direct contact with the groundwater is not expected, with this pathway not being examined further in the ERA.

The secondary screening of COCs using the ecological component value for groundwater is presented in Table 4-2.

Table 4-2: Screening of Groundwater COCs for Quantitative Evaluation in ERA

Chemical Parameter	Maximum Groundwater Concentration (ug/L)	Table 2 GW3	COC (Yes/No)
Cobalt	4.97	66	No
Copper	6.60	87	No

No exceedances were noted in association with groundwater at the Site. As a result, groundwater will not be examined further in the ERA as no unacceptable risks are present.

4.2 Receptor Characterization

4.2.1 Identification of Potential Receptors

Valued Ecosystem Components (VECs) are receptors that have an intrinsic, economic, or social value. VECs are typically selected based on surveys of the site and knowledge of receptors typically found in similar environments.

With the anticipated absence of ecological habitat at the Site following redevelopment for residential use, potential ecological receptors are limited to plants and soil organisms typically found in ornamental gardens or landscaping, as well as urban-adapted wildlife. The following ecological receptors were identified as VECs:

- Terrestrial plants.
- Soil invertebrates (earthworm).
- Mammals: herbivorous meadow vole, insectivorous short-tailed shrew and red fox.
- Birds: herbivorous red-winged blackbird; insectivorous American woodcock and carnivorous red-tailed hawk.

Descriptions of VECs are provided below.

4.2.1.1 Terrestrial Plants

Future land use is assumed to support typical urban plants including grass, ornamental shrubs, and trees. As autotrophs, plants are the foundation of any terrestrial ecosystem, including those heavily modified or influenced by humans. Consistent with MECP guidance, plants were assessed as a group, rather than a separate species. Plants are potentially exposed to COCs in soil via root uptake and root contact.

4.2.1.2 Soil Invertebrates

Soil at the Site is assumed to support indigenous soil invertebrates such as earthworms, grubs, arthropods, etc. In terms of sensitivity to toxicants, earthworms are considered to be one of the most sensitive receptors for soil contaminants. Earthworms are in near-constant direct dermal contact with soil. Earthworms are probably the most important soil invertebrate in promoting soil fertility (Edwards 1992). The feeding and burrowing activities of worms break down organic matter and release nutrients and improve aeration, drainage, and aggregation of soil. Earthworms are also important components of the diets of many higher animals. Due to their importance in a healthy ecosystem, as well as their ubiquity in the environment, earthworms were selected as a representative surrogate for all soil invertebrate species.

4.2.1.3 Meadow Vole

Portions of the Site under some future land use (i.e., landscaped areas) may be suitable for supporting small herbivorous mammals. Of the mammals that may be present, voles are most likely to receive relatively large doses of COCs, as they have a small home range (0.083 ha; U.S. EPA 1993) and therefore are likely to spend more time within contaminated areas and consume a relatively high proportion of soil in their diet.

The meadow vole (Microtus pennsylvanicus) was chosen as a representative surrogate for small herbivorous mammals that may be found at the Site. Voles are small (44 g; Sample and Suter 1994) herbivorous rodents found throughout Canada and the U.S. wherever there is grass cover. The meadow vole makes its burrows along surface runways in grasses or other herbaceous vegetation. Voles inhabit grassy fields, marshes, and bogs (Getz 1961). Microtus voles consume green vegetation, sedges, seeds, roots, bark, fungi, insects, and animal matter. Meadow voles favor green vegetation when it is available and consume other foods more when green vegetation is less available (Riewe 1973; Johnson and Johnson 1982; Getz 1985). Although there is some evidence of food selection, meadow voles generally eat the most common plants in their habitat (Zimmerman 1965). The overall ingestion rate of meadow voles has been estimated to be 0.005 kg/day (Sample and Suter 1994).

4.2.1.4 Short-tailed Shrew

The shrew is proposed as a VEC representative of small omnivorous mammals. The northern short-tailed shrew (Blarina brevicauda) is the most widespread shrew species in southern Canada and the north-central and northeastern U.S. (George et al. 1986)). Shrews are an important component of the diet of many raptors (Palmer and Fowler 1975) and are also prey for carnivores such as fox and weasels (Buckner 1966). Shrews inhabit a wide variety of habitats and are common in areas with abundant vegetative cover (Miller and Getz 1977). Shrews burrow in the upper layers of soil. Underground runways and nests are usually constructed within the upper 10 cm of soil (George et al. 1986). The diet of the short-tailed shrew consists of small arthropods such as grasshoppers and beetles, worms, and limited amounts of seeds and berries (Sample and Suter 1994).

4.2.1.5 Red Fox

The red fox (Vulpes vulpes) was selected as a VEC representing larger carnivorous/omnivorous mammals. Red foxes are abundant throughout North America, except in parts of the central and southwestern U.S. Red foxes are approximately 56 to 63 cm in length, and weigh 3 to 7 kg. Red fox prey extensively on small rodents such as meadow vole, field mice, and hare, but also consume game birds, insects, and occasionally fruit, berries, seeds, and nuts (Palmer and Fowler 1975). The home range of the red fox varies considerably according to landscape; in a non-urban area, home ranges can be as large as 3,000 ha (U.S. EPA 1993).

4.2.1.6 Red-winged Blackbird

The red-winged blackbird (Agelarius phoeniceus) is a passerine bird very common near fresh water marshes, lakes, and rivers across Ontario during summer months. The red-winged blackbird inhabits open grassy areas and prefers wetlands, particularly if cattail (Typha) is present. It is also found in dry upland areas, where it inhabits meadows, prairies, and old fields. Given that a Creek is located approximately 120m west of the Site, and the red-winged blackbird also inhabits upland areas, the presence of this

species at the Site is possible. The red-winged blackbird nests in cattails, rushes, grasses, sedge, or in alder or willow bushes over the water. The most sensitive life stage of this species (developmental stage) is spent in Ontario. During most of the year, the red-winged blackbird is herbivorous or granivorous, consuming primarily grains and seeds. However, during breeding seasons, insects such as dragonflies, damselflies, butterflies, moths, and flies form a significant fraction of the diet. Consistent with assumptions employed by the Ministry in the development of the generic SCS, the red-winged blackbird was assumed in the ERA to be strictly herbivorous. The red-winged blackbird was selected as a surrogate for all herbivorous passerine birds that may be found at the site.

4.2.1.7 American Woodcock

The American woodcock (Turdus migratorius) was selected to represent birds that would consume a diet comprised of a significant amount of soil invertebrates. The MECP has adopted the American woodcock to represent omnivorous birds in Ontario. The American woodcock inhabits "both woodlands and abandoned fields, particularly those with risk and moderately to poorly drained loamy soils, which then don't support abundant earthworm populations" (US EPA, 1993). The American woodcock was selected as a surrogate for all omnivorous or insectivorous passerine birds that may be found at the Site.

4.2.1.8 Red-Tailed Hawk

The red-tailed hawk was considered for assessment and was assumed to consume a diet entirely composed of small mammals. The red-tailed hawk was included in the derivation of the component values protective of mammals and birds. However, only the red-winged blackbird and American woodcock were selected for quantitative assessment in the ERA as these birds have smaller home ranges than larger birds (e.g., red-tailed hawk) and are anticipated to forage all food items from the site. Using smaller birds as a surrogate for other larger species potentially present on-site provides a conservative quantitative estimate of chemical dosage that is likely greater than other species present on the site.

4.3 Exposure Assessment

The exposure assessment consists of the pathway analysis, which provides a summary of the complete exposure pathways evaluated in the ERA, and the exposure estimate, which determines the exposure of the terrestrial VECs to the COCs identified at the Site.

4.3.1 Pathway Analysis

The potential exposure pathways for COCs in soil and groundwater to VECs are discussed in the following section.

4.3.1.1 Terrestrial Plants and Soil Invertebrates

The primary pathway from soil and groundwater exposure for terrestrial plants on the Site is through root uptake and/or direct contact with the impacted media. Incidental soil ingestion, and dermal contact by soil invertebrates is the predominant pathway. The vapour (sourced from volatile COCs in soil) inhalation by soil invertebrates is a potential pathway of exposure but expected to be negligible and therefore not considered further in the ERA. The dispersion of fugitive dust and inhalation of particulates is considered to be a potential exposure pathway, however there are no toxicological values upon which

to either qualitatively or quantitatively evaluate this exposure pathway. The uptake of soil by food items and the subsequent ingestion of food items by vegetation and/or soil organisms as well as mammals and birds are considered to be a potential exposure pathway and is included in the ERA. The following exposure pathways were quantitatively evaluated within the ERA:

- Root uptake from soil for terrestrial plants
- Incidental soil ingestion, and dermal contact with soil-by-soil invertebrates

4.3.1.2 Mammals and Birds

Although dermal exposure through direct contact with soil may be a complete exposure pathway for mammals and birds, it is generally considered to be insignificant due to the low frequency and duration of exposures. Additionally, the information required to estimate dermal exposure of mammals and birds is not available. Fur on mammals is believed to reduce exposure by limiting contact with skin and the contaminated media. Consequently, dermal contact will not be quantitatively assessed for mammals and birds. The dispersion of fugitive dust and inhalation of particulates are potential exposure pathways but considered to be negligible and therefore not considered further in the ERA. The primary route of exposure for mammals and birds is via the ingestion of food/prey that may have accumulated contaminants from soil and groundwater, as well as incidental ingestion of soil during the consumption of food items or through interactions with soil (e.g., burrowing activities). The following exposure pathways are qualitatively evaluated within the ERA:

- Ingestion of impacted food/prey (i.e., plant and animal tissue) by terrestrial mammals and birds
- Incidental ingestion of soil

4.3.1.3 Exposure Estimates

This section consists of assessing the exposure of aquatic and terrestrial VECs to the COCs identified in soil and groundwater. Table 5-4 provides the exposure estimates for COCs in soil at the site.

Table 4-3: Exposure Estimates for COCs in Soil

Chemical Parameter	Exposure Estimates for Soil (mg/kg)
Lead	130
Zinc	678

4.4 Hazard Assessment

The hazard assessment involves identifying screening benchmarks and TRVs used in the ERA. These were selected to be protective of ecological receptors and are based on changes to growth, reproduction, or survival. The relevant adverse ecological effects are provided in the MECP Rationale Document (MOE 2011b).

4.5 Risk Characterization

4.5.1 Interpretation of Ecological Risks

The assessment of potential risks to ecological receptors, defined as the screening index (SI), was determined by dividing the REM by the ecological component value as shown in the following equation:

Where:

SI = Screening Index [-]

REM = Reasonable Estimates of the Maximum Concentrations [µg/g or µg/L]

Ecological Component = Applicable ecological component value for the COC [µg/g or µg/L]

Conservative uncertainty factors have been incorporated into the ecological component values for each COC. The calculated SIs were compared with an acceptable value of 1. If the SI of a COC is less than or equal to 1, it is unlikely to pose an adverse health risk to the exposed ecological receptors on the site, while a further examination of the exposure pathways is needed if it exceeds.

4.5.2 Quantitative Interpretation of Ecological Risks

A quantitative evaluation of potential risk was undertaken for the on-site receptors (vegetation, soil organisms, mammals, and birds). Exposures to soil COCs were assessed using the SI approach. If the maximum concentrations of the COCs are greater than the applicable ecological component values (i.e. SI > 1), they would require measures to decrease or eliminate exposure.

4.5.3 Qualitative Interpretation of Ecological Risks

Terrestrial plants are potentially exposed to COC in soil via root uptake (direct contact) and soil invertebrates are exposed via direct contact. Exposure estimates for plants and soil invertebrates were based on the maximum concentrations of COCs at the Site. In the absence of risk management measures (RMM), SIs for terrestrial plants and soil invertebrates were greater than one for zinc (Table 4-4). It may be inferred from this result that growth and reproduction of sensitive plants and soil invertebrates may be inhibited in areas of the Site with concentrations of COCs exceeding their associated TRVs.

Table 4-4: Interpretation of Risks – Plants and Soil Invertebrates

Parameter	TRV (mg/kg)	Without RMM	
		Exposure Concentration (mg/kg)	SI (Screening Index)
Zinc	600	678	**1.13**

Table 5-5 presents the result of comparing the maximum soil concentrations with individual ecological component values for birds and mammals. Bolded and shaded values indicate an exceedance of an SI of greater than the acceptable level of 1.0. In the absence of RMMs, SIs for were greater than one for lead and zinc (Table 4-4) for the American woodcock. It may be inferred from this result that there is the potential for unacceptable risks to birds at the Site.

Table 4-5: Comparison of Maximum Soil Concentrations to Mammal and Bird Ecological Component Values

Parameter	Units	Maximum Soil Concentration	American Woodcock	Meadow Vole	Red Fox	Red Winged Black Bird	Red Tailed Hawk	Short-Tailed Shrew
Lead	µg/g	130	**32**	185000	88200	140	163000	1760
Zinc	µg/g	678	**337**	492000	36900	2770	79000	5520

NV – No value

5 CONCLUSIONS

As discussed, the Site is used for industrial/commercial use and is currently vacant. The Site is to be used for truck parking in the future, along with the construction of an on-site building. Therefore, the primary human receptors are workers at the Site. In the case of soil, there is the potential for direct contact with soil and the inhalation of dust. There is the potential for direct contact with groundwater as it may be used as a potable source. In the case of ecological receptors, the primary receptors are terrestrial plants, soil invertebrates, birds and mammals. In the case of soil, there is the potential for root uptake, direct contact, inhalation of dust, ingestion of food items and prey. In the case of groundwater given the minimum depth to groundwater (3.77 mbgs), there is no potential exposure for ecological receptors.

For the Human Health Risk Assessment (HHRA), further screening of the exceedances in soil and groundwater was completed with a comparison to the applicable MECP Table 2 (industrial/commercial, coarse soil, potable groundwater) human health component values, as the Table 1 SCS were only applicable for the identification of impacts at the Site given the requirement of the Township of Puslinch. For soil, the values for direct contact were used for comparison. In the case of soil, no exceedances were noted. In the case of lead, no human health component values are currently available. The

MEPC has released updated TRVs for lead and these will be used to determine potential risks to risks at the Site due to exposure to soil. In the case of groundwater, cobalt exceeded the human health component value associated with the ingestion of potable groundwater and will be evaluated further in the HHRA.

For the Ecological Risk Assessment (ERA), further screening of the exceedances in soil and groundwater was completed with a comparison to the applicable MECP Table 2 (industrial/commercial, coarse soil, potable groundwater) ecological component values. In the case of soil, lead exceeded for birds and mammals, while zinc exceeded for both terrestrial plants/soil invertebrates and birds and mammals requiring further assessment in the ERA. In the case of groundwater, no exceedances were noted, as such groundwater in association with ecological receptors will not be evaluated further in the ERA.

The HHRA concluded that no unacceptable risks were present in association with soil. In the case of groundwater, the calculated HQ was above the MECP's target HQ of 0.2 for cobalt and as a result it was concluded that there may be unacceptable risks from the ingestion of potable groundwater. Therefore, measures need to be in place to reduce or eliminate exposure to groundwater via the ingestion of potable groundwater. As a result, there is the requirement to have a restriction on the installation of potable wells at the Site. With this risk management measure in place no unacceptable risks are present due to groundwater at the Site.

The ERA concluded that in the absence of risk management measures, SIs for terrestrial plants and soil invertebrates were greater than one for zinc in soil. It may be inferred from this result that growth and reproduction of sensitive plants and soil invertebrates may be inhibited in areas of the Site with concentrations of zinc exceeding their associated TRVs. In the case of mammals and birds exposed to soil at the soil, in the absence of risk management measures, SIs for were greater than one for lead and zinc for the American woodcock. It may be inferred from this result that there is the potential for unacceptable risks to birds at the Site. As a result, there is the requirement to have capping of the impacted soil with 0.5 m of gravel or soil meeting the Table 1 SCS is required to mitigate potential risks to ecological health. With this risk management measure in place no unacceptable risks are present due soil at the Site.

With the recommended risk management measures in place, no unacceptable risks exist at the Site and the Site is suitable for continued industrial use without any remediation.

6 CLOSURE

This report has been prepared and the work referred to in this report has been undertaken by HS Group for BVD Real Estate Inc.. It is intended for the sole and exclusive use of BVD Real Estate Inc... Any use, reliance on or decision made by any person other than BVD Real Estate Inc. based on this report is the sole responsibility of such other person. HS Group makes no representation or warranty to any such other person with regard to this report and the work referred to in this report and accepts no duty of care to any person and any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the report of the work referred to in this report.

This report has been prepared for the exclusive use of BVD Real Estate Inc. for specific application to the Site as identified in Figure 1. Any conclusions or recommendations made in this report reflect HS Group's best judgment based on information available at the time of the report's preparation based, in part, on monitoring at various locations of the site, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report and other reports referenced herein.

Other than BVD Real Estate Inc., copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of BVD Real Estate Inc.. Nothing in this report is intended to constitute or provide a legal opinion.

Thank you for considering me for this project. If you have any questions regarding the content of this report, please feel free to contact me at 519-857-2777, or via email at: hscobie@hsgroupra.ca

Sincerely,



Hugh Scobie, MSc., DABT, C.Chem, QP$_{RA}$
Risk Assessor / Toxicologist



7 REFERENCES

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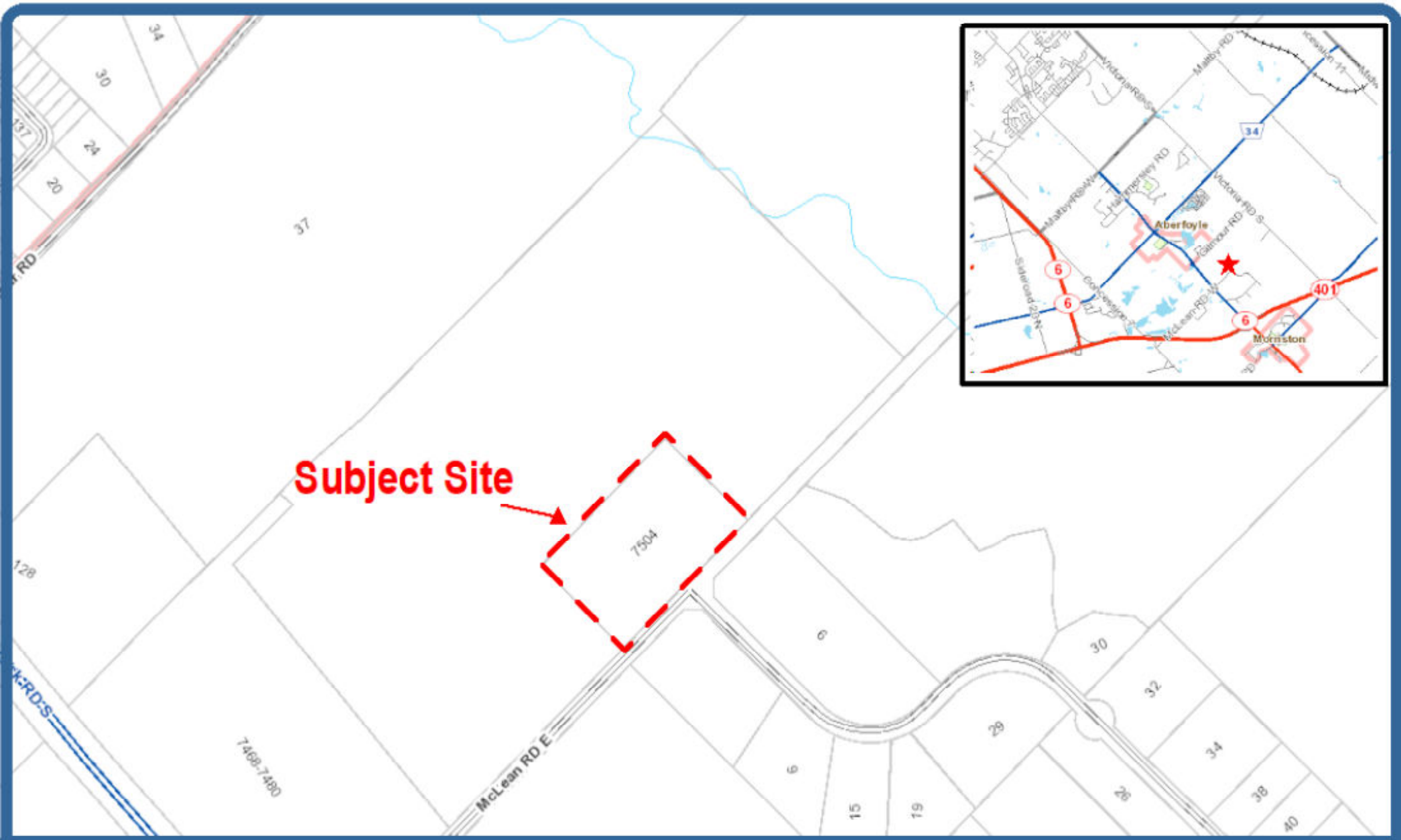
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Figures



A&A ENVIRONMENTAL CONSULTANTS INC.
16 Young St,
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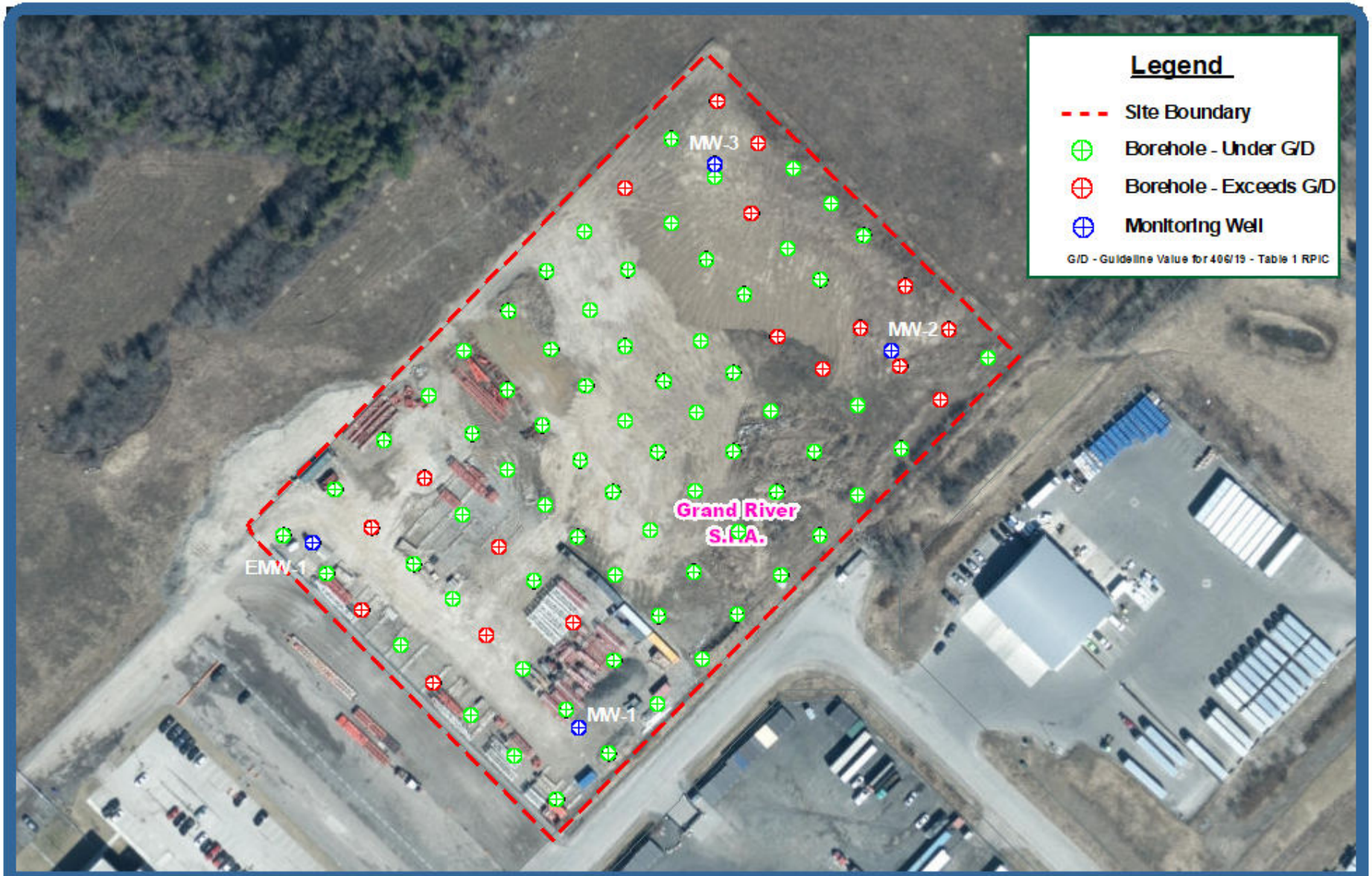
Site Location Map Located at 7504 McLean Road, Puslinch, Ontario

0 m — 200 m

Project #8296
June 2024

Map Source:
ERIS 2024

N
W E
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A&A ENVIRONMENTAL CONSULTANTS INC.
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Woodstock, ON, N4S 3L4
Tel: 519 266-4680

Satellite Image Indicating Borehole Locations in Exceedence & Monitoring Well Locations at 7504 McLean Road East, Puslinch, Ontario

0 m — 40 m

Project: 8368
March 2025

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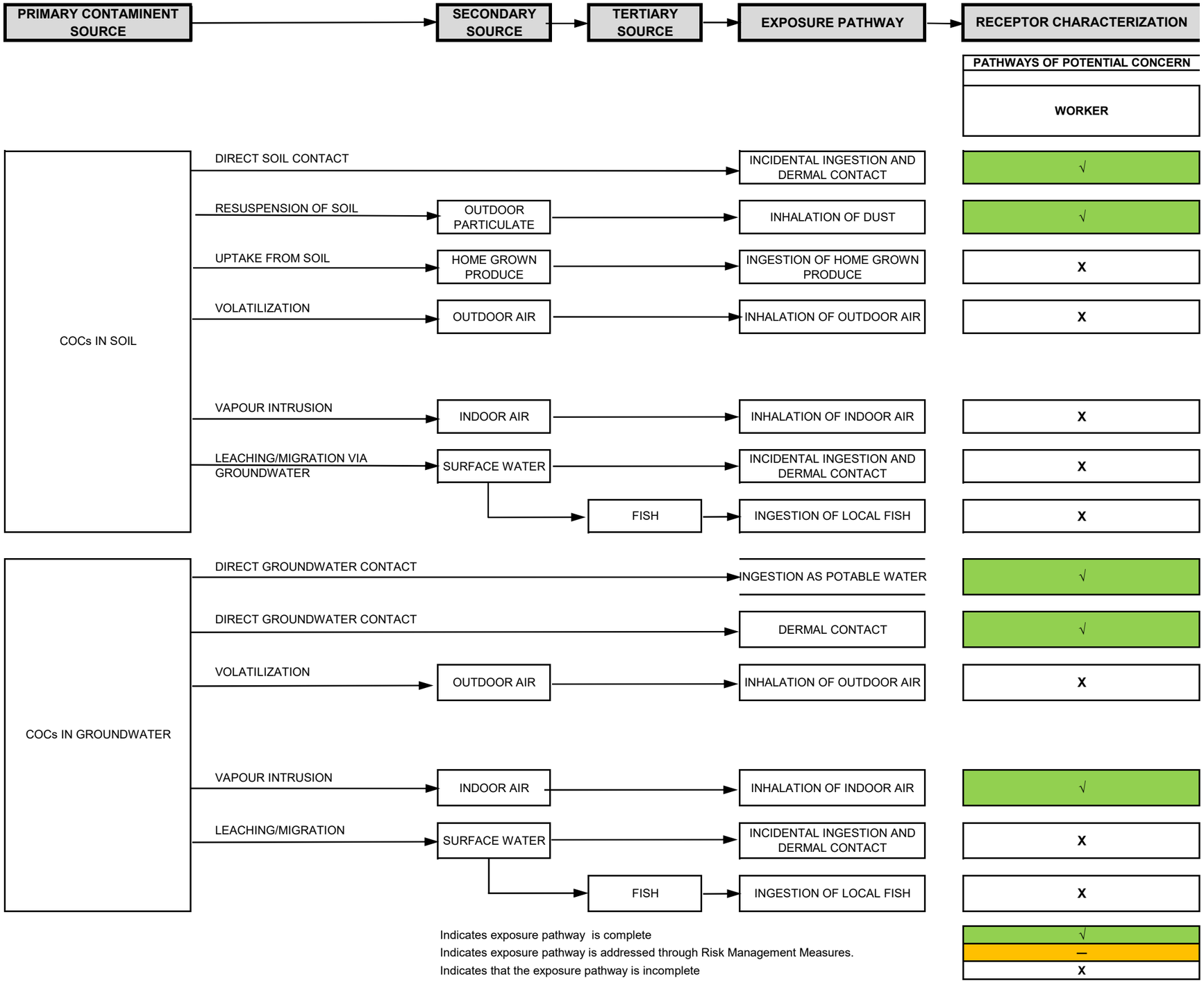
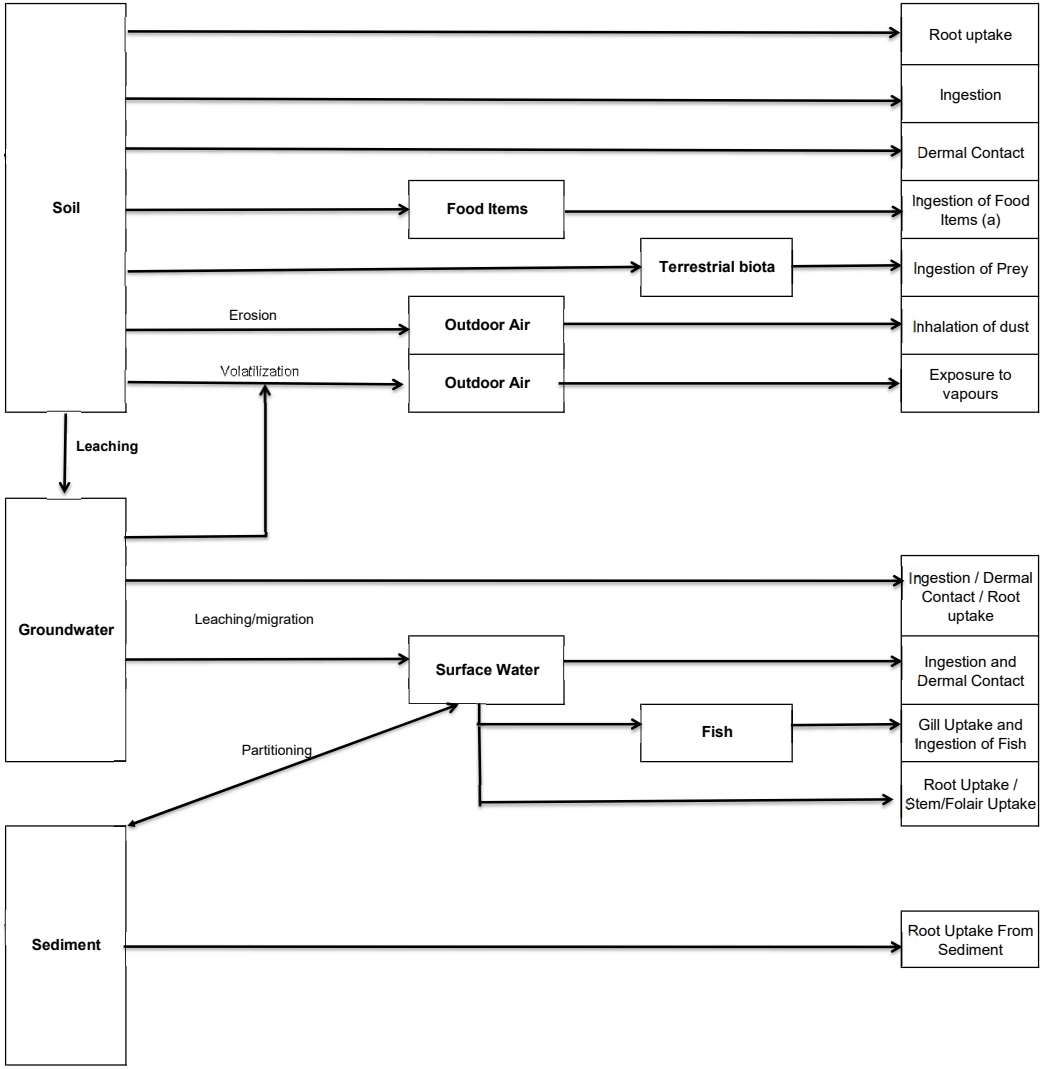


Figure 3. Human Health Conceptual Model - 7504 McLean Road, Puslinch, Ontario

Figure 4 - Ecological Conceptual Site Model - 7504 McLean Road, Puslinch, Ontario



Receptor Characterization		
On-Site		
Terrestrial Plants	Soil Invertebrates	Birds and Mammals
☑	X	X
X	☑	☑
X	☑	☑
X	X	☑
X	X	☑
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X

Appendix A

HSGROUP

Hugh Scobie, MSc., DABT, C.Chem, QP_{RA}

E-mail: hscobie@hsgroupra.ca

Professional Summary

Mr. Scobie is a board-certified toxicologist and chartered chemist with over 25 years of experience in conducting human health and environmental risk assessment. Mr. Scobie provides expert advice in the fields of human health risk assessment and toxicology, site-specific risk assessment, environmental toxicology, probabilistic exposure assessment, multi-media risk assessment, review of risk assessments and toxicology and development of regulatory standards for chemicals in soil and other media. He was previously employed with the Ontario Ministry of the Environment (MOE) as a Regulatory Toxicologist in the Human Toxicology and Air Standards section of the Standards Development Branch. In his previous work at the MOE, he provided expert advice in assessing the risk of adverse effects resulting from exposure to a wide range of hazardous chemicals. He has experience in the assessment of human health risks associated with contaminants in air, water and soil from numerous investigations conducted at various contaminated sites and exposure situations. With his years of experience and expertise in conducting risk assessments in Ontario, Mr. Scobie has been designated by the MOE as a Qualified Person (QP_{RA}) for conducting risk assessments under Ontario Regulation 153/04 (as amended).

Mr. Scobie has performed site-specific risk assessments throughout Canada associated with site contamination by various chemicals including a wide variety of metals. His work in the field of contaminated sites has provided him with extensive knowledge of both federal and a number of the province's environmental regulations.

Education

M.Sc., Pharmaceutical Science, University of Toronto, 2000
B.Sc., Biomedical Toxicology, University of Guelph, 1998
Professional Short Course: Advanced Probabilistic Risk Assessment, Syracuse Research Corporation, Syracuse, New York, 2003

Memberships / Affiliations

Associate Member, Society of Toxicology (SOT)
Member, Society for Risk Analysis
Diplomate of the American Board of Toxicology (DABT)
Chartered Chemist of Ontario (C.Chem)

Summary of Core Skills

Risk Assessment – Hugh provides expert advice in the fields of human health risk assessment, site-specific risk assessment, human health and environmental toxicology, probabilistic exposure assessment, multi-media risk assessment; and expert review of risk assessments. Hugh has a comprehensive understanding of the Ontario's amended Brownfield Regulation (O.Reg.511/09) and its requirements. In addition, he is knowledgeable on the MOE's internal risk assessment processes, internal procedures being an employee of the Ministry's Standards Development Branch

Hugh is also familiar with risk assessment procedures of the US EPA (i.e., RAGS – Risk Assessment Guidance for Superfund; Soil Screening Guidance, etc.), Health Canada, Canadian Council of Ministers of the Environment and Massachusetts Department of Environmental Protection brownfields programs.

Indoor Air Quality Assessments – Hugh has designed and reviewed the results of many indoor air sampling programs. He has been involved in worker exposure scenarios in cases when adverse health effects have been noted. He has been involved in emergency response situations, where rapid identification of the adverse volatile compound is critical. He has extensive knowledge of vapour intrusion, its modelling and its common sources and mitigation strategies. He has experience in both residential and commercial building applications dealing with both environmental and occupational source exposures. He has knowledge and experience with all of the available sampling technologies and can provide recommendations with respect to both efficacy as well as reliability for each of the methodologies.

Regulatory Guideline Development - As a regulatory toxicologist with the Ontario MOE, Hugh developed human health-based air quality standards for over 30 high priority air contaminants, including benzene, benzo(a)pyrene and the group of dioxins and furans. Used knowledge of toxicology and MOE policies and professional judgment and experience in creating the Information Draft documents to be made available to the public for comment. Additionally, Hugh authored the Ontario MOE's guidance concerning the submission of toxicological data in support of Basic Comprehensive Certificate of Approval application for air.

Regulatory Submission - Hugh has expertise in providing submissions to Health Canada, including pesticide formulations and products (Pest Management Regulatory Agency). Hugh also has extensive experience in the submission of air permitting approval documentation to the Ontario MOE.

Litigation Support - Hugh has provided litigation support in several cases both related to regulatory compliance (e.g., Ministry of the Environment offences) and personal injury. Dossier preparation and expert testimony in the area of human toxicology and exposure assessment have been provided in support of litigation.

Professional Experience

MGRA and Tier III Risk Assessment in Support of a Record of Site Condition, Block 60, Vaughan, Ontario

Conducted a MGRA and Tier III HHERA for a Record of Site Condition for separate sections of a large lot in Vaughan, Ontario for residential redevelopment. Concerns at the properties included elevated metal, inorganic, PAH, PHC, VOC, and PCB parameters in soil and elevated metals, inorganic, PAH, PHC, and VOC parameters in soil and groundwater. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in on-site and groundwater and soil. In addition, a risk management plan was prepared to mitigate unacceptable risks present at the Site.

Risk Assessment in Support of a Record of Site Condition, 550 & 552 Booth Street, Ottawa, Ontario

Conducted a risk assessment for a Record of Site Condition at an industrial property for redevelopment as a residential building in Ottawa, Ontario. Concerns at the property were elevated VOC and SVOC parameters in groundwater. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in on-site and groundwater. In addition, a risk management plan was prepared to mitigate unacceptable risks present at the Site.

Risk Assessment in Support of a Record of Site Condition, 71 Rebecca Street, Hamilton, Ontario

Conducted a risk assessment for a Record of Site Condition at a commercial use property for redevelopment as a community use in Hamilton, Ontario. The concerns at the RA property included elevated PHC parameters in soil and elevated VOC and PHC parameters in groundwater. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in on-site and groundwater and soil. In addition, a risk management plan was prepared to mitigate unacceptable risks present at the Site.

Risk in Support of a Record of Site Condition, 693-713 Davis Drive, Newmarket, Ontario

Conducted a risk assessment for a Record of Site Condition at a commercial property in Newmarket, Ontario with elevated VOC and PHC parameters in soil and groundwater. The property is proposed to be redeveloped for residential uses. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in on-site and groundwater and soil

Risk Assessment in Support of a Record of Site Condition, 1161 Kingston Road, Toronto, Ontario

Conducted a risk assessment for a Record of Site Condition at an industrial property for redevelopment for residential use in Toronto, Ontario. Concerns at the property include elevated PAH, VOC, and PHC parameters in soil and elevated VOC parameters in groundwater. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in on-site and groundwater and soil. In addition, a risk management plan was prepared to mitigate unacceptable risks present at the Site.

Risk Assessment in Support of a Record of Site Condition, 1799 St. Clair Avenue West, Toronto, Ontario

Conducted a risk assessment for a Record of Site Condition at an industrial property for redevelopment for residential use in Toronto, Ontario. Concerns at the RA property included elevated metal, inorganic, PAH and PHC parameters in soil and elevated VOC and PAH parameters in groundwater. The risk assessment addressed vapour intrusion associated with a number of volatile organic compounds found to be present in on-site and groundwater and soil as well as direct contact pathways for all other contaminants of concern.

Modified Generic Risk Assessment in Support of a Record of Site Condition, 40 St. Clair Avenue West, Toronto, Ontario

Conducted a MGRA for a Record of Site Condition at an commercial property for redevelopment for parkland use in Toronto, Ontario. The primary concern at the RA property was elevated PHC parameters in soil. The approved MECP MGRA model was used to determine property specific standards for contaminants of concern and to apply approved risk management measures to mitigate undue risk estimated by the model

Municipality of Port Hope – Peer Reviewer, Various Projects

Provide peer reviewer support to the Municipality of Port Hope for all remediation and risk assessment projects related to Low Level Radioactive Waste and former industrial sites. Many large scale risk assessment projects going through O.Reg.153/04 risk assessments are being peer reviewed to ensure compliance with the regulation as well as assessing potential liabilities to the Municipality of Port Hope.

Pinnacle International (Dundas) Ltd. - Risk Assessment for Parts of 5421 – 5435, 5449 -5453, 5475 and 5481 Dundas Street West, Toronto

Completed a risk assessment as the Qualified Person for Risk Assessment (QPRA) for a contaminated site in Toronto for a parkland redevelopment to be conveyed to the City of Toronto. The risk assessment is being completed under the requirements of O.Reg.153/04 (as amended). The site had identified metals, PAHs and VOCs in soil and groundwater at the site that required further assessment in both the human health and ecological risk assessments. Risk management measures have been proposed for the site to mitigate potentially unacceptable risks to potential human and ecological receptors at the site.

Southbound Developments (Aurora) Inc. - Risk Assessment for 15186 Yonge Street, 55, 57, And 57A Temperance Street and 12 And 16 Tyler Street Aurora, Ontario

Completing a risk assessment for a contaminated site in Aurora for a redevelopment for a church and a retirement home. The risk assessment is being completed under the requirements of O.Reg.153/04 (as amended). The site had identified PHCs and BTEX in soil and groundwater at the site that required further assessment in both the human health and ecological risk assessments. Risk management measures have been proposed for the site to mitigate potentially unacceptable risks to potential human and ecological receptors at the site.

2, 16, 18 and 20 Cordova Ave, Toronto Ontario

Completing a risk assessment for a contaminated site in Toronto for a redevelopment for residential high-rise buildings. The risk assessment is being completed under the requirements of O.Reg.153/04 (as amended). The site had identified VOCs in groundwater at the site that required further assessment in both the human health and ecological risk assessments. Risk management measures have been proposed for the site to mitigate potentially unacceptable risks to potential human and ecological receptors at the site.

Human Health Risk Assessment Study - Remediation of the Sydney Tar Ponds and Coke Oven Sites - Worked on the team conducting the human health risk assessment of the remedial strategy for the Sydney Tar Ponds and Coke Ovens. Lead a group examining exposures and risks to workers involved in the various remedial activities at the site. In addition, provided support in evaluating the potential risks and exposure to nearby residential as a result of the proposed remedial activities. The study examined the risks associated with a number of compounds including PAHs, BTEX, various metals and PCBs.

Risk Assessment and Risk Communication, Northstar Aerospace, Cambridge, Ontario -Provided support and managed day-to-day activities in the areas of risk assessment and risk communication associated with significant indoor air impacts due to TCE plumes in a shallow sand and gravel aquifer beneath a residential area. Conducted in-home visits to hundreds of impacted residences in order to communicate the health issues related to TCE exposure. Provided communications with all regulatory agencies involved in the project including the City of Cambridge, Grand River Conservation Authority, Region of Waterloo Health Unit and the District Ontario Ministry of the Environment office.

Risk Assessment to Support a Record of Site Condition, R&W Timber Property, Red Lake, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for the redevelopment of a commercial/industrial property for residential use. The risk assessment addressed petroleum hydrocarbon and mercury impacts in ground water, as well as petroleum hydrocarbon and metal impacts in soil. The risk assessment assessed as a key exposure pathway, vapour intrusion through the use of soil vapour data. In addition, a risk management plan was prepared that was accepted by the Ontario Ministry of the Environment to mitigate unacceptable risks present at the Site.

Risk Assessment to Support a Record of Site Condition, 3091 Appleby Line, Burlington, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for the sale and redevelopment of commercial/industrial property for strictly commercial use. The risk assessment

addressed impacts of volatile organic compounds and petroleum hydrocarbons in ground water, as well as impacts of petroleum hydrocarbons, polycyclic aromatic hydrocarbons and metals in soil. In addition, a risk management plan was prepared that was accepted by the Ontario Ministry of the Environment to mitigate unacceptable risks present at the Site.

Risk Assessment to Support a Record of Site Condition, 5 Hanna Avenue, Toronto, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for a residential redevelopment in Toronto. The risk assessment examined potential risks due to vapour intrusion as the result of impacted ground water under the foundation of a proposed high-rise condominium. The risk assessment provided expert advice on vapour intrusion and mitigation of risks to residents at the site due to potential inhalation of vapours from the impacted ground water.

Risk Assessment to Support a Record of Site Condition, 14 Algoma Street (Former Municipal Sewage Treatment Plant), Toronto, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for a City of Toronto parkland redevelopment. The risk assessment addressed polycyclic aromatic hydrocarbons and metals impacts related to soil and ground water at the Site. In addition, a risk management plan was prepared that was accepted by the Ontario Ministry of the Environment to mitigate unacceptable risks present at the Site for recreational users.

Risk Assessment to Support a Record of Site Condition, 55 Columbia Street, Waterloo, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for a mixed used (commercial/industrial property). The risk assessment addressed the flow through of volatile organic compounds in ground water due to an upgradient source. In addition, a risk management plan was prepared that was accepted by the Ontario Ministry of the Environment to mitigate unacceptable risks present at the Site.

Risk Assessment to Support a Record of Site Condition for the Phoenix Advanced Exploration Project, Red Lake, Ontario - Was retained by Rubicon Minerals to conduct a risk assessment to support the filing of a Record of Site Condition for the Phoenix Advanced Exploration Project near Red Lake, Ontario. The Site is an active mining camp, but an RSC was required by the Municipality of Red Lake to move into production phase. Waste rock from exploration activities used as fill at the site contained metals at concentrations greater than Table 3 standards. Completed an ecological risk assessment to demonstrate metals in waste rock fill exceeded ecological TRVs, but risks to plants, mammals, birds, and reptile populations were within acceptable limits. Metals at the site were found to pose some risk to various human receptors, and risk management measures were proposed to limit exposure of site workers. Submitted for regulatory review.

Risk Assessment in Support of a Record of Site Condition, 51-75 Bradford Street, Barrie, Ontario - Prepared a risk assessment to support a RSC filing for a 3.5-ha property for the proposed Blue Sails Redevelopment located in Barrie, Ontario. The Site was previously used for industrial purposes, and included historical rail sidings, coal and lumber yards, and leather tanning operations. The property was considered 'sensitive' under O. Reg. 153/04 due to the presence of a stream on-site. The potential contaminants of concern in soil included antimony, arsenic, mercury, copper, lead, petroleum hydrocarbons, vinyl chloride, and naphthalene. The RA was completed to support the redevelopment plans for the Site, which include residential land uses. Submitted for regulatory review.

Risk Assessment to Support a Record of Site Condition for 298 Lawrence Avenue, Kitchener, Ontario - Conducted a risk assessment in support of a filing a Record of Site Condition for a former commercial/industrial site to be redeveloped for use as a regional hospice. The risk assessment considered potential impacts in ground water in relation to the redevelopment. The risk assessment was accepted by the MOE with a RSC filed for the property.

Risk Assessment in Support of a Record of Site Condition, 301 Front Street, Toronto, Ontario - Completed a risk assessment on behalf of a developer at a vacant fill-impacted Site being redeveloped to house an

aquarium (commercial development). Intrusive investigations at the site revealed elevated levels of inorganics and PAHs in deep soil and ground water as a result of the use of poor quality fill when the site was originally developed over a century ago. Calculated risks for both ecological receptors and humans potentially exposed to contaminated soil and ground water, and proposed risk management measures to address residual concentrations following redevelopment.

Risk Assessment in Support of a Record of Site Condition, 300 West Hunt Club Road, Ottawa, Ontario - Conducted a risk assessment in support of a Record of Site Condition for a large property formerly used as a fuel depot in Ottawa, Ontario. The site is contaminated with petroleum hydrocarbons from on-site activities as well as migration of free phase product from adjacent properties. Critical ecological exposure pathways included direct exposure for soil organisms and vapour inhalation for small burrowing mammals. The ERA supported the development of Property Specific Standards (PSS) allowing redevelopment of the property while ensuring protection for ecological receptors. September 2009.

Risk Assessment in Support of a Record of Site Condition, Woodbine Avenue and 14th Avenue, Markham, Ontario - On behalf of a major developer in Toronto, completed a risk assessment for a former quarry being redeveloped for mixed commercial/residential use. This large property had elevated concentrations of heavy metals, PHC, PAHs, and other parameters distributed at various depths in a heterogeneous manner owing to the placement of fill at the site. Property Specific Standards for human health and ecological exposure pathways were developed using a stratified approach under O. Reg. 153/04.

Risk Assessment in Support of a Record of Site Condition, 15 Lake Street, Grimsby, Ontario - Conducted a risk assessment for a Record of Site Condition at a proposed residential development in Grimsby, Ontario. The site was considered "sensitive" due to its location adjacent to Lake Ontario. Soils at the site were impacted by petroleum hydrocarbons and metals as a result of historic activities from a marina and drydock. Sediment and surface water adjacent to the site were potentially impacted by upstream loading. A modified version of the Domenico subsurface transport model implemented by Atlantic RBCA was employed to estimate concentrations of contaminants in surface water and demonstrate that off-site impacts were negligible.

Risk Assessment to Support a Record of Site Condition, 76-86 Dalhousie Street, Brantford, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for a mixed used (commercial/residential) property. The risk assessment addressed polycyclic aromatic hydrocarbons and metals impacts related to soil and ground water at the Site. In addition, a risk management plan was prepared that was accepted by the Ontario Ministry of the Environment to mitigate unacceptable risks present at the Site.

Risk Assessment to Support a Record of Site Condition, 80 Willow Street, Paris, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for the redevelopment of a property for residential use. The risk assessment addressed a sensitive site (MOE Table 1) due to its proximity to a surface water body.

Risk Assessment in Support of a Record of Site Condition – 140 West River Street, Paris, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for the redevelopment of a property for residential use. The risk assessment addressed polycyclic aromatic hydrocarbons and metals impacts related to soil and ground water at the Site.

Risk Assessment in Support of a Record of Site Condition, 41 Oliver Street, Hamilton, Ontario - Conducted a risk assessment for a Record of Site Condition at a heavy industrial property in Hamilton, Ontario with elevated inorganic parameters in soil. The primary concern at the site was elevated soil conductivity and beryllium concentrations exceeding provincial standards. A toxicological review of effects in non-agricultural plant species was used to demonstrate that soil could remain on-site with low likelihood of adverse effects to biota.

Risk Assessment in Support of a Record of Site Condition, 76-86 Dalhousie Street, Brantford, Ontario - Conducted a risk assessment for a Record of Site Condition at a residential/commercial property in Brantford, Ontario impacted by metals in soil.

Risk Assessment to Support a Record of Site Condition, 210-240 Canarctic Drive, North York, Ontario - Conducted human health and ecological risk assessments in support of a Record of Site Condition for a light industrial/commercial property in North York, Ontario with VOC contamination of groundwater.

Risk Assessment in Support of a Record of Site Condition – Schneider Electric – Toronto, Ontario - Lead human health toxicologist in preparing a risk assessment for the property located at 19 Waterman Avenue in Toronto, Ontario. The risk assessment was carried out in accordance with the relevant provisions and mandatory requirements of Schedule C – Risk Assessment of Ontario Regulation 153/04 ('O.Reg 153/04'), Records of Site Condition ('RSC'), following submission of, and the subsequent receipt of comments relating to a Risk Assessment Pre-submission Form (Appendix A) prepared for the Site. The risk assessment addressed vapour intrusion as well as direct contact pathways associated with a number of volatile organic compounds found to be present in both on-site and off-site ground water and soil.

Risk Assessment in Support of a Record of Site Condition – CCL Industries – Concord, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for an industrial/commercial property located in Concord, Ontario. The risk assessment is addressing potential vapour intrusion issues related to elevated levels of chlorinated solvents present in soil and groundwater potential impacting both on-site and off-site receptors.

Risk Assessment in Support of a Record of Site Condition – City of Cambridge – Cambridge, Ontario - Qualified Person for Risk Assessment (QP(RA)) in a human health and ecological risk assessment for an industrial/commercial property located in Cambridge, Ontario. The risk assessment is addressing development of this Brownfield site as a municipal parking lot and issues surrounding petroleum hydrocarbon and metals impacted throughout the site.

Risk Assessment for Albert Street Area, Haileybury, Ontario – Prepared for the Ontario Ministry of the Environment - Was retained by the Ontario Ministry of the Environment to conduct a risk assessment at a petroleum-impacted site in Ontario to direct the development of remedial/risk management options. Worked as the Qualified Person for Risk Assessment (QP(RA)) on the project and provided a risk assessment compliant with the conditions of O.Reg153/04. Developed a number of property-specific standards for petroleum hydrocarbons and related compounds based on multi-pathway exposure (including vapour intrusion) to several potential receptors at the site (e.g., construction workers, residents). The property-specific standards in conjunction with the developed conceptual site exposure model were used to identify options to mitigate risks, in addition to further examination of each of the available remedial/risk management options for their feasibility.

Development of Preliminary Property Specific Standards (PSS), Lakeshore and Cherry St., Toronto, ON. - Compiled environmental information pertaining to the Site in Toronto in order to summarize the pertinent historical information as well as information on the current soil and ground water conditions as they relate to the redevelopment potential for the Site. As the objective of the risk assessment was to provide a preliminary understanding of the extent to which soil and/or ground water conditions would exceed risk-based target levels, the assessment relied on standard models for assessing exposure incorporating existing data.

Regulatory Review of Site-Specific Risk Assessments

As an MOE Regulatory Toxicologist was responsible for regulatory review of site specific risk assessments and remediation criteria to ensure compliance with Ontario's Guidelines for use at contaminated sites in Ontario (MOEE, 1997). Thorough knowledge of the scientific and policy based decisions regarding O.Reg

153/04 as well as the upcoming revisions of the regulation that will be promulgated in Ontario, and Ministry's overall site-specific risk assessment approval process. Participating in many MOE workshops related to the development of the revisions to the regulation and provided feedback on my issues related to its development (feasibility, scientific defensibility).

For many years under an ongoing standing offer, regulatory reviews of Risk Assessment Pre-Submission Forms and Risk Assessments have been conducted on behalf of the MOE.

Human Health and Ecological Risk Assessment - Transport Canada – Port Colborne Lands.

The project objectives included development of an interim risk assessment in order to address the current risk of contaminated soils and/or groundwater to humans; completion of a SSRA to address the potential human and ecological health risks; development of remedial options for various land use scenarios and for habitat management concerning an ecologically sensitive area present on the properties.

Ontario Municipal Board Hearing - Canadian Tire Real Estate Limited, 4100 Garden Rd., Whitby, ON

Initially, was retained by Canadian Tire Real Estate Limited ('CTREL') to provide a "Letter of opinion" concerning the potential risks to human health and the environment for a portion of the Canadian Tire property (designated to be severed) located at the northwest corner of Taunton Road and Garden Street in Whitby, Ontario. As part of the Approvals process to obtain severance of the subject Site, the Region of Durham insisted that an RSC be filed for the entire property (Civic address was 4100 Garden Road) prior to approving the severance of the parcel. It was recommended that CTREL file for a hearing with the Ontario Municipal Board (OMB) objecting to the need to complete a Record of Site Condition to support a land severance application and approvals process. Based on our interpretation of the Regulations, we determined that no "land use" change was occurring at the subject site, despite a change in municipal zoning. Hence, it was outr position that an RSC was not required to be filed to satisfy Provincial statutes. Provided expert testimony regarding sections of the RSC Regulations, in addition to a conclusory evidence that no adverse effects would result following severance of the Site based on on-going commercial Land Use. A decision on the hearing has not yet been received by CTREL.

Human Health Risk Assessment – City of Port Colborne, Ontario, Canada.

Risk Assessment Specialist responsible for conducting a comprehensive assessment related to metal and PAH impacted soil in an area to be developed as a recreational centre. Employed Toxic Equivalency Factor (TEF) approach to the assessment of carcinogenic PAHs and derived a novel inhalation unit risk factor specific for nickel oxide present in the area, which was accepted by the regulators.

Risk Assessment for Birchwood Park – City of Mississauga – Mississauga, ON

Conducted a human health and ecological risk assessment of former landfill containing coal fly ash to assess the potential exposures and risks based on its current use as parkland. The risk assessment examined metals exposure for various receptors and integrated the results in the development of a comprehensive risk management plan involving long-term monitoring/maintenance and installation of a cap at the site.

Expert Review – Human Health Risk Assessment for Chlorinated Solvent Exposure – 186 University Park Drive – Regina, Saskatchewan

Previous investigations at the University Park Mall in Regina, Saskatchewan had identified significant concentrations of chlorinated solvents in the subsurface soils. The delineation of the extent of the impacts had determined that the contamination had migrated to areas outside of the building. Westfield Real Estate Investment Trust requested an evaluation of the potential health risks to workers and patrons of University Park Mall from possible exposures to the chlorinated solvents. Conducted the expert final review of the

report prior to submission to the client. The risk assessment examined potential inhalation exposure as a result of vapour intrusion based on elevated levels of chlorinated solvents present in ground water.

Preliminary Quantitative Risk Assessment (PQRA), Building 107, 9 Wing Gander, Newfoundland and Labrador – Defence Construction Canada (DCC)

Was the lead toxicologist in conducting a Human Health Preliminary Quantitative Risk Assessment (PQRA) and a Screening Level ecological risk assessment for Building 107, 9 Wing Gander, Newfoundland and Labrador. The PQRA was requested in conjunction with a data gap analysis and a detailed testing program in support of the development of a remediation/risk management strategy for the Site. The PQRA addressed potential risks to Department of Defence staff present at the Site through all relevant exposure pathways in association with identified impacts in both soil and ground water based on available historical and current Site data.

Detailed Quantitative Risk Assessment (PQRA), Grand Falls Armoury Property in Grand Falls, Newfoundland and Labrador – Defence Construction Canada (DCC)

Was the lead toxicologist in conducting a Human Health Detailed Quantitative Risk Assessment (DQRA) for the Grand Falls Armoury Property in Grand Falls, Newfoundland and Labrador (NL). Within the Site to be assessed two distinct properties were identified. The first was the Grand Falls Armoury, which is owned by DND and is located off Memorial Drive, on the western side of the Town of Grand Falls-Windsor, Newfoundland. This property was approximately 0.5 hectares in size and is primarily used for Army Reserve and cadet training. The second, is the Woodland Primary School, which is located on the adjoining property to the north of the Armoury. The PQRA was requested in conjunction with a data gap analysis and a detailed testing program in support of the development of a remediation/risk management strategy for the Site. The PQRA addresses potential risks to human receptors present at both properties through all relevant exposure pathways in association with identified impacts in both soil and ground water based on available historical and current Site data. Given the different land use at each of the properties, separate PQRAs were conducted for each of the properties to appropriate address any potential risks to human receptors. The PQRA was submitted to Health Canada for review, with only minimal comments received.

Detailed Quantitative Risk Assessment (PQRA), Risk Assessment for the Airside Operations and Maintenance Centre, Edmonton International Airport Leduc County, AB – Public Works Government Services Canada

Was the lead toxicologist in conducting a Human Health Detailed Quantitative Risk Assessment (DQRA) for the Airside Operations and Maintenance Centre, Edmonton International Airport Leduc County, AB. The DQRA was requested in conjunction with a data gap analysis and a detailed testing program in support of the development of a remediation/risk management strategy for the Site. The DQRA addressed potential risks to human receptors present at the site through all relevant exposure pathways in association with identified impacts in both soil and ground water based on available historical and current Site data. Indoor air and soil vapour data were used in the conduct of the risk assessment to refine the assumptions associated with inhalation exposures to workers at the Site. Risk management and remediation strategies were proposed based on the results of the risk assessment to mitigate risks to due the inhalation of benzene at the site.

Human Health Risk Assessment in Support of the Development of a Remediation / Risk Management Strategy – Site 230, Shearwater, Nova Scotia – Defence Construction Canada

The human health risk assessment was requested in conjunction with a detailed testing program in support of the development of a remediation/risk management strategy for the Site. The PQRA addressed potential risks to human receptors present at the Site due to historical activities at the Site that resulted in BTEX and petroleum hydrocarbon as well as TCE, PAHs and several metals. The risk assessment examined direct contact with soil and ground water as well as potential vapour intrusion due to the identification of several volatile and semi-volatile compounds as potential COCs.

Screening Level Risk Assessment – Former Chamberlain Avenue Landfill – City of Ottawa

The purpose of the SLRA was to identify and characterize any potential health risks associated with the footprint of the former landfill, including that portion, which is comprised of private residences located at 35 through 45 Glendale Avenue, which is not City owned. The SLRA addressed potential human health risks in association with subsurface soil containing elevated levels of several metals and polycyclic aromatic hydrocarbons. Human health risks associated with the consumption of backyard garden produce were examined following the completion of a conceptual site model, which was used to identify relevant exposure pathways and human receptors. Based on the use of the maximum detected concentrations from the Site, the risks to receptors were noted to be unacceptable in association with lead and the carcinogenic PAHs. In the case of mercury only the risks to residents were noted to exceed the MOE target. Based on the results of the SLRA communication material was produced for distribution to the affected residents.

Human Health Risk Assessment in Reference to California EPA's Safe Cosmetics Act and California Safe Drinking Water and Toxics Enforcement Act (Proposition 65) – Three Bond International

Worked on a team at ChemRisk evaluating the potential health risks associated with the compliance of specific ingredients in cosmetic products with the California Safe Cosmetics Act & California' Proposition 65 regulations. Provided an estimation of potential exposure to various receptors related to the use of the products and its ingredients in demonstrating the potential risks to users in support of its compliance.

Indoor Air Quality Assessment, 165 Miler Holdings c/o Humbold Properties – North York, ON

Designed and conducted an indoor air quality sampling program in support of refinancing of a commercial/industrial property. Potential vapour intrusion due to historical activities resulting in chlorinated VOCs impacts in soil and ground water. The study involved both thermal desorption and sorbent charcoal tubes for the collection of samples with comparison to available regulatory benchmarks. The assessment was externally reviewed by the financial institution and accepted in support of the client's application for refinancing.

Review of Available Information Concerning Estimated Daily Intakes (EDIs) for the Canadian Population - Health Canada, Environmental Health Assessment Services

Provided Health Canada with information concerning estimated daily intakes (EDIs) for environmental contaminants for the Canadian population. These values are essential in establishing risks to receptors in the conduct of human health risk assessments for contaminated sites across Canada.

Identification of Information and Probabilistic Assessment of Estimated Daily Intakes for the Canadian Population – Health Canada, Contaminated Sites Division

The objective was to review information pertinent for determining likely background exposures (Estimated Daily Intakes, EDI) of the Canadian population for several compounds. The results of the work were intended to provide information to Health Canada for updating EDI values for the development of new or updating of existing Soil Quality Guidelines (SQG) in conjunction with the Canadian Council of Ministers of the Environment (CCME). In addition to the identification of pertinent information and conducting an assessment of a deterministic estimate of the EDI for each compound, a probabilistic assessment was undertaken to determine the uncertainties and underlying distributions for each of the media.

Preparation of Background Summary Fact Sheets and Screening Level Risk Assessment of Priority Substances, Health Canada, Existing Substances Division, Ottawa, Ontario

A comprehensive search, review and compilation of toxicity and exposure data for priority substances on Canada's Domestic Substances List (DSL) was conducted for Health Canada. Contract required expert review and summary of authoritative studies outlining exposure and effects data for various chemical

compounds. The fact sheets were part of a pilot project to assist Health Canada's Healthy Environments and Consumer Safety Branch with the health risk assessment component of screening level risk assessments (SLRAs) for chemical agents that were in commerce in Canada between January 1984 and December 1986.

Indoor Air Quality Assessment - Former C.P.R. John Street Roundhouse, located at 255 Bremner Boulevard, Toronto, Ontario

Carried out indoor air testing within the interior areas of the on-site building to investigate the potential for vapour intrusion associated with any potential soil and ground water impacts beneath the Roundhouse building. The indoor air results from the sampling program were compared to the Ontario Ministry of Labour (MOL) Time Weighted Average Exposure Values (TWAEV) limits, as well as Ministry of the Environment (MOE) Ambient Air Quality Criteria (AAQC) and human health risk-based limits as recommended by the Canadian Council of Ministers of the Environment (CCME) with respect to petroleum hydrocarbon compounds (PHCs). The laboratory analyses were reviewed and interpreted with respect to their potential to result in adverse effects on human health.

Analysis Of Uncertainties in the Delineation of a Reference Exposure Level (REL) For Mercury Vapour- Health Canada, Environmental Health Assessment Services

Was contracted by Health Canada to critically and quantitatively evaluate those scientific data and issues that may contribute to the uncertainty in the establishment of a Reference Exposure Level (REL) for mercury vapour. As part of the project we examined in detail the methods and means of establishing appropriate uncertainty factors (UFs) in the REL derivation process, the inter-conversion between various dose measurement methods and the application of probabilistic methods to quantify uncertainties. The recommendations made will be used by Health Canada in recommending an exposure limit for mercury vapour at Federal contaminated sites located across Canada.

Revisions & Updates to Draft Manuscript - Pulmonary Bioavailability of Particle-Bound Contaminants: A Review – Health Canada

The project scope involved expanding, updating and completion of a draft manuscript related to in vitro lung fluid solubility tests as a surrogate for respiratory bioavailability of particle-bound contaminants. The manuscript evaluated the available data in this area and its potential impacts on environmental risk assessment as it pertained to exposure and uptake of contaminants via particulate inhalation. The review of the draft manuscript included an examination of all pertinent peer reviewed literature that was deemed to be critical for updating the draft manuscript to allow its submission and acceptance by a peer-reviewed journal.

Human Health Assessment of Lead due to a Baghouse Explosion, Confidential Client

Was requested to provide an assessment of the potential health effects associated with lead as a result of the upset conditions at a battery plant. As the main focus of the assessment, a review of the results of predictive air modelling for lead were examined (based on ICRP) during the upset conditions and assessed the potential for adverse effects on human health for potential receptors located at the maximum concentration of lead resulting off-site. The modeling of resulting blood lead levels in determining the potential risks to exposed individuals was conducted using a sophisticated biokinetic model to address the short-term exposure of receptors as a result of the upset conditions.

Indoor Air Quality Assessment, Fond du Lac, Saskatchewan - Health Canada

Provided support in the study design and expert review in the interpretation of the results of the indoor air sampling related to BTEX and petroleum impacted dwellings. Historical spills of fuel resulted in the potential for adverse impacts on indoor air quality. The indoor air study examined ambient air concentrations of a number of volatile compounds with the concentrations compared to available Health Canada TRVs. Based on the assessment recommendations were made with respect to the need for additional sampling and potential risk management strategies.

Expert Review – Chromium in Blood Evaluation due to a Chromic Acid Spill – Fredericton, NB

Provided expert review of a report prepared for the New Brunswick Medical Officer of Health regarding the interpretation of plasma and erythrocyte chromium levels in blood in association with a chromic acid spill nearby a residential community. The interpretation was based on summaries of data obtained following collection of blood samples from residents that live in proximity to a residential community that was potentially impacted by a chromic acid spill. Based on the statistical assessment and evaluation, and based on the information currently available and provided to us, no statistical difference in chromium levels was found in either the plasma or erythrocytes for residents that live in proximity to the spill Site when compared to a control population that lives outside of the spill area. The report indicated that residential exposure to chromium was no different than that found in the normal control population.

Expert Review – Human Health Risk Assessment for the Proposed Gahcho Kué Project – De Beers Canada Inc.

Conducted final expert review of the multimedia risk assessment examining potential impacts associated with a proposed mining project. Issues related to exposure to First Nations community were carefully examining given their potential for increased exposure with the consumption of wild game, fish and vegetation in the area. The report was submitted to Health Canada for regulatory approval.

Human Health Risk Assessment in Support of a Closure Plan - Victoria Junction Coal Preparation Plant, Nova Scotia.

A screening level human health risk assessment was conducted to support the closure of the former coal preparation facility. The Victoria Junction Coal Preparation Plant processed coal from the mid 1970's to the late 1990's. A human health risk assessment was undertaken for the closure plan to determine the need for additional remediation measures and/or site use limitations based on the need to address acid mine drainage, contaminated soil, groundwater and surface water. The risk assessment utilized information from a multi-disciplinary closure planning project team to provide suitable site-specific recommendations.

Town of Walkerton

Worked on a team conducting a multimedia risk assessment to identify the sources, pathways and risks in the town of Walkerton resulting from the contamination of drinking water. The results of the site-specific risk assessment were used in the completion of the O'Connor report (Walkerton Inquiry) in delineating the risks due to contamination of drinking water and have led to the development of the number of new initiatives within the Ontario Ministry of the Environment.

Development of Air Standards for the Ontario Ministry of the Environment (MOE)

Worked as the lead toxicologist both while a staff member of the MOE and as an external consult in providing toxicological expertise in the development of ambient air quality standards (AAQCs) for the MOE. Human health-based air quality standards for over 30 high priority air contaminants were completed, including benzene, benzo(a)pyrene, chromium, arsenic and the group of dioxins and furans.

Review and Summary of Approaches to Risk Assessment of Air Pollutants – Health Canada, Air Health Effects Division

Examined the available approaches to conducting risk assessment for air contaminants by identified and summarizing policies and procedures used by regulatory agencies worldwide. The report produced identified all agencies with guidance, summarized their approach and provided a critical analysis of the technical approach used (e.g., robustness of database required to conduct a risk assessment, data sources examined, application of risk assessment outcomes)

Expert Review – Health Canada Risk Assessment Guidance Documents – Defence Construction Canada

Conducted a review of the draft Health Canada documents entitled "Supplemental Guidance on Developing a Contract Statement of Work (SOW) for Human Health Preliminary Quantitative Risk Assessment (PQRA) and Site Specific Risk Assessment (SSRA)" and "Guidance on Using Soil Quality Guidelines from Sources other than CCME". Provided feedback based on experience concerning feasibility and scientific rigor of the proposed guidance from Health Canada on aspects related to the conduct of human health risk assessments.

Expert Review – Risk Assessment in Support of A Record of Site Condition – Lakeshore Drive and Bradford Street in Barrie

Provided expert review of a risk assessment in support of a Record of Site Condition for the proposed Blue Sails Development site located at Lakeshore Drive and Bradford Street in Barrie, Ontario. The Site contains an area within 30m of a water body requiring further assessment against the MOE Table 1 SCS and the filing of two RSCs. The assessment examined a number of metals and PHCs.

Indoor Air Quality Assessment – Rio Tinto – Toronto, ON

Designed and conducted an indoor air sampling program for a residential area potentially impacted with chlorinated VOCs. Vacuum canisters, passive sampling devices (3M OVM) and sorbent charcoal tubes were used for the collection of samples from a number of locations within potentially impacted homes. Performed the analysis of the results with comparison to acceptable regulatory benchmarks from the Ontario Ministry of the Environment in producing a letter report for each of the homes tested. Where required risk management measures were recommended to reduce the exposure to the residents.

Comprehensive Human Health Risk Assessment – Community in New Brunswick, Canada – Confidential Client

Risk Assessment Specialist responsible for conducting a comprehensive assessment related to potential human health impacts associated with soil contamination with metals due to historical industrial emissions with a community.

Indoor Air Quality Assessment – TDL – Various Sites in Ontario

Designed and conducted indoor air quality assessments for various sites across Ontario for TDL due to potential environmental liabilities based on known environmental conditions at the Site. Where it was identified that there may be a potential issue as a result of vapour intrusion, a sampling program was developed in consultation with TDL to evaluate the potential risks to both workers and customers at the site. Where the potential for unacceptable risks may be present a risk management plan was developed to mitigate exposure.

Human Health Risk Assessment – City of Halifax, Nova Scotia, Canada

Used Risk Based Corrective Action (RBCA) modelling in conducting a site- specific risk assessment in a residential community. Assessed the potential health risks due to chlorinated solvent contamination of groundwater and provided advice as to potential remediation strategies and risk mitigation.

Site-Specific Risk Assessment - McNaughton Road Alignment - York Major Holdings Inc., Vaughan, Ontario

Lead risk assessor in conducting a Site-Specific Risk Assessment (SSRA) related to a former landfill in Vaughan. The SSRA evaluated the potential human health and ecological impacts associated with the placement of contaminated materials present in soil at the Site within a roadway allowance. The SSRA determined feasibility and potential human health/ecological impacts of managing contaminated materials on site.

Peer Review – Risk Assessments – City of Toronto – Toronto, ON

Conducted expert review of incoming risk assessments on behalf of the City of Toronto. Reviews were conducted to ensure regulatory compliance as well as to ensure potential environmental liabilities to the City were mitigated and appropriately addressed.

Environmental Impact Assessment – Human Health Risk Assessment – Proposed Avon Energy Centre – Invenergy

Conducted a multi-media human health risk assessment to determine potential risks associated with a proposed natural gas powered generating station to be built in the City of Oakville. Results of the assessment were provided to stakeholders via public meetings. The assessment included an analysis of potential health outcomes using the Canadian Medical Association's ICAP for Ontario. The risk assessment was presented to the Ontario Ministry of the Environment as well as regional health units for review and discussion.

Environmental Assessment of Proposed Ethanol Production Facility – Human Health Risk Assessment – Suncor Energy Products Inc.

Conducted a human health risk assessment to examine the potential impacts associated with a proposed ethanol production plant to supply ethanol for blending in their gasoline products in the Township of St. Clair in southwestern Ontario. To assess the potential effects associated with exposure, a range of toxicity benchmark values for non-cancer effects and Inhalation Unit Risk (IUR) values for cancer effects were identified for each COC in order to address uncertainties in the available science pertaining to the assessment of the potential for adverse human health risks. These toxicity values (both cancer and non-cancer) were used to determine potential risks to exposed individuals in the surrounding area. Based on an examination of the potential receptors and the environmental fate of the identified COCs from the facility, the sole route of exposure was determined to be via inhalation from air. In determining the potential human health risks with exposure to the identified receptors, the maximum modelled air concentrations (using AERMOD) at the property line (Resident – property line) and at the location of the closest resident (Closest Resident) were compared to the toxicity benchmark values (non-cancer effects) and/or Inhalation Unit Risk (IUR) values (cancer effects) for each COC. The assessment was submitted and accepted by the Ontario Ministry of the Environment for regulatory approval of the project.

Expert Peer Review – Preliminary Quantitative Risk Assessment and Risk Management Plan, Former Landfill – Ottawa, ON – City of Ottawa

Provided an expert peer review of human health related issues within the preliminary quantitative risk assessment and risk management plan on behalf of the City of Ottawa. The purpose of the review was to identify any technical issues in the conduct of the risk assessment or the design of the risk management plan, which may have resulted in liabilities for the City. Based on the review, a plan to address the issues was formulated and recommendations made to ensure a scientifically sound approach to the risk assessment and associated risk management plan.

Indoor Air Quality Assessment – Goodwill Amity – Hamilton, ON

Designed and conducted an indoor air quality sampling program in support of refinancing of a property. Potential vapour intrusion due to historical activities resulting in chlorinated VOCs, BTEX and petroleum hydrocarbon impacts in ground water. The study involved both thermal desorption and sorbent charcoal tubes for the collection of samples with comparison to available regulatory benchmarks. The assessment was externally reviewed by the financial institution and accepted in support of the client's application for refinancing.

QRA Document Review, Soil Sampling and Remedial Action Plan Update Site 1107B Dockyard Annex, Dartmouth, NS - Maritime Forces Atlantic – Defence Construction Canada

Was the lead human health toxicologist retained by Defence Construction Canada (DCC), and the Department of National Defence (DND), to complete a review of the quantitative risk assessment (QRA) document, collect soil (fill) samples, and update the remedial action plan (RAP) for Site 1107B, located at the Dockyard Annex. The review noted issues with respect to the risk assessment outcome and the need for additional sampling and risk management considerations. Additional work was conducted to revise the risk assessment and previously proposed risk management measures.

Indoor Air Quality Assessment and Speciation of Particulate – Home Depot Canada – Toronto, ON

In conjunction with AirZone Inc., designed and conducted an indoor air sampling program to determine potential worker exposure and speciation of particulate related to some consumer products present in the store. Due to worker complaints the sampling program and speciation was conducted to determine if indoor air quality was being impacted by some identified consumer products. Review of associated symptoms of exposure from workers was examined in conjunction with the resulting concentrations of compounds found in indoor air and as a result of particulate matter to determine if it was the source of the reported adverse health effects. Based on the analysis of the available data, recommendations were made to Home Depot.

Confidential Client

Appeared as an expert witness in court and was responsible for providing expert opinion evidence and testimony to assist the trial Judge in determining an issue before the Court concerning pesticide exposure and adverse effects.

Confidential Client

Appeared as an expert witness in a case related to potential provincial environmental offences. Argued regulatory and toxicology based points on behalf of the client in defending against the charge related to formaldehyde exposure in a residential scenario via stack emissions and waste water discharge.

Confidential Client

Preparation of an emergency preparedness plan for a U.S. fertilizer manufacturer. Prepared air modelling simulations of accidental spill scenarios and assessed the potential for off-site impacts on human health and the surrounding ecosystem. Provided advice to the company in mitigating the potential human health risks associated with an accidental release.

5 Wing Goose Bay, Risk/Exposure Assessment related to Ingestion of Berries and Mushrooms

As the lead risk assessment, completed an exposure assessment and risk assessment of individuals consuming various native foods potentially impacted with metals due to historical activities at an adjacent military base. The assessment was conducted on behalf on Health Canada in support of public communication with the adjacent residents.

Revisions & Updates to Draft Manuscript - Pulmonary Bioavailability of Particle-Bound Contaminants: A Review – Health Canada

The project scope involved expanding, updating and completion of a draft manuscript related to in vitro lung fluid solubility tests as a surrogate for respiratory bioavailability of particle-bound contaminants. The manuscript evaluated the available data in this area and its potential impacts on environmental risk assessment as it pertained to exposure and uptake of contaminants via particulate inhalation. The review of the draft manuscript included an examination of all pertinent peer reviewed literature that was deemed to be critical for updating the draft manuscript to allow its submission and acceptance by a peer- reviewed journal.

Peer Review - enHealth Guidance Documents - Review of Environmental Health Risk Assessment - Guidelines for assessing human health risks from environmental hazards & Australian Exposure Factors Guidance

Provided a peer review of Australia's regulatory guidelines with respect to risk assessment, as well as their guidance on the use of specific exposure factors.

Peer Review - Review of HSLs for Petroleum Hydrocarbons in Soil and Groundwater: Part 1: Technical Development Document

Provided a peer review of Australia's petroleum hydrocarbon guidance on behalf of the Petroleum Programme of CRC CARE Pty Ltd. Was asked to provide a critical review of the risk assessment methodologies used in the development of the guidance document as it related to petroleum hydrocarbon compounds in the environment.

Peer Review - CCME Soil Quality Guidelines for PAHs

While a regulatory toxicologist at the Ontario Ministry of the Environment, conducted a peer review of the draft SQG for PAHs on behalf of the CCME.

Select Publications

Richardson, G.M., Brecher, R., **Scobie, H**., Hamblen, J., Philips, K., Samuelian, J. and Smith, C. 2009. Mercury Vapour (Hgo): Continuing Toxicological Uncertainties and Establishing a Canadian Reference Exposure Level. Regul Toxicol Pharmacol 53(1):32-8

Moridani, M.Y., Siraki, A., Chevaldina, T., **Scobie, H**. and O'Brien, P.J. 2004. Quantitative structure toxicity relationships for catechols in isolated rat hepatocytes. Chem Biol Inter 147: 297-307.

Moridani, M.Y., **Scobie, H**. and O'Brien, P.J. 2002. Metabolism of caffeic acid by isolated rat hepatocytes and subcellular fractions. Toxicol Lett 133:141-151.

Chan, T.S., Moridani, M., Siraki, A., **Scobie, H.,** Beard, K., Eghbal, M.A., Galati, G. and O'Brien, P.J. 2001. Hydrogen peroxide supports hepatocyte P450 catalysed xenobiotic/drug metabolic activation to form cytotoxic reactive intermediates. Adv Exp Med Biol 500:233-236.

Moridani, M.Y., **Scobie, H**., Jamshidzadeh, A., Salehi, P. and O'Brien, P.J. 2001. Caffeic acid, chlorogenic acid, and dihydrocaffeic acid metabolism: glutathione conjugate formation. Drug Metab Dispos 29:1432-1439.

Moridani, M.Y., **Scobie, H**., Salehi, P. and O'Brien, P.J. 2001. Catechin metabolism: glutathione conjugate formation catalyzed by tyrosinase, peroxidase, and cytochrome P450. Chem Res Toxicol 14:841-848.

Select Presentations

Cumulative Effects Assessment in Support of a C of A Application (Air). Presented at AWMA Ontario Meeting.

Introduction to the Threshold of Toxicological Concern: Presented to Health Canada Staff under contract with the Canadian Network of Toxicology Centres.

Air Abatement in Ontario: Effects of Air Pollution and the Development of Air Standards in Ontario. Training module presented to Environmental Officers, Ontario Ministry of the Environment.

Antimicrobial Residues in Food and Risks to Human Health: Application of the Risk Assessment Paradigm. Prepared for the First International Conference on Antimicrobial Agents in Veterinary Medicine, Helsinki, Finland.

Hydrogen peroxide supports hepatocyte P450 catalysed xenobiotic/drug metabolism to form cytotoxic reactive intermediates. Poster presented at the Biological Reactive Intermediates Sixth International Symposium, Paris, France.

Metabolism of dietary antioxidants: GSH conjugate formation by dietary plant phenolics. Poster presented at the Canadian Federation of Biological Societies Annual Meeting, Ottawa, Ontario.

A & A Environmental Consultants Inc.
16 Young Street
Woodstock, Ontario N4S 3L4
Tel: 519-266-4680
Fax: 519-266-3666

April 1, 2025

Township of Puslinch
C/O
HBC Real Estate 1 Inc.
130 Delta Park Boulevard
Brampton, ON, L6T 5E7

Re: Site Alteration Permit – Owner and Qualified Person Declaration

To Whom this May Concern,

A&A Environmental Consultants Inc. (A&A) has been working toward completing and obtaining an application for a site alteration permit for the site located at 7504 McLean Road, Puslinch, Ontario. The owner of the site, HBC Real Estate 1 Inc., and the Qualified Person (QP) declare and confirm that the QP will be person at the property and be responsible for all activities associated with the site alteration. The site alteration pertains to the importation of ill and removal of fill from the property.

SIGNED:



Dr. Ali A. Rasoul, Ph.D., P. Geo, Q.P.
Senior Consultant, A & A Environmental Consultants Inc.

A & A Environmental Consultants Inc.
16 Young Street
Woodstock, Ontario N4S 3L4
Tel: 519-266-4680
Fax: 519-266-3666

April 1, 2025

Township of Puslinch
C/O
HBC Real Estate 1 Inc.
130 Delta Park Boulevard
Brampton, ON, L6T 5E7

Re: Site Alteration Permit – Schedule & Timing

To Whom this May Concern,

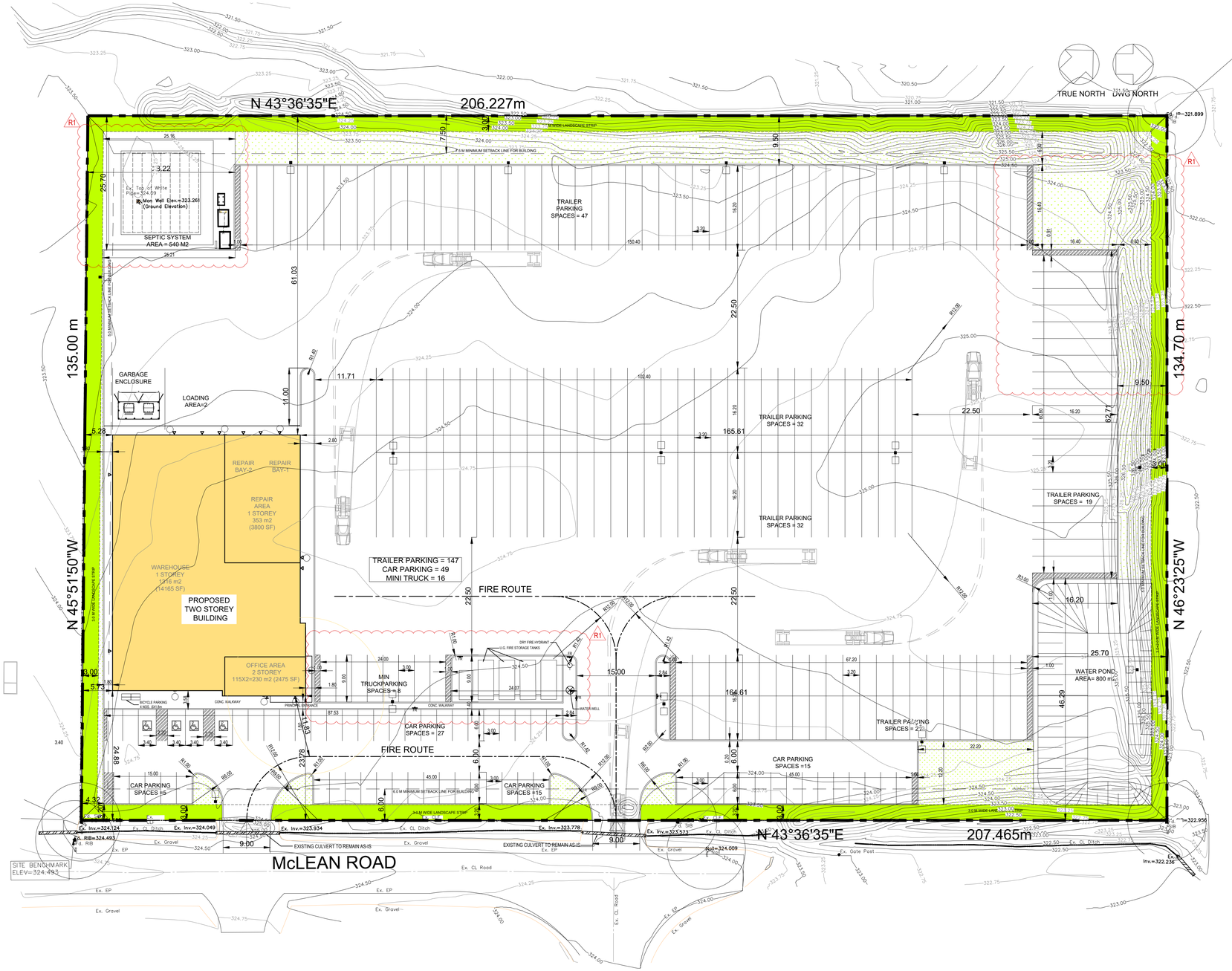
A&A Environmental Consultants Inc. (A&A) has been working toward completing and obtaining an application for a site alteration permit for the site located at 7504 McLean Road, Puslinch, Ontario. Site Alteration activities and hauling that confirms that no activities would occur:

1. Between the hours of 5:00 p.m. and 8:30 a.m. Monday to Friday;
2. Anytime on a Saturday, Sunday, or Statutory Holiday;
3. During any period in which a wind warning has been issued by Environment Canada;
4. During any weather conditions where the ability to mitigate Site Alteration activity impacts is severely compromised (e.g., heavy rain, etc.); and
5. During any situation where Site Alteration activities can unduly impact adjacent landowners (e.g., brush fires, floods, unsuitable road conditions, etc.);

SIGNED:



Dr. Ali A. Rasoul, Ph.D., P. Geo, Q.P.
Senior Consultant, A & A Environmental Consultants Inc.



1 SP-01

SITE PLAN

SCALE 1:400

SITE STATISTICS
7504 McLEAN ROAD, PUSLINCH, ON

ZONE - IND

LOT AREA	MIN. REQD.	AVAILABLE
	0.4 Ha	2.79 Ha

LOT FRONTAGE	MIN. REQD.	AVAILABLE
	30 m	207.46 m

SETBACKS	MIN. REQD.	PROPOSED
FRONT YARD	6.0 m	23.78 m
SIDE YARD - INTERIOR N	5.0 m	164.6 m
SIDE YARD - INTERIOR S	5.0 m	5.28 m
REAR YARD	7.5 m	61.0 m

BUILDING AREA LOT COVERAGE	MAX. ALLOWED	PROPOSED
1784 M2	75%	6.36 %

BUILDING HEIGHT	MAX. ALLOWED	PROPOSED
	25.0 m	8.0 m

BUILDING AREA CALCULATION (m2)

FLOOR	USE	GROSS AREA m2
GR FL	TRANSPORT	353
	WARE HOUSE	1316
	OFFICE (BUSINESS)	115
2ND FL	OFFICE (BUSINESS)	115
TOTAL (GR FL+ 2ND FL)		1899 m2

PARKING STATISTICS

CAR PARKING SPACES

USE	GROSS AREA	RATE	REQUIRED	PROVIDED
TRANSPORT	353	1 / 100 m2 3.53		
WAREHOUSE	1316	1 / 200 m2 6.58		
OFFICE	230	1 / 40 m2 5.75		
TOTAL		15.86	16	49

CAR PARKING SPACE DIMENSIONS - 3.0 m X 6.0 m;
MINI-TRCK PARKING SPACE DIMENSION - 3.0mx9.0m
MINI-TRUCK SIZE 7.9m X 2.44m

ACCESSIBLE PARKING SPACES	REQUIRED	PROVIDED
FOR 26- 62 CARS	1+3% of 62= 2.86=3	4

ACCESSIBLE PARKING SPACE DIMENSIONS
TYPE-A 3.4X5.5m
TYPE-B 2.4X5.5m
ACCESS AISLE 2.0m WIDE

LOADING SPACES	REQUIRED	PROVIDED
FOR NET FLOOR AREA		
- 250 m2 TO 2500 m2	1	2

LOADING SPACE DIMENSIONS - 3.5 m X 10.0 m

BICYCLE PARKING SPACES	REQUIRED	PROVIDED
FOR INDUSTRIAL USE 2/1000m2	4	4

BICYCLE PARKING SPACE DIMENSIONS - 0.6 X1.8m

PARKING SPACES CALCULATIONS

PARKING AREA	TRAILERS	CARS	MINI-TRUCKS
TOTAL	151	62	8

R1

LOT AREA	27923 M2
BUILDING AREA	1784 M2
POND AREA	800 m2
SEWER SYSTEM	540 m2
LANDSCAPE AREA	5469 m2 19.6%
PAVED AREA	19330 m2
TOTAL	27923 m2

LEGEND:

- LIGHTING STANDARD- DOUBLE HEADS
- LIGHTING STANDARD - SINGLE HEAD
- WALL PACK LIGHTS



KEY PLAN SCALE N.T.S.

ALL INFORMATION AND DIMENSIONS MUST BE CHECKED AND VERIFIED ON SITE. DO NOT SCALE DRAWINGS. ANY VARIANCES OR DISCREPANCIES MUST BE REPORTED TO THE DESIGNER PRIOR TO COMMENCEMENT OF THE WORK. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL BY-LAWS AND CODES HAVING JURISDICTION OVER THIS CONSTRUCTION SITE. THE DESIGN AND CONTRACT DOCUMENTS ARE THE COPYRIGHT OF THE DESIGNER AND MAY NOT BE REPRODUCED, REUSED OR ALTERED WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER.

KALP ARCHITECT INC.
1601-21 MARKBROOK LANE,
TORONTO, ON, M9V 5E4
PH: 1-647 967 7937

[redacted]

No.	DESCRIPTION	DATE
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2	ISSUED FOR COORDN -R1	20240930
1	ISSUED FOR COORDN	20240531

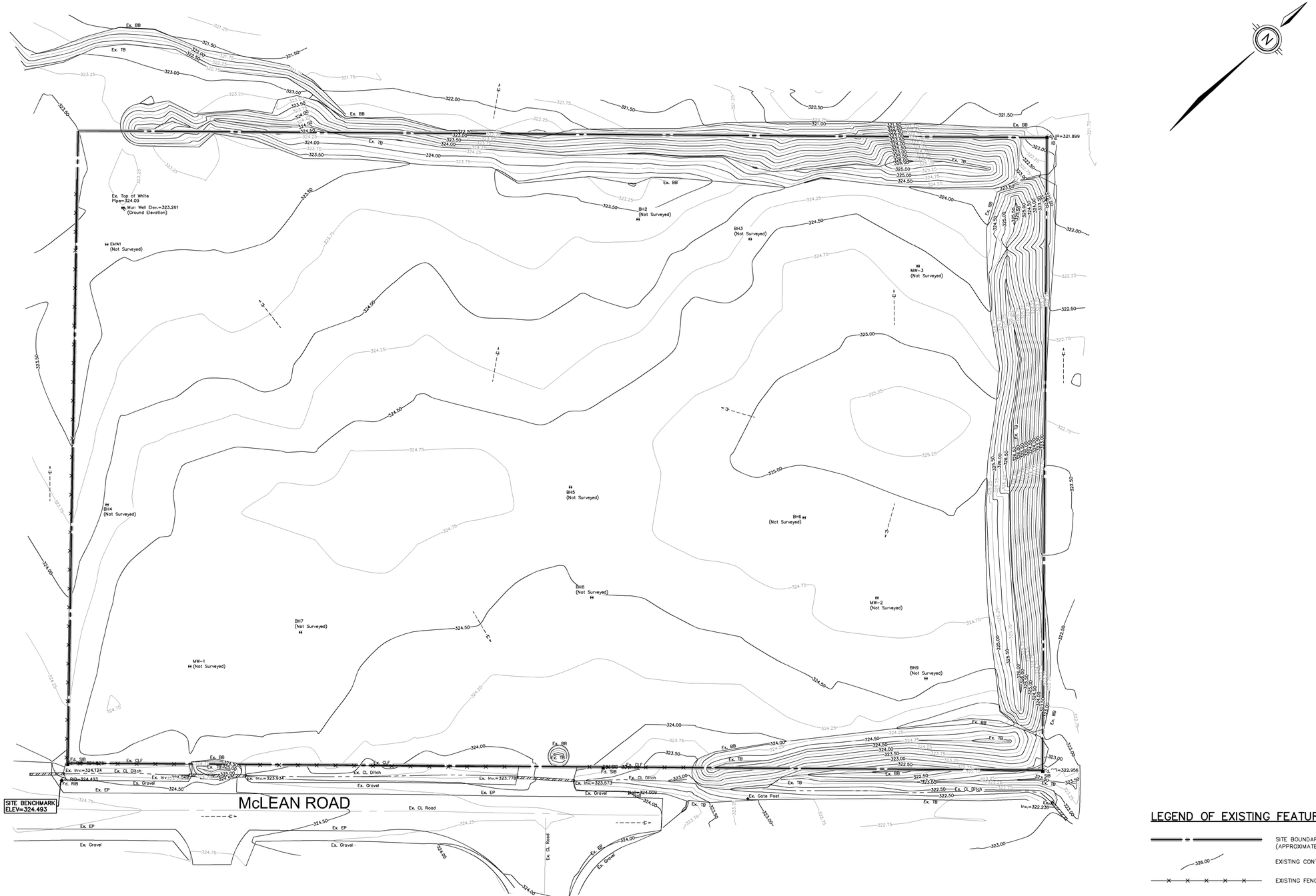
PROJECT:
TRANSPORTATION DEPOT
7504 McLEAN ROAD,
PUSLINCH, ON

DRAWING TITLE:
SITE PLAN
OPTION -2

DEALT:	LP
DATE:	2024.02.22
SCALE:	AS NOTED
PRINT SIZE:	36"X 24"

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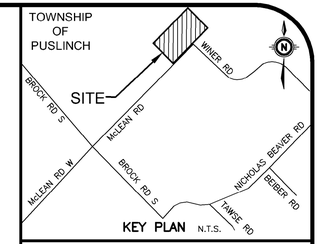
DRAWING No.	Rev No.	Proj. File No. (24-06)
SP-01	R2	



SITE DETAILS
CENTROID NORTHING=4812908.863m
CENTROID EASTING=570344.934m
AREA=2.79ha
SITE USE=VACANT

LEGEND OF EXISTING FEATURES

- SITE BOUNDARY (APPROXIMATE ONLY)
- 326.00 EXISTING CONTOURS
- EXISTING FENCE
- EXISTING STORM CULVERT
- EXISTING DITCH
- EXISTING MONITORING WELL
- EXISTING DIRECTION OF DRAINAGE



KEY PLAN N.T.S.

GEODETIC BM ELEV. = 326.301m
COSINE STATION– 00820068036
WELLINGTON COUNTY– MORRISTON– MONUMENT IS LOCATED ON NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF HWY 401 AT HWY 6 SOUTH.

SITE BENCHMARK ELEV. = 324.493m
RIB IN SOUTH CORNER OF SITE
POINT NUMBER–1

NOTE TO CONTRACTOR :

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NOTE:

1. **PROPERTY LINE IS APPROXIMATE ONLY AND SHOULD NOT BE USED FOR DETERMINING SETBACKS OR LAYOUT.**
2. **THIS PLAN IS PART OF A SET OF PLANS WHICH COMPRISE OF THE FOLLOWING: C1.1, C2.1, C2.2, C2.3 AND THE SWM REPORT.**

No.	REVISION	BY	YYYY-MM-DD
8.			
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1.	ISSUED FOR APPROVAL	AJS	2025-01-22

MTE
Engineers, Scientists, Surveyors
519-743-6500

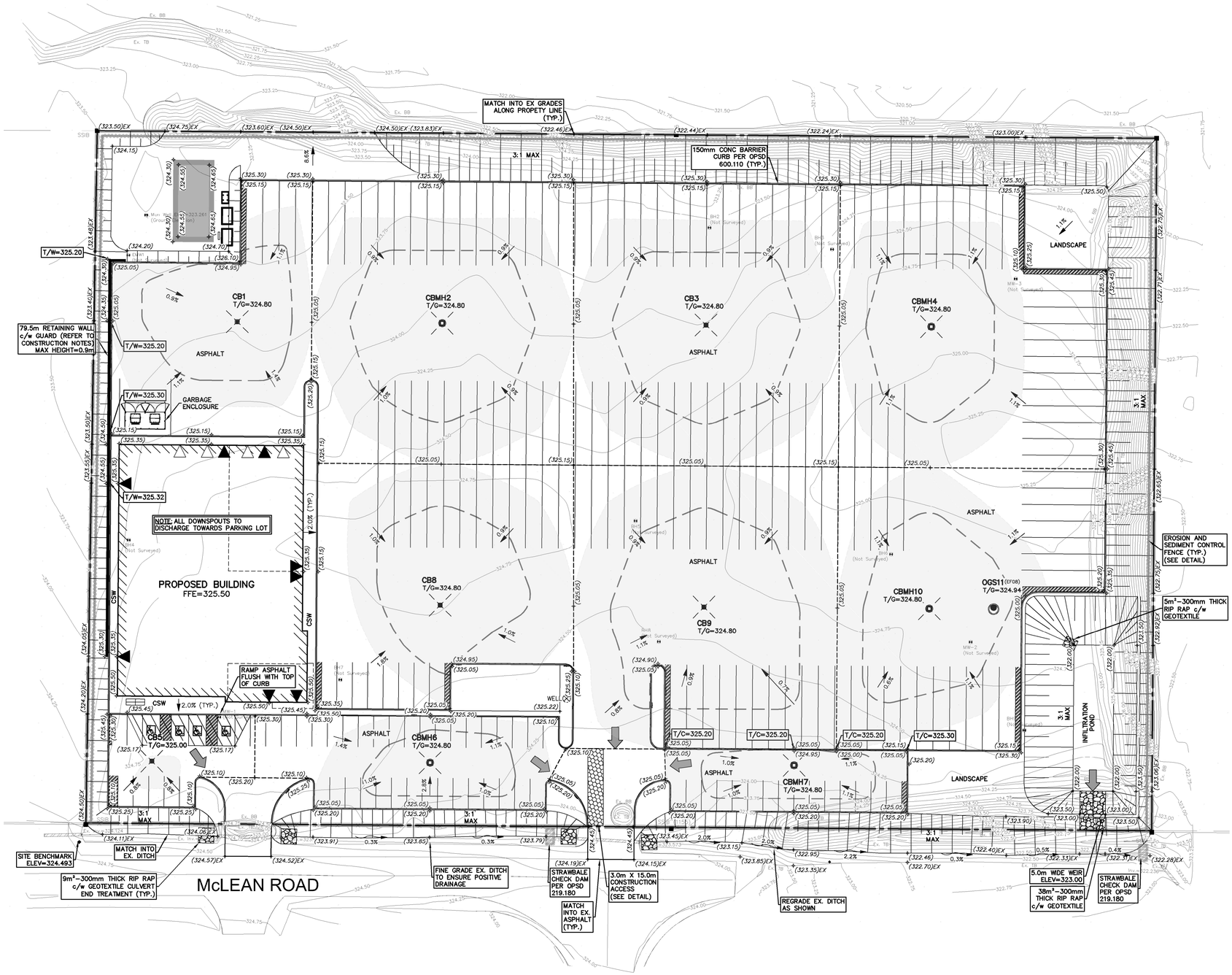
OWNER
BVD REAL ESTATE INC.
130 DELTA PARK BOULEVARD BRAMPTON

PROJECT
7504 McLEAN ROAD
PUSLINCH

DRAWING
CURRENT CONDITIONS PLAN

Project Manager: A. SLAWICH	Project No.: 55237-100
Design By: AJS	Checked By:
Drawn By: JRS	Checked By: AJS
Surveyed By: MTE	Drawing No.: C1.1
Date: May.14/24	
Scale: 1:400	Sheet 1 of 4

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MTE FILE PATH:
January 22, 2025 – 2:21:28 PM – Plotted By: Gemma Cabral-Gushue



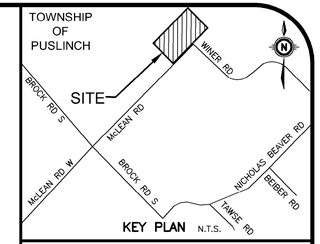
LEGEND OF EXISTING FEATURES

- SITE BOUNDARY (APPROXIMATE ONLY)
- EXISTING CONTOURS
- EXISTING FENCE

LEGEND OF PROPOSED FEATURES

- (326.00) / T/G=326.00 / FFE=326.00 — PROPOSED SPOT ELEVATIONS; EX =MAINTAIN EXISTING; T/G =TOP OF CASTING/GRATE; INV =INVERT ELEVATION; FFE =FINISHED FLOOR ELEVATION
- 1.0% 1.0% — DIRECTION OF DRAINAGE/SWALE
- DRAINAGE SPLIT (RIDGE)
- (TOP) 3:1 (BOTTOM) — EMBANKMENT (SLOPE AS NOTED)
- PROPOSED BUILDING
- OVERHEAD DOOR
- MAN DOOR
- (DROP CURB) — CONCRETE CURB
- OVERLAND FLOW ROUTE (MAJOR STORM)
- SEDIMENT CONTROL FENCE (SEE DETAIL)
- CONSTRUCTION ACCESS (SEE DETAIL)
- RIP RAP (SIZE & TYPE AS NOTED)
- 100 YEAR PONDING LIMIT (ELEVATION=325.06)
- 5 YEAR PONDING LIMIT (ELEVATION=324.98)

TOWNSHIP OF PUSLINCH



KEY PLAN N.T.S.

GEODETIC BM ELEV. = 326.301m

COSINE STATION– 00820068036
WELLINGTON COUNTY– MORRISTON– MONUMENT IS LOCATED ON NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF HWY 401 AT HWY 6 SOUTH.

SITE BENCHMARK ELEV. = 324.493m

RIB IN SOUTH CORNER OF SITE
POINT NUMBER–1

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No.	REVISION	BY	YYYY-MM-DD
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5.			
4.			
3.			
2.			
1.	ISSUED FOR APPROVAL	AJS	2025-01-22

MTE
Engineers, Scientists, Surveyors
519-743-6500

[redacted]

OWNER
BVD REAL ESTATE INC.
130 DELTA PARK BOULEVARD BRAMPTON

PROJECT
7504 McLEAN ROAD
PUSLINCH

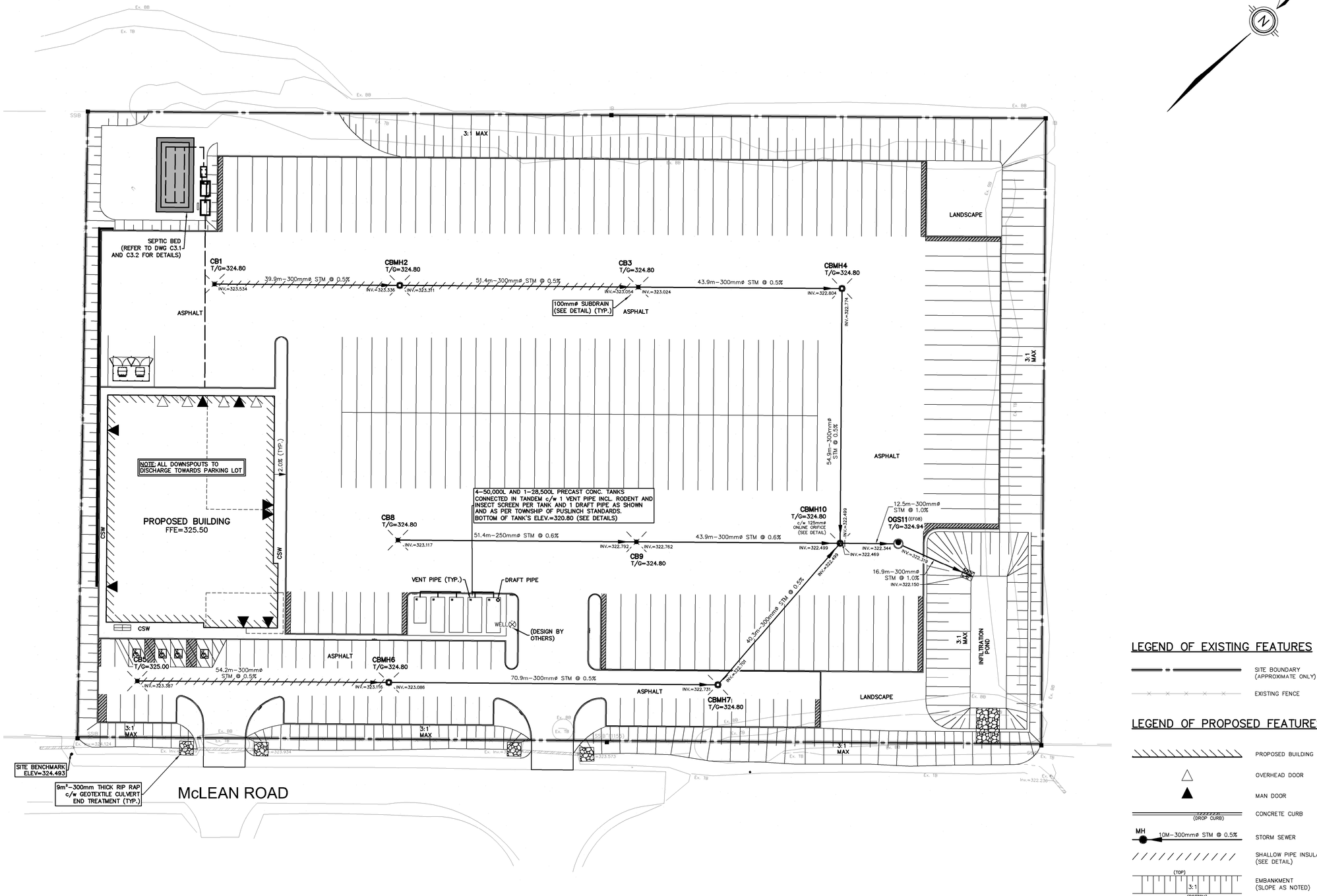
DRAWING
SITE GRADING, SWM AND EROSION & SEDIMENT CONTROL PLAN

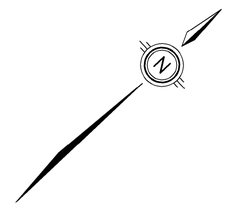
Project Manager: A. SLAWICH	Project No.: 55237-100
Design By: AJS	Checked By:
Drawn By: JRS	Checked By: AJS
Surveyed By: MTE	Drawing No.: C2.1
Date: Oct.11/24	
Scale: 1:400	Sheet 2 of 4

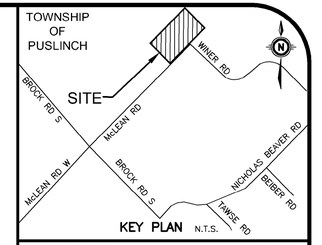
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KEY PLAN N.T.S.

GEODETIC BM ELEV. = 326.301m

COSINE STATION– 00820068036
WELLINGTON COUNTY– MORRISTON– MONUMENT IS LOCATED ON NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF HWY 401 AT HWY 6 SOUTH.

SITE BENCHMARK ELEV. = 324.493m

RIB IN SOUTH CORNER OF SITE
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LEGEND OF EXISTING FEATURES

- SITE BOUNDARY (APPROXIMATE ONLY)
- EXISTING FENCE

LEGEND OF PROPOSED FEATURES

- PROPOSED BUILDING
- OVERHEAD DOOR
- MAN DOOR
- CONCRETE CURB (DROP CURB)
- MH — 10M–300mmø STM @ 0.5% — STORM SEWER
- SHALLOW PIPE INSULATION (SEE DETAIL)
- EMBANKMENT (SLOPE AS NOTED) (TOP) 3:1 (BOTTOM)
- RIP RAP (SIZE & TYPE AS NOTED)

No.	REVISION	BY	YYYY-MM-DD
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2.			
1.	ISSUED FOR APPROVAL	AJS	2025-01-22

MTE
Engineers, Scientists, Surveyors
519-743-6500

[redacted]

OWNER
BVD
REAL ESTATE INC.
130 DELTA PARK BOULEVARD BRAMPTON

PROJECT
7504 McLEAN ROAD
PUSLINCH

DRAWING
SITE
SERVICING
PLAN

Project Manager: A. SLAWICH	Project No.: 55237-100
Design By: AJS	Checked By:
Drawn By: JRS	Checked By: AJS
Surveyed By: MTE	Drawing No.: C2.2
Date: Oct.11/24	
Scale: 1:400	Sheet 3 of 4

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January 22, 2025 – 2:20:24 PM – Plotted By: Gemma Cabral-Gushue

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MTE FILE PATH:

CONSTRUCTION NOTES AND SPECIFICATIONS

1. GENERAL

1.1. THESE PLANS ARE NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY THE LOCAL MUNICIPALITY.

1.2. THESE PLANS ARE TO BE USED FOR SERVICING AND GRADING ONLY; ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THESE PLANS MUST NOT BE USED TO SITE THE PROPOSED BUILDING.

1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.

1.4. THESE PLANS ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC.

1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:

1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.

1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.

1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.

1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.

1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL DAMAGED AND/OR DISTURBED PROPERTY WITHIN THE MUNICIPAL RIGHT-OF-WAY TO LOCAL MUNICIPALITY STANDARDS

1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WITH THE EXCEPTION OF WATERMAIN TAPPING, TO BE INSTALLED BY THE OWNER'S CONTRACTOR AT OWNER'S EXPENSE IN ACCORDANCE WITH THE "LOCAL MUNICIPALITY'S "PROCEDURE FOR OFF-SITE WORKS BY PRIVATE CONTRACTOR". THE OWNER AND CONTRACTOR ARE TO ENSURE OFF-SITE WORKS PERMIT IS IN PLACE PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL AFFECTED PROPERTY TO ORIGINAL CONDITION, ALL BOULEVARD AREAS SHALL BE RESTORED WITH 150mm TOPSOIL AND SOD.

1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND THE REQUIREMENTS OF THE LOCAL MUNICIPALITY AND THE REGIONAL MUNICIPALITY OF WATERLOO; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.

1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2., GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.

1.10. SANITARY AND STORM SEWERS AND SERVICES TO HAVE A MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. CONTACT DESIGN ENGINEER FOR "SEWER PIPE INSULATION DETAIL" IF REQUIRED.

1.11. PLAN TO BE READ IN CONJUNCTION WITH SWM REPORT AND DRAWING C1.1, C2.1, C2.2 AND C2.3 PREPARED BY MTE CONSULTANTS INC. AND LANDSCAPE PLAN.

1.12. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY KALP ARCHITECT INC. DATED OCTOBER 10, 2024.

1.13. LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY BSR&D, DATED SEPTEMBER 9, 2020.

1.14. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM PLAN PREPARED BY MTE CONSULTANTS INC, DATED MAY 14, 2024.

1.15. CONTRACTOR TO OBTAIN WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNER PRIOR TO ENTERING UPON NEIGHBOURING LANDS TO UNDERTAKE ANY WORK. COPIES OF THESE LETTERS OF CONSENT SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS FOR APPROVAL PRIOR TO ANY WORK BEING PERFORMED. FAILURE TO COMPLY WITH THE ABOVE IS AT CONTRACTOR'S OWN RISK.

1.16. RETAINING WALLS TO BE DESIGNED BY OTHERS. FOR WALLS EXCEEDING 1.0m IN HEIGHT, SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL AND BUILDING PERMIT MUST BE OBTAINED. WALLS OVER 0.6m IN HEIGHT REQUIRE HIGH SIDE OF RETAINING WALLS TO BE BACKFILLED WITH FREE DRAINING MATERIAL.

1.17. ALL RETAINING WALLS 1.0m IN HEIGHT AND OVER MUST BE APPROVED BY THE CBO. ALL RETAINING WALLS LESS THAN 1.0m IN HEIGHT MUST BE APPROVED BY PLANNING.

1.18. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1 METRE FROM FOUNDATION WALL.

1.19. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUAL.

1.20. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.

1.21. SIDE SLOPES OF ALL STOCKPILES OR EXTRACTION FACES TO BE MAINTAINED AT 7O DEGREES OR LESS BETWEEN EARLY APRIL AND LATE AUGUST TO DETER BANK SWALLOWS FROM NESTING.

1.22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

1.23. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

1.24. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.

1.25. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.

2. STORM SEWERS

2.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010, BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

2.2. STORM SEWERS 200mmø TO 375mmø SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 OR RIBBED PVC SEWER PIPE CSA B182.4-M90 ASTM-F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.

2.3. MANHOLES AND MANHOLE CATCHBASINS TO BE 1200mmø PRECAST WITH ALUMINUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.

2.4. CATCHBASINS TO BE 600mm SQUARE PRECAST AS PER OPSD 705.010.

2.5. ALL STORM STRUCTURES TO HAVE A MINIMUM 600mm DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER SIZE.

2.6. MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

2.7. STORM MANHOLE LIDS TO BE PER OPSD 401.010 – TYPE 'B' CATCHBASIN AND CATCHBASIN MANHOLE GRATES TO BE PER OPSD 400.100. DITCH INLET CATCHBASIN GRATES TO BE PER OPSD 403.010.

2.8. ADJUSTMENT UNITS FOR STORM STRUCTURES TO BE IN ACCORDANCE WITH OPSD 704.010 OR 704.011.

2.9. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED SEWER PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL COVER). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED EQUIVALENT.

2.10. UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM.

2.11. ALL WEEPING TILE DRAINAGE TO BE PUMPED TO THE STORM SEWER SYSTEM.

3. WATERMAINS

3.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

3.2. WATERMAINS 100mmø AND LARGER SHALL BE PVC C900 CLASS 150 INSTALLED WITH MINIMUM 2.0 METRES OF COVER. FITTINGS 100mmø AND LARGER SHALL BE PVC CLASS 150 (DR18) CSA B137.3.

3.3. WATERMAIN FITTINGS TO BE SUPPLIED WITH MECHANICAL JOINT RESTRAINTS. FOR WATERMAIN PIPE SIZES 150mmø OR LESS ALL PIPE JOINTS TO BE RESTRAINED WITHIN 5.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. FOR WATERMAIN PIPE SIZES GREATER THAN 150mmø ALL PIPE JOINTS TO BE RESTRAINED WITHIN 10.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. ALL TEES TO HAVE MINIMUM 2.0m SOLID PIPE LENGTH ON EACH RUN OF THE TEE, OR PROVIDE A THRUST BLOCK PER OPSD 1103.010.

3.4. ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE. PARTICULAR ATTENTION SHALL BE PAID TO ANODE INSTALLATION. CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF THE LOCAL MUNICIPALITY AND AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES.

3.5. WATERMAIN VALVES 100mmø AND LARGER SHALL BE AS PER AWWA C509 – MUELLER A2360-23 OR APPROVED EQUIVALENT (OPEN LEFT) INCLUDING VALVE BOX AND 2.3Kg ANODE INCLUDING ANODE PROTECTION INSTALLED PER LOCAL MUNICIPALITY STANDARDS.

3.6. WATER CONNECTIONS MAY BE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500mm IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)(a)(i) OF THE ONTARIO BUILDING CODE.

3.7. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 2.0m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR "WATER PIPE INSULATION DETAIL".

3.8. ALL WATERMAIN TO BE PRESSURE TESTED IN ACCORDANCE WITH OPSS 441. DISINFECT ALL WATERMAIN IN ACCORDANCE WITH AWWA C 651-99 INCLUDING CHLORINATION, BACKFLOW PREVENTOR AND 24 HOUR DUPLICATE SAMPLING. ALL TESTING AND DISINFECTION TO BE COMPLETED UNDER THE SUPERVISION OF THE ENGINEER. **(CONTRACTOR TO SUBMIT WATER COMMISSIONING PLAN IN ACCORDANCE WITH DGSSMS. THIS PLAN MUST BE APPROVED BY THE LOCAL MUNICIPALITY PRIOR TO ANY WATERMAIN WORK).**

3.9. PRIOR TO OCCUPANCY, CONTRACTOR MUST COMMISSION FIRE FLOW TEST FOR PRIVATE ON-SITE HYDRANT. PROVIDE RESULT TO DESIGN ENGINEER.

4. EROSION AND SEDIMENT CONTROL

4.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE COVER.

4.2. ALL SEDIMENT CONTROL FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.

4.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES. ALL STOCKPILES TO BE KEPT 2.5m MINIMUM FROM PROPERTY LINE.

4.4. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.

4.5. CONSTRUCTION ACCESS (MUD MAT) TO BE PROVIDED ON-SITE AT ALL LOCATIONS WHERE CONSTRUCTION VEHICLES EXIT THE SITE. CONSTRUCTION ACCESS (MUD MAT) SHALL BE A MINIMUM OF 3.0m WIDE, 15.0m LONG (LENGTH MAY VARY DEPENDING ON SITE LAYOUT) AND 0.3m DEEP AND SHALL CONSIST OF 200mm CLEAR STONE MATERIAL OR APPROVED EQUIVALENT. PROPOSED EROSION FENCING TO TIE INTO MUD MAT. CONTRACTOR TO ENSURE ALL VEHICLES LEAVE THE SITE VIA THE MUD MAT AND THAT THE MAT IS MAINTAINED IN A MANNER TO MAXIMIZE EFFECTIVENESS AT ALL TIMES.

4.6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.

4.7. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.

4.8. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE LOCAL MUNICIPALITY'S DEPARTMENT OF PUBLIC WORKS.

4.9. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.

4.10. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.

5. MAINTENANCE RECOMMENDATIONS

5.1. DURING THE COURSE OF CONSTRUCTION CONTRACTOR TO REMOVE SEDIMENT AND CONTAMINANTS FROM STORMWATER MANAGEMENT FACILITIES MONTHLY. FOLLOWING CONSTRUCTION CONTRACT COMPLETION, OWNER TO HIRE QUALIFIED CONTRACTOR TO REMOVE SEDIMENT AND CONTAMINANTS ANNUALLY AND REINSTATE STORMWATER MANAGEMENT FACILITIES ACCORDING TO THE DESIGN OUTLINED ON THIS PLAN, AS REQUIRED.

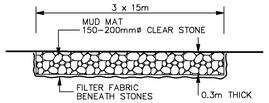
5.2. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.

5.3. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

5.4. THE PROPOSED STORMCEPTOR(STC) WILL REQUIRE REGULAR ANNUAL MAINTENANCE. OWNER TO ENTER INTO A MAINTENANCE AGREEMENT WITH A SUITABLE CONTRACTOR TO COMPLETE THIS WORK.

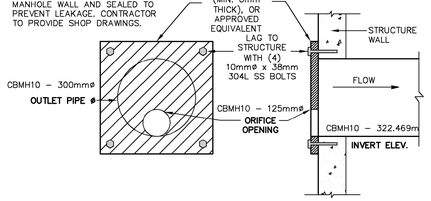
DESIGNATED ACCESS FOR ALL CONSTRUCTION TRAFFIC.

INSTALL 'MUD MAT', AS PER DETAIL BELOW, PRIOR TO ANY OTHER CONSTRUCTION. MAT TO BE MAINTAINED IN GOOD WORKING ORDER UNTIL GRADING WORKS ARE COMPLETED AND GRANULAR "A" & "B" HAVE BEEN PLACED.



CONSTRUCTION ACCESS DETAIL

N.T.S.



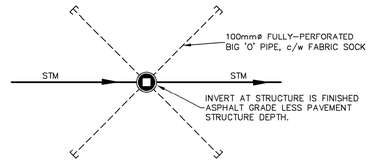
ON-LINE ORIFICE DETAIL

N.T.S.

PAVEMENT STRUCTURE

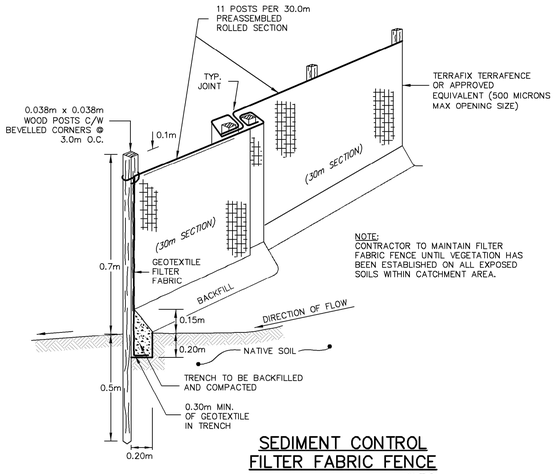
MATERIAL		RECOMMENDED THICKNESS	
		LIGHT DUTY	HEAVY DUTY
ASPHALTIC CONCRETE	HL3	40mm	40mm
	HL8	40mm	80mm
GRANULAR 'A' BASE		150mm	150mm
GRANULAR 'B' SUBBASE		250mm	350mm

BASED ON GEOTECHNICAL INVESTIGATION PREPARED BY: A&A ENVIRONMENTAL CONSULTANTS INC. – JULY 3,2024



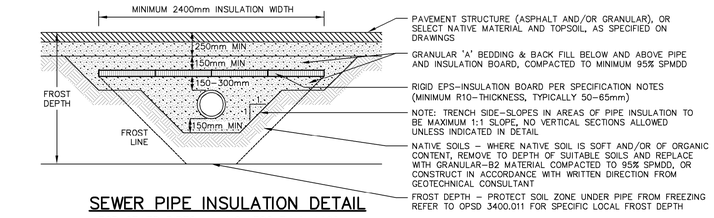
PAVEMENT SUBDRAIN DETAIL TYPICAL PLAN VIEW

N.T.S.



SEDIMENT CONTROL FILTER FABRIC FENCE

N.T.S.



SEWER PIPE INSULATION DETAIL

FOR SEWER PIPES HAVING LESS THAN 1400mm COVER AND MINIMUM 615mm COVER

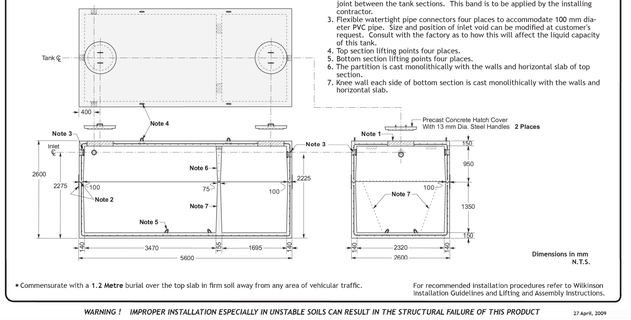
N.T.S.

28,500 LITRE PRECAST WASTEWATER HOLDING TANK MODEL H28.5S

WILKINSON HEAVY PRECAST LIMITED
DUNDAS, ONTARIO 905-628-5611
www.wilkinsonheavyprecast.com

CONSTRUCTION DETAILS *
Concrete: 35 MPa at 28 Days, 5 to 8% Air Entrainment.
Reinforcing: 10 M bars at 200 mm centres each way in roof, walls and floor; horizontally in top section partition. Four extra 15 M bars around roof access opening. Minimum cover over reinforcing steel - 25 mm.
Weight: Top Section 10,472 kg; Bottom Section 12,016 kg; Total 22,488 kg
Actual Capacity: 12,378 Litres Per Vertical Metre. 28,469 Litres to Underside of Roof Slab.

NOTES
1. Large 685 mm diameter roof access openings facilitate tank maintenance. Unless otherwise specified/ordered this tank will be shipped with 840 mm diameter concrete hatch covers. Please note that each cover weighs approximately 125 kg and must be handled only with suitable mechanical lifting equipment. See Access Riser section for available options.
2. Close tolerance of tongue and groove joint and fibrous mastic sealant ensures a solid structural and water-tight seal. Primer and Mastic Band are supplied with each tank for application to the external surface of the tank over the joint between the tank sections. This band is to be applied by the installing contractor.
3. Flexible watertight pipe connectors four places to accommodate 100 mm diameter PVC pipe. Size and position of inlet void can be modified at customer's request. Consult with the factory as to how this will affect the liquid capacity of this tank.
4. Top section lifting points four places.
5. Bottom section lifting points four places.
6. The partition is cast monolithically with the walls and horizontal slab of top section.
7. Knee wall each side of bottom section is cast monolithically with the walls and horizontal slab.



*Commensurate with a **1.2 Metre** burial over the top slab in firm soil away from any area of vehicular traffic.

For recommended installation procedures refer to Wilkinson Installation Guidelines and Lifting and Assembly Instructions.

WARNING ! IMPROPER INSTALLATION ESPECIALLY IN UNSTABLE SOILS CAN RESULT IN THE STRUCTURAL FAILURE OF THIS PRODUCT 27 April, 2009

50,000 LITRE CONCRETE WATER HOLDING TANK MODEL H50.1S

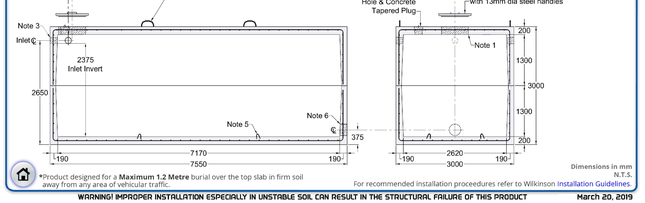
WILKINSON HEAVY PRECAST
WWW.WILKINSONHEAVYPRECAST.COM
DUNDAS, ONTARIO 1-800-263-8503

CONSTRUCTION DETAILS:
Concrete: 35 MPa at 28 Days, 5 to 8% Air Entrainment.
Reinforcing: Designed for a maximum 1.2 metre burial over the top slab in firm soil away from any area of vehicular traffic.

WEIGHT: Top Section - 22,000 kg; Bottom Section - 22,000 kg
CAPACITY: Per Vertical Metre - 19,277 Litres; To Underside of Roof Slab - 50,120 Litres

NOTES:
1. Large 685 mm diameter roof access openings facilitate tank maintenance. Unless otherwise specified when ordered this tank will be shipped with 840 mm diameter concrete roof access cover only. Please see Access Riser section for available riser & hatch options.
2. Close tolerance of tongue & groove joint & fibrous mastic sealant ensures a solid structural and watertight seal. Primer & Mastic Band are supplied with each tank for application to the external surface of the tank over the joint between sections. All sealant is to be applied by the installing contractor.
3. Flexible watertight inlet pipe connector to accommodate 150 mm diameter PVC pipe. Size and location of connecctions are customizable.
4. Top section lifting points four places.
5. Bottom section lifting points four places.
6. Knockout suitable to accommodate a flexible, watertight pipe connectoin for 150 or 200 mm diameter PVC pipe.

Some Available Options:
- Aluminum ladder rungs to the floor. Consult with the factory as to how this will effect the size and location of the access opening.
- Mechanical connection of the tank sections to enhance water tightness and resistance to frost heave.



*Product designed for a **Maximum 1.2 Metre** burial over the top slab in firm soil away from any area of vehicular traffic.

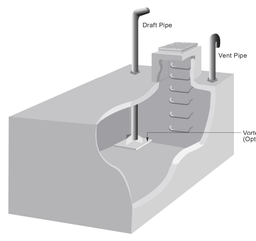
For recommended installation proceedures refer to Wilkinson Installation Guidelines.

WARNING! IMPROPER INSTALLATION ESPECIALLY IN UNSTABLE SOIL CAN RESULT IN THE STRUCTURAL FAILURE OF THIS PRODUCT March 20, 2019

TYPICAL PRECAST FIRE WATER RESERVOIR

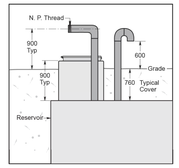
WILKINSON HEAVY PRECAST LIMITED
DUNDAS, ONTARIO 905-628-5611
www.wilkinsonheavyprecast.com

CONSTRUCTION DETAILS
Concrete: 35 MPa at 28 Days, 5 to 8% Air Entrainment.

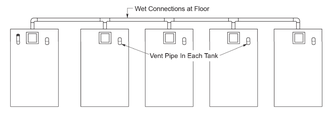


FEATURES
- Draft pipe and vent are steel pipe sized to suit, hot dip galvanized after fabrication.
- Vent pipe incorporates a stainless steel insect screen.
- Precast concrete access riser with frame and hinged, drip proof and lockable cover.
- Aluminum ladder rungs to the floor.
- Draft pipe draws from 75 mm above tank floor.
- Typical tank capacities from 25,000 to 114,000 Litres.
- For more capacity special fittings can be provided to connect any number of tanks in series.
- Contact the factory for optional cross connection and ventilation configurations.

TYPICAL APPURTENANCE DETAILS

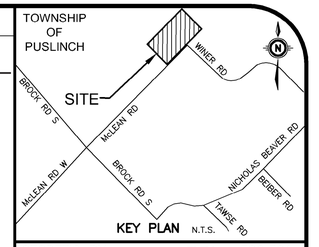


TYPICAL SERIES CONNECTION



Dimensions in mm N.T.S.

WARNING ! IMPROPER INSTALLATION ESPECIALLY IN UNSTABLE SOILS CAN RESULT IN THE STRUCTURAL FAILURE OF THIS PRODUCT 9 May, 2008



GEODETIC BM ELEV. = 326.301m
COSINE STATION- 00820068036
WELLINGTON COUNTY- MORRISTON- MONUMENT IS LOCATED ON NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF HWY 401 AT HWY 6 SOUTH.

SITE BENCHMARK ELEV. = 324.493m
RIB IN SOUTH CORNER OF SITE
POINT NUMBER-1

NOTE TO CONTRACTOR :

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

NOTE:
1. **PROPERTY LINE IS APPROXIMATE ONLY AND SHOULD NOT BE USED FOR DETERMINING SETBACKS OR LAYOUT.**
2. **THIS PLAN IS PART OF A SET OF PLANS WHICH COMPRISE OF THE FOLLOWING: C1.1, C2.1, C2.2, C2.3 AND THE SWM REPORT.**

No.	REVISION	BY	YYYY-MM-DD
8.			
7.			
6.			
5.			
4.			
3.			
2.			
1.	ISSUED FOR APPROVAL	AJS	2025-01-22

MTE
Engineers, Scientists, Surveyors
519-743-6500

OWNER
BVD REAL ESTATE INC.
130 DELTA PARK BOULEVARD BRAMPTON

PROJECT
7504 McLEAN ROAD
PUSLINCH

DRAWING
NOTES & DETAILS PLAN

Project Manager: A. SLAWICH	Project No.: 55237-100
Design By: AJS	Checked By:
Drawn By: JRS	Checked By: AJS
Surveyed By: MTE	Drawing No.: C2.3
Date: Oct.11/24	
Scale: 1:400

TRANSPORTATION DEPOT

7504 McLean Rd

LANDSCAPE ARCHITECTURE

ISSUED FOR SITE PLAN APPROVAL

MHBC PROJECT NO. 2469A

GENERAL NOTES:

1. ALL DRAWINGS ARE IN METRIC SCALE.

2. DEVELOPER SHALL MAINTAIN EXISTING TREES AND NEW PLANTINGS IN ACCORDANCE WITH THE APPROVED VEGETATION PLAN. ANY VEGETATION REPLACEMENT SHALL BE CONDUCTED IN ACCORDANCE WITH THE FINAL LANDSCAPE PLAN APPROVED BY THE CITY.

3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PROVINCIAL OR LOCAL MUNICIPAL PERMITS REQUIRED. ALL CONSTRUCTION SHALL CONFORM TO PROVINCIAL AND LOCAL MUNICIPAL STANDARDS AND CODES THAT PERTAIN TO THE SITE UNDER CONSTRUCTION.

4. CONTRACTOR SHALL ARRANGE FOR UTILITY STAKING PRIOR TO START OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO CONSTRUCTION TO BECOME FAMILIAR WITH EXISTING CONDITIONS. IF ANY DISCREPANCIES EXIST BETWEEN THE DRAWINGS AND ACTUAL SITE CONDITIONS, CONTRACTOR SHALL BRING THIS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.

5. EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS ARE PLOTTED FROM ORIGINAL SITE DRAWINGS AND/OR SITE TOPOGRAPHIC SURVEY. EVERY ATTEMPT HAS BEEN MADE TO SHOW ALL UTILITY LINES WHERE THEY EXIST. CONTRACTOR SHALL USE EVERY PRECAUTION IN EXCAVATING SINCE ACTUAL UNDERGROUND UTILITIES MAY NOT BE AS SHOWN. CONTRACTOR SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL UNDERGROUND UTILITY LOCATIONS PRIOR TO ANY EXCAVATION AND VERIFY LOCATIONS AND DEPTHS OF ALL UTILITIES.

6. CONTRACTOR SHALL PROVIDE HIS OWN LAYOUT, GRADING, STAKING, AND SURVEYING REQUIRED FOR CONSTRUCTION. REFER TO EXISTING SURVEY FOR BENCHMARKS AND OTHER EXISTING INFORMATION. CONTRACTOR SHALL FIELD VERIFY LAYOUT PRIOR TO CONSTRUCTION.

7. CONTRACTOR SHALL PROTECT ALL EXISTING AND NEW CONSTRUCTION FROM DAMAGE. SHOULD ANY DAMAGE OCCUR, CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS AT NO COST TO THE OWNER.

8. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS ON SITE.

9. PROVIDE BARRIERS OR OTHER PROTECTION TO KEEP VEHICULAR AND PEDESTRIAN TRAFFIC AWAY FROM CONSTRUCTION AREA AND OFF NEWLY PAVED AREAS BEFORE ASPHALT OR CONCRETE HAS CURED. DO NOT LEAVE ANY HOLES OPEN OVERNIGHT.

10. KEEP AREA OUTSIDE CONSTRUCTION ZONE CLEAN AND USABLE BY OTHERS AT ALL TIMES.

11. CONTRACTOR SHALL SUBMIT SAMPLES OF ALL PROPOSED MATERIALS FOR APPROVAL PRIOR TO PLACING ORDERS.

12. OBTAIN WORK PERMIT FROM EITHER THE MUNICIPALITY, REGION, OR BOTH AS THE CASE MAY BE PRIOR TO DOING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.

PLANTING NOTES:

1. ALL PLANTING AND INSTALLATION IN RIGHT OF WAY SHALL MEET LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.

2. LANDSCAPE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS ON SITE TO MINIMIZE DAMAGE TO COMPLETED LAWN AND PLANT MATERIAL INSTALLATION.

3. IF ANY DISCREPANCY EXISTS BETWEEN THE QUANTITIES, SIZES OR MATERIALS INDICATED ON THE PLAN AND SHOWN IN THE PLANT LIST, THE PLAN SHALL GOVERN.

4. IT IS THE LANDSCAPE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO START OF WORK, TO BECOME FAMILIAR WITH EXISTING CONDITIONS AT THE SITE.

5. CONTRACTOR IS RESPONSIBLE FOR ROUGH GRADING OF SUBGRADE BELOW LAWN AND LANDSCAPE AREAS.

6. CONTRACTOR IS RESPONSIBLE FOR RESPREADING TOPSOIL, FINE GRADING AND PREPARATION OF ALL LAWN AND LANDSCAPE AREAS.

7. PRIOR TO SPREADING TOPSOIL, LANDSCAPE CONTRACTOR SHALL INSPECT AND ACCEPT ALL BASE GRADES. ANY DEVIATION FROM LINE AND GRADE INDICATED ON THE GRADING PLAN SHALL BE CORRECTED BY EARTHWORK CONTRACTOR BEFORE PLACING ANY TOPSOIL.

8. BEFORE PLANT MATERIAL INSTALLATION BEGINS, STAKE LOCATIONS OF NEW PLANT MATERIAL AND NOTIFY LANDSCAPE ARCHITECT FOR APPROVAL. NOTIFY LANDSCAPE ARCHITECT ONE WEEK MINIMUM PRIOR TO TENTATIVE DATE OF STAKING.

9. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AREAS OF POOR DRAINAGE OR OTHER UNUSUAL SUBSURFACE CONDITIONS ARE ENCOUNTERED DURING EXCAVATION FOR PLANTING PITS.

10. ALL GRADING, UTILITY, AND IRRIGATION WORK SHALL BE COMPLETED PRIOR TO INSTALLATION OF PLANT MATERIAL AND LANDSCAPE MULCH.

11. ALL PLANT MATERIALS SHALL BE NO.1 NURSERY GROWN WHICH MEET SPECIFICATIONS FOR SIZE, HEIGHT, SPREAD, GRADING, QUALITY, METHOD OF CULTIVATION, AND CONDITION SPECIFICATIONS AS SET OUT IN THE CURRENT EDITION OF THE GUIDE SPECIFICATION FOR NURSERY STOCK PREPARED BY THE CANADIAN NURSERY LANDSCAPE ASSOCIATION.

12. ALL SHRUBS AND CONIFEROUS PLANTINGS SHALL BE INSTALLED IN CONTINUOUS PLANTING BEDS.

13. ALL SHRUB BEDS ADJACENT TO LAWN AREAS SHALL HAVE A SPADED EDGE BORDER, UNLESS METAL EDGE BORDER IS SPECIFIED. BORDER SHALL BE CUT 75mm DEEP AT A 45° ANGLE, SO THERE IS A CLEAR AND WELL DEFINED SEPARATION BETWEEN THE PLANTING BEDS AND SODDED AREAS.

14. ALL SHRUB BED AREAS SHALL HAVE A MINIMUM 100mm THICK LAYER OF LANDSCAPE MULCH.

15. CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION NOT DESIGNATED TO BE SODDED.

16. WHERE PROJECT SITE IS TO BE SODDED, CONTRACTOR SHALL PROVIDE NEW TOPSOIL AND SOD IN ANY ADJACENT RIGHT OF WAY FROM PROPERTY LINE TO BACK OF MUNICIPAL CURB.

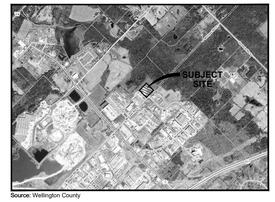
17. UNLESS OTHERWISE SPECIFIED, SODDED AREAS TO BE STAKED ON ANY 3:1 SLOPES.

18. CONTRACTOR SHALL WORK OVER LAWN AREAS THAT HAVE REMAINED PARTIALLY INTACT, TOP DRESSING WITH SOIL, SCARIFYING, AND SEEDING TO FORM A SMOOTH, FULL, EVEN LAWN, FREE OF BARE SPOTS, INDENTATIONS, AND WEEDS.

19. PLANT MATERIAL TO HAVE A WARRANTY OF TWO YEARS FROM ACCEPTANCE DATE.

GEODETIC BENCHMARK ELEVATION = 326.301
COSINE STATION - 0082068036, WELLINGTON COUNTY, MORRISTON
NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF 401 AT HWY 6 SOUTH
SITE BENCHMARK ELEVATION = 324.493
RIB IN SOUTH CORNER OF SITE, POINT NUMBER-1

Key Plan



Source: Wellington County

Legend

Rev.	Date	Issued / Revision	By
6			
5			
4			
3			
2			
1	JAN. 27, 2025	ISSUED FOR SPA	PH

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

Stamp

Date 2024-08-13

Drawn By RB/PH

Plan Scale AS NOTED

File No. 2469A

Checked By LW

Other

Project

TRANSPORTATION DEPOT
7504 McLEAN ROAD
Puslinch, Ontario

File Name COVER PAGE

Dwg No. L0

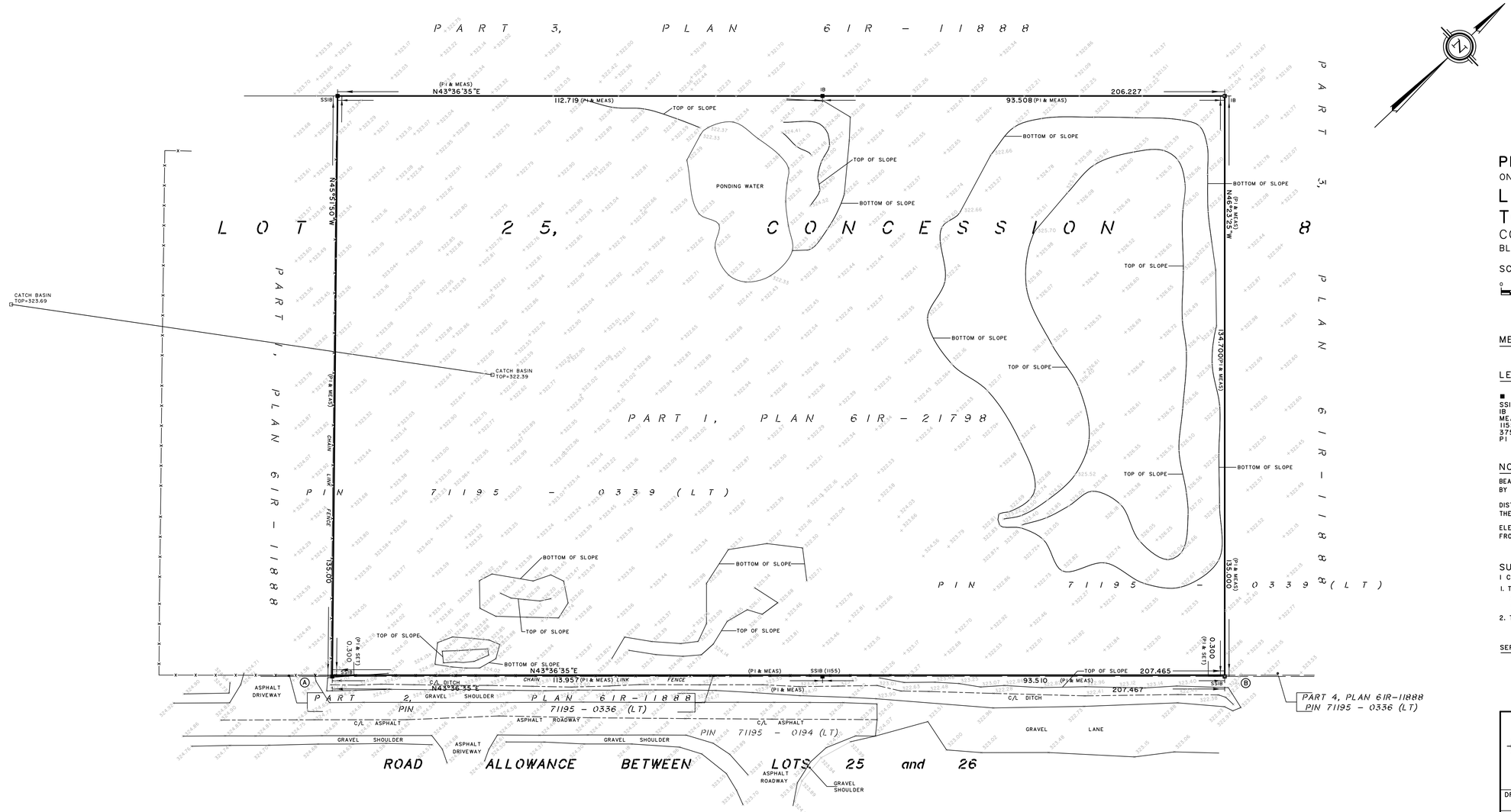
R:\PROJECTS IN PROGRESS\2469\A 7504 MCLEAN ROAD, PUSLINCH\01-CAD\2469A_7504 MCLEAN ROAD_LANDSCAPE_2025_01_27.DWG

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0). COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP(A)	570322.30	4812786.73
ORP(B)	5700465.40	4812936.94

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.



PLAN SHOWING TOPOGRAPHY

ON PART OF

LOT 25, CONCESSION 8
TOWNSHIP OF PUSLINCH

COUNTY OF WELLINGTON

BLACK, SHOEMAKER, ROBINSON & DONALDSON LIMITED

SCALE: 1 : 500

0 10 20 30 40 METRES

METRIC DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
MEAS	DENOTES	MEASURED
1155	DENOTES	VAN HARTEN SURVEYING (375 UNLESS OTHERWISE NOTED)
375	DENOTES	BLACK, SHOEMAKER, ROBINSON & DONALDSON LTD.
P1	DENOTES	DEPOSITED PLAN 61R-21798

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999615.

ELEVATIONS ARE GEODETIC (CGVD1928: 1978 ADJUSTMENT) AND ARE DERIVED FROM BENCHMARK 00820068036 WITH A PUBLISHED ELEVATION OF 325.889m.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON 31st. DAY OF AUGUST, 2020.

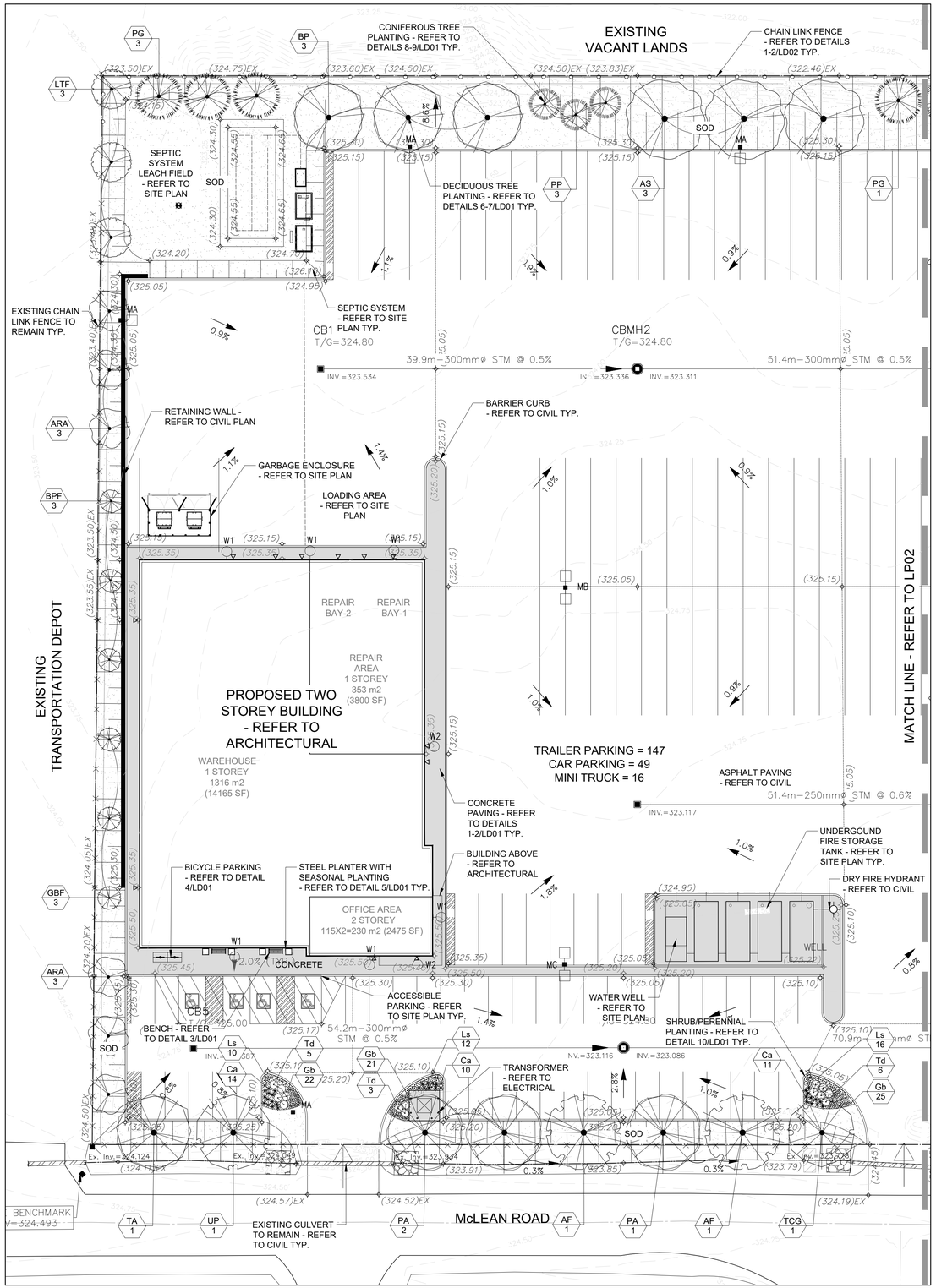
SEPTEMBER 9, 2020
DATE

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LEO LIU
ONTARIO LAND SURVEYOR

BSR&D ONTARIO LAND SURVEYORS URBAN & RURAL PLANNERS SURVEYING MAPPING GIS
A wholly owned subsidiary of J.D. Barnes Ltd.
257 WOODLAWN ROAD WEST #101, GUELPH, ON N1H 8J1
T: (519) 822-4031 F: (519) 822-1220 www.jdbarnes.com

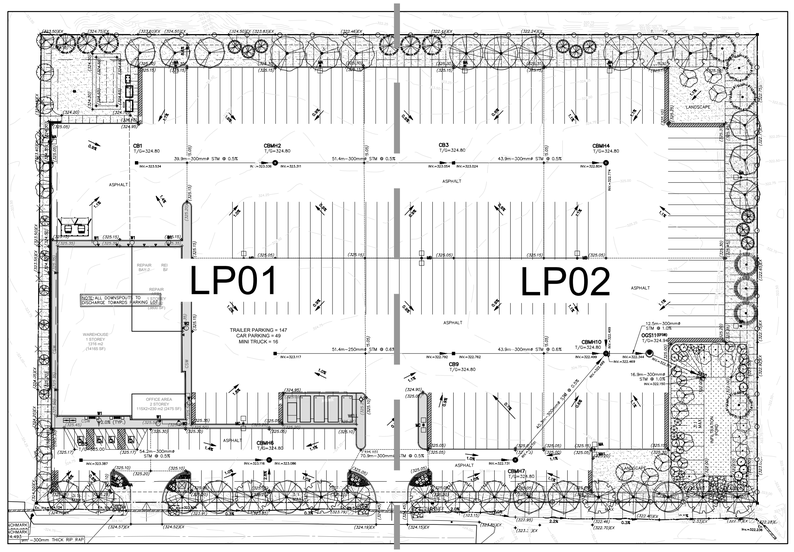
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KS	LL	18-14-810-02-A

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2 SOUTH LANDSCAPE PLAN

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1 LANDSCAPE KEY PLAN

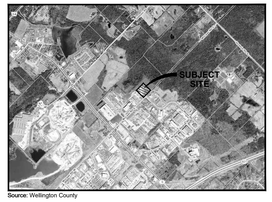
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PLANT SCHEDULE LP01

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CONIFEROUS TREES						
	PG	4	PICEA GLAUCA	WHITE SPRUCE	250CM HT.	W.B.
	PP	3	PICEA PUNGENS 'GLAUCA'	BLUE COLORADO SPRUCE	250CM HT.	W.B.
DECIDUOUS TREES						
	ARA	6	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE	60MM CAL.	W.B.
	AS	3	ACER SACCHARUM	SUGAR MAPLE	60MM CAL.	W.B.
	AF	2	ACER X FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE (JEFFERSRED) MAPLE	60MM CAL.	W.B.
	BP	3	BETULA PAPYRIFERA	PAPER BIRCH	60MM CAL.	W.B.
	BPF	3	BETULA PENDULA 'FASTIGIATA'	UPRIGHT EUROPEAN WHITE BIRCH	60MM CAL.	W.B.
	GBF	3	GINKGO BILOBA 'FASTIGIATA'	FASTIGIATE MAIDENHAIR TREE	60MM CAL.	W.B.
	LTF	3	LIRIODENDRON TULIPIFERA 'FASTIGIATA'	COLUMNAR TULIP POPLAR	60MM CAL.	W.B.
	PA	3	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANE TREE	60MM CAL.	W.B.
	TA	1	TILIA AMERICANA	AMERICAN LINDEN	60MM CAL.	W.B.
	TCG	1	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	60MM CAL.	W.B.
	UP	1	ULMUS X 'PIONEER'	PIONEER ELM	60MM CAL.	W.B.
CONIFEROUS SHRUBS						
	Td	14	TAXUS CUSPIDATA `DENSIFORMIS'	DENSE JAPANESE YEW	3 GAL.	POT
GRASSES						
	Ca	35	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	1 GAL.	POT
PERENNIALS						
	Gb	68	GERANIUM MACRORRHIZUM	BIGROOT GERANIUM	1 GAL.	POT
	Ls	38	LIRIOPE MUSCARI `SILVER DRAGON'	SILVER DRAGON LILYTURF	1 GAL.	POT

GEODETIC BENCHMARK ELEVATION = 326.301
COSINE STATION - 0082068036, WELLINGTON COUNTY, MORRISTON
NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF 401 AT HWY 6 SOUTH
SITE BENCHMARK ELEVATION = 324.493
RIB IN SOUTH CORNER OF SITE, POINT NUMBER:-1

Key Plan



Source: Wellington County

Subject Site

NOT TO SCALE

Legend

- PROPERTY BOUNDARY
- EXISTING CHAIN LINK FENCE
- PROPOSED CHAIN LINK FENCE
- PROPOSED CONCRETE PAVING
- PROPOSED TREES
- PROPOSED SHRUBS & PERENNIALS
- PROPOSED SOD

SEED MIX #1 - CUSTOM NATIVE PRAIRIE MEADOW MIX
by OSC Seeds 519-886-0557 or approved equal.

5% BLACK EYED SUSAN	(Rudbeckia hirta)
5% EARLY GOLDENROD	(Solidago juncea)
5% EVENING PRIMROSE	(Oenothera biennis)
20% FOWL BLUEGRASS	(Poa palustris)
5% FOXGLOVE/BEARDTOUNGUE	(Persternon digitalis)
25% VIRGINIA WILD RYE	(Elymus virginicus)
5% NEW ENGLAND ASTER	(Aster novae-angiae)
10% BUTTERFLY WEED	(Aesclepias tuberosa)
5% WHITE VERVAIN	(Verbena urticifolia)
5% WILD BERGAMOT	(Monarda fistulosa)
10% BOTTLEBRUSH GRASS	(Elymus hystrix)

SEEDING RATE: 25 kg/ha OR 500g/180m2
SIMUTANEOUSLY SOW COVER CROP OF ANNUAL RYE GRASS FOR EROSION AND WEED CONTROL AT 22kg/ha. INSTALL AS PER MANUFACTURER'S SPECIFICATIONS. ALL PACKING SLIPS MUST BE PROVIDED TO THE LANDSCAPE ARCHITECT OR OWNER, PRIOR TO SEED PLACEMENT.

NOTES:

1. EXISTING TOPOGRAPHICAL INFORMATION PROVIDED BY MTE CONSULTANTS DATED MAY 14, 2024.
2. REFER TO CIVIL ENGINEERING DRAWINGS BY MTE CONSULTANTS FOR SEDIMENT AND EROSION CONTROL MEASURES, LIMIT OF CONSTRUCTION, DETAILED SERVICING AND GRADING.
3. PROPERTY LINE IS APPROXIMATE ONLY AND SHOULD NOT BE USED FOR DETERMINING SETBACKS OR LAYOUT.
4. ANY AREAS DISTURBED BY CONSTRUCTION TO BE RESTORED AND MADE GOOD WITH 150mm TOPSOIL AND SOD OR MATCH EXISTING MATERIAL AS INDICATED TO TOWNSHIP OF PUSLINCH SATISFACTION, AT NO EXTRA COST.
5. REMOVE AND DISPOSE OF EXCESS MATERIAL OFF SITE.
6. ALL PLANTING BEDS TO HAVE THE FOLLOWING DEPTH OF PLANTING MIX:
   - 6.1. MINIMUM 600mm PLANTING MEDIUM FOR SHRUBS.
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9. ALL TREES TO BE PLANTED A MINIMUM OF 2m FROM UTILITIES. ANY TREE PLANTED WITHIN 2m OF UTILITIES SHALL HAVE A 48" (4') DEPTH ROOT BARRIER PRODUCT.

Rev.	Date	Issued / Revision	By
6			
5			
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1	JAN. 27, 2025	ISSUED FOR SPA	PH

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

Stamp

Date 2024-08-13
Drawn By RB/PH
Plan Scale AS NOTED
File No. 2469A
Checked By LW
Other

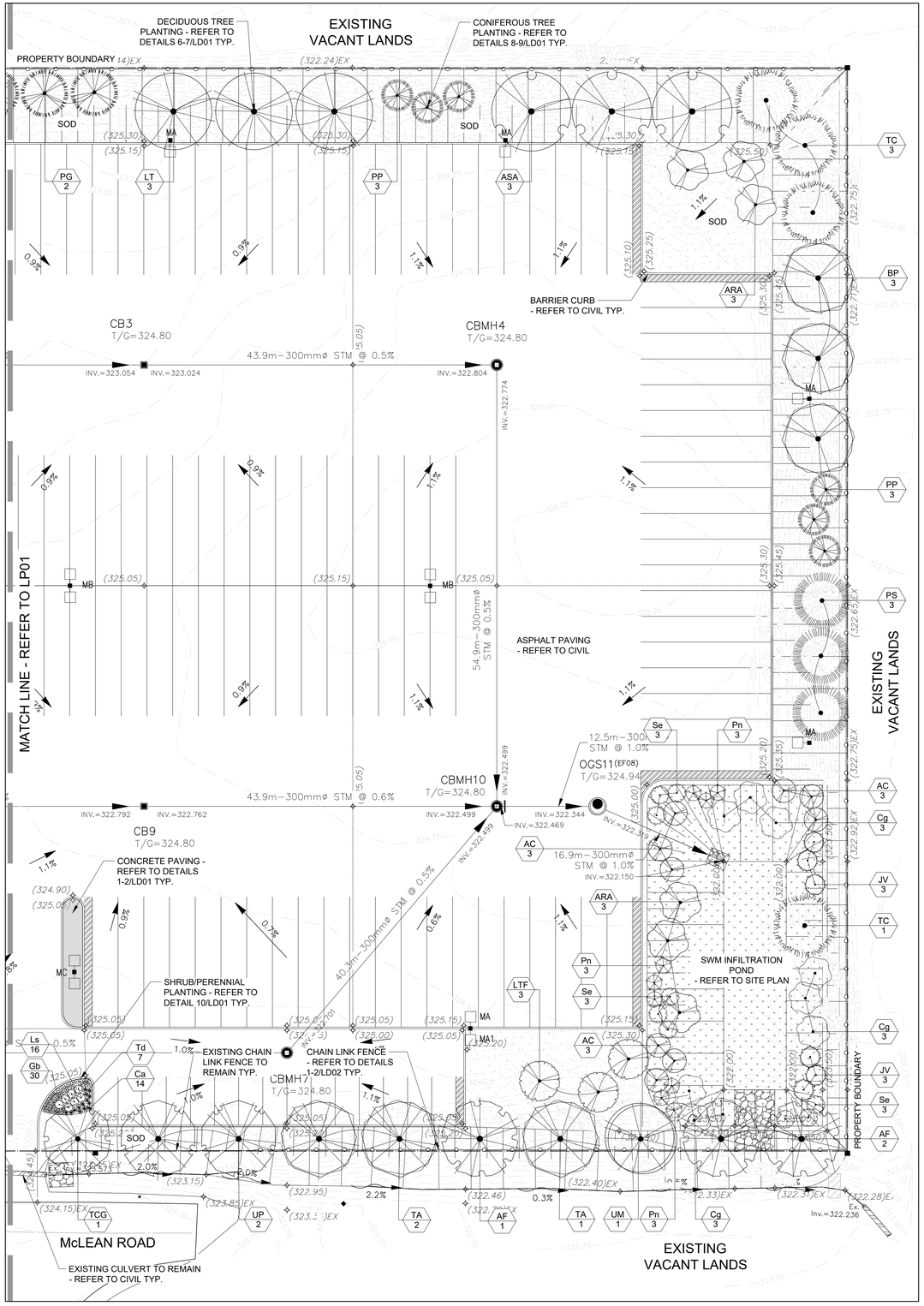
Project

TRANSPORTATION DEPOT
7504 McLEAN ROAD
Puslinch, Ontario

NORTH

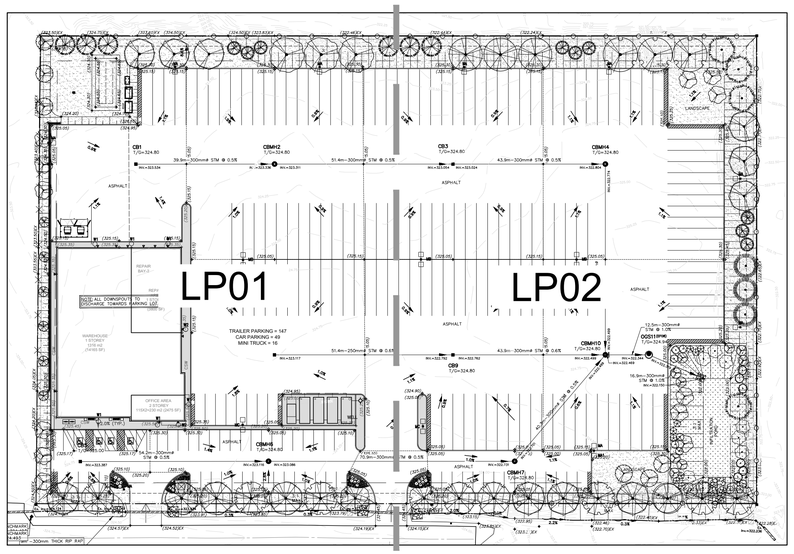
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Dwg No. LP01

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2 NORTH LANDSCAPE PLAN

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1 LANDSCAPE KEY PLAN

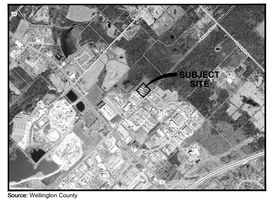
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PLANT SCHEDULE LP02

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CONIFEROUS TREES						
	JV	6	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	250CM HT.	W.B.
	PG	2	PICEA GLAUCA	WHITE SPRUCE	250CM HT.	W.B.
	PP	6	PICEA PUNGENS 'GLAUCA'	BLUE COLORADO SPRUCE	250CM HT.	W.B.
	PS	3	PINUS STROBUS	WHITE PINE	250CM HT.	W.B.
	TC	4	TSUGA CANADENSIS	EASTERN HEMLOCK	250CM HT.	W.B.
DECIDUOUS TREES						
	ARA	6	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE	60MM CAL.	W.B.
	ASA	3	ACER SACCHARINUM	SILVER MAPLE	60MM CAL.	W.B.
	AF	3	ACER X FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE (JEFFERSRED) MAPLE	60MM CAL.	W.B.
	AC	9	AMELANCHIER CANADENSIS	CANADIAN SERVICEBERRY	50MM CAL.	W.B.
	BP	3	BETULA PAPYRIFERA	PAPER BIRCH	60MM CAL.	W.B.
	LT	3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	60MM CAL.	W.B.
	LTF	3	LIRIODENDRON TULIPIFERA 'FASTIGIATA'	COLUMNAR TULIP POPLAR	60MM CAL.	W.B.
	TA	3	TILIA AMERICANA	AMERICAN LINDEN	60MM CAL.	W.B.
	TCG	1	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	60MM CAL.	W.B.
	UM	1	ULMUS X 'MORTON'	ACCOLADE™ ELM	60MM CAL.	W.B.
	UP	2	ULMUS X 'PIONEER'	PIONEER ELM	60MM CAL.	W.B.
CONIFEROUS SHRUBS						
	Td	7	TAXUS CUSPIDATA `DENSIFORMIS`	DENSE JAPANESE YEW	3 GAL.	POT
DECIDUOUS SHRUBS						
	Cg	9	CORNUS RACEMOSA	GRAY DOGWOOD	125CM HT.	POT
	Pn	9	PHYSOCARPUS OPULIFOLIUS	NINEBARK	60CM HT.	POT
	Se	9	SAMBUCUS CANADENSIS	AMERICAN ELDERBERRY	125CM HT.	POT
GRASSES						
	Ca	14	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	1 GAL.	POT
PERENNIALS						
	Gb	30	GERANIUM MACRORRHIZUM	BIGROOT GERANIUM	1 GAL.	POT
	Ls	16	LIRIOPE MUSCARI `SILVER DRAGON`	SILVER DRAGON LILYTURF	1 GAL.	POT

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MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON, N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

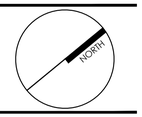
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Date	2024-08-13
Drawn By	RB/PH
Plan Scale	AS NOTED
File No.	2469A
Checked By	LW
Other	

Project

TRANSPORTATION DEPOT
7504 McLEAN ROAD
Puslinch, Ontario

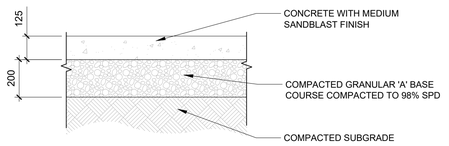


File Name	Dwg No.
LANDSCAPE PLAN	LP02

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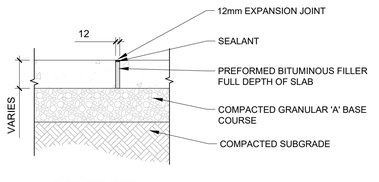
NOTES:

1. 6.0m MAX SPACING FOR EXPANSION JOINTS, 3.0m MAX FOR CONTROL JOINTS ON 1500mm WIDE WALK OR AS REQUIRED
2. CONCRETE TO BE CAST IN PLACE AT 32MPa

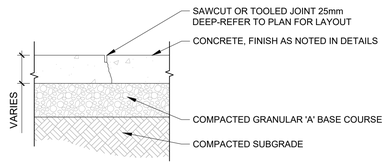


1 CONCRETE PAVING

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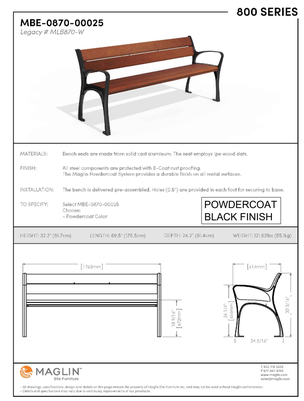
EXPANSION JOINT



CONTRACTION JOINT

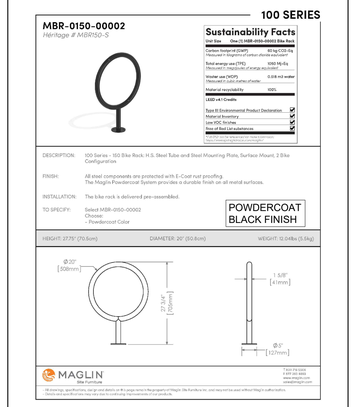
2 TYPICAL CONCRETE JOINTS

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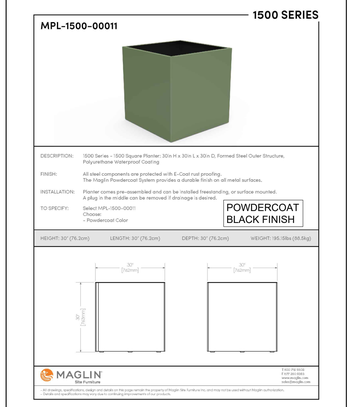
3 BENCH - MAGLIN

N.T.S.



4 BICYCLE RACK - MAGLIN

N.T.S.

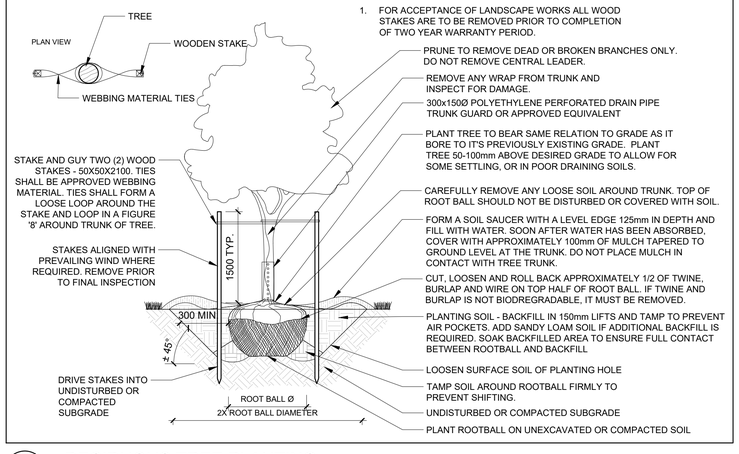


5 STEEL PLANTER - MAGLIN

N.T.S.

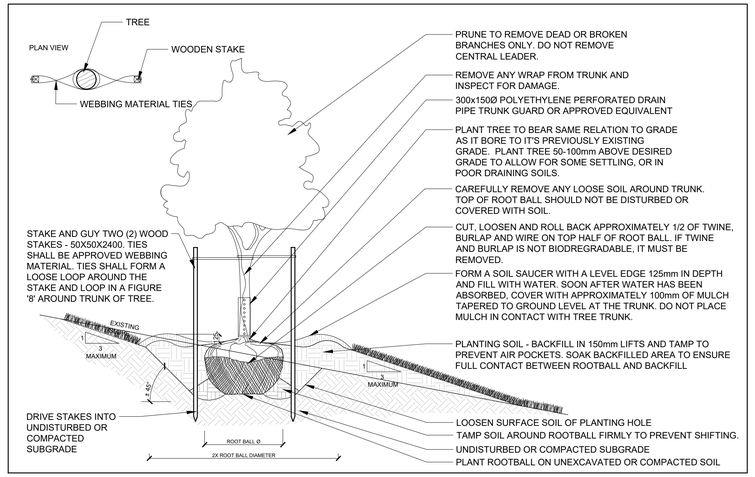
NOTES:

1. FOR ACCEPTANCE OF LANDSCAPE WORKS ALL WOOD STAKES ARE TO BE REMOVED PRIOR TO COMPLETION OF TWO YEAR WARRANTY PERIOD.



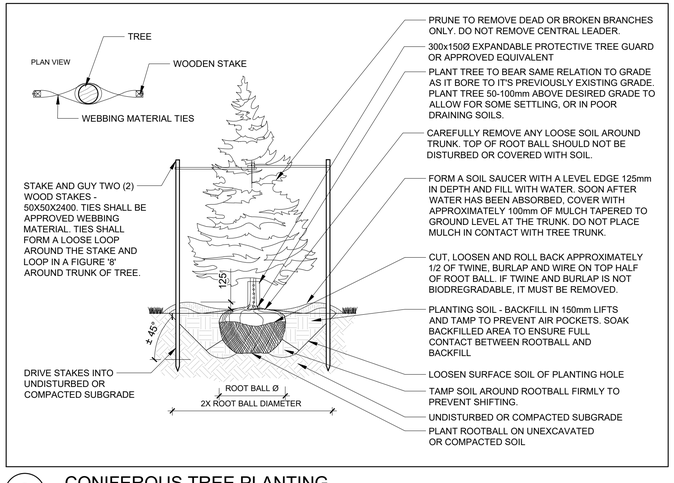
6 DECIDUOUS TREE PLANTING

1:25



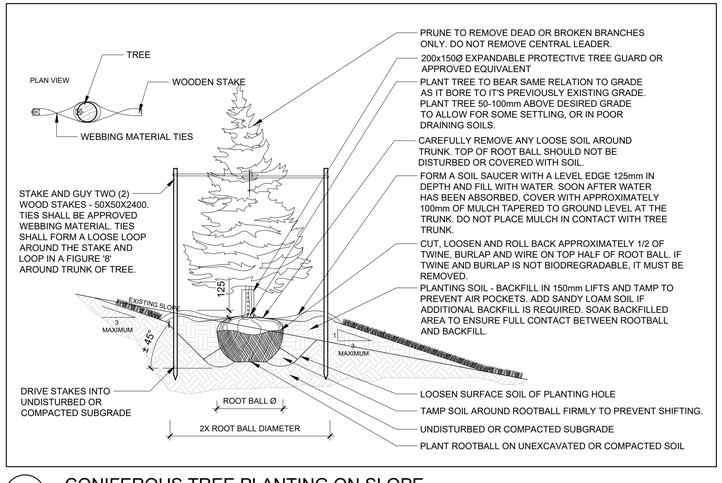
7 DECIDUOUS TREE PLANTING ON SLOPE

1:25



8 CONIFEROUS TREE PLANTING

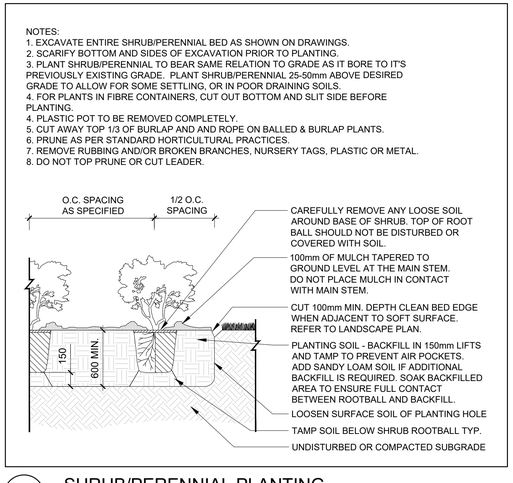
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9 CONIFEROUS TREE PLANTING ON SLOPE

1:25

NOTES:
1. EXCAVATE ENTIRE SHRUB/PERENNIAL BED AS SHOWN ON DRAWINGS.
2. SCARIFY BOTTOM AND SIDES OF EXCAVATION PRIOR TO PLANTING.
3. PLANT SHRUB/PERENNIAL TO BEAR SAME RELATION TO GRADE AS IT BORE TO IT'S PREVIOUSLY EXISTING GRADE. PLANT SHRUB/PERENNIAL 25-50mm ABOVE DESIRED GRADE TO ALLOW FOR SOME SETTLING, OR IN POOR DRAINING SOILS.
4. FOR PLANTS IN FIBRE CONTAINERS, CUT OUT BOTTOM AND SLIT SIDE BEFORE PLANTING.
4. PLASTIC POT TO BE REMOVED COMPLETELY.
5. CUT AWAY TOP 1/3 OF BURLAP AND AND ROPE ON BALLED & BURLAP PLANTS.
6. PRUNE AS PER STANDARD HORTICULTURAL PRACTICES.
7. REMOVE RUBBING AND/OR BROKEN BRANCHES, NURSERY TAGS, PLASTIC OR METAL.
8. DO NOT TOP PRUNE OR CUT LEADER.

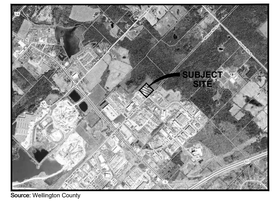


10 SHRUB/PERENNIAL PLANTING

1:30

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NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF 401 AT HWY 6 SOUTH
SITE BENCHMARK ELEVATION = 324.493
RIB IN SOUTH CORNER OF SITE, POINT NUMBER:1

Key Plan



Source: Wellington County

Legend

Rev.	Date	Issued / Revision	By
6			
5			
4			
3			
2			
1	JAN. 27, 2025	ISSUED FOR SPA	PH

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

Stamp

Date	2024-08-13
Drawn By	RB/PH
Plan Scale	AS NOTED
File No.	2469A
Checked By	LW
Other	

Project

TRANSPORTATION DEPOT
7504 McLEAN ROAD
Puslinch, Ontario

File Name	LANDSCAPE DETAILS
Dwg No.	LD01

R:\PROJECTS IN PROGRESS\2469\A 7504 MCLEAN ROAD, PUSLINCH\01-CAD\2469A_7504 MCLEAN ROAD_LANDSCAPE_2025_01_27.DWG

NOTES:
1 For footing details and line post cap detail refer to OPSD 972.132.
A Fence as viewed from the roadway.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev	2
FENCE, CHAIN–LINK INSTALLATION – ROADWAY			
OPSD 972.130			

1 CHAIN LINK FENCE

N.T.S

POST DETAILS TABLE (Note 1)

Post/Frame Member Type		OD	Post Length Standard m	Post Length Retaining Walls m	Wall Thickness	Nominal Weight kg/m (Note 2)
Line post		60.3	2.6	2.0	3.91	5.4
Terminal Post		88.9	2.9	2.3	5.49	11.3
Gates (Single 3.0m, Double 6.0m)	Gatepost	88.9	2.6	n/a	5.49	11.3
	Frame Members	42.2	n/a	n/a	3.56	3.4
Gates (Single 4.5m, Double 9.0m)	Gatepost	114.3	2.9	n/a	6.02	16.1
	Frame Members	48.3	n/a	n/a	3.68	4.0
Post Sleeves	Line Post	88.9	n/a	0.455	5.49	11.3
	Terminal Post	114.3	n/a	0.455	6.02	16.1

NOTES:
1 All posts and frame members are Schedule 40, Regular Grade, steel pipe.
2 The actual weight shall not vary by more than 10% of the nominal weight.
A All dimensions are in millimetres unless otherwise shown.

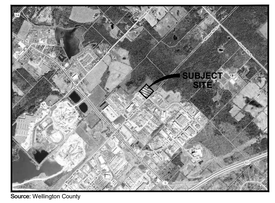
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev	0
FENCE, CHAIN–LINK DETAILS AND TABLE			
OPSD 972.132			

2 CHAIN LINK FENCE

N.T.S

GEODETIC BENCHMARK ELEVATION = 326.301
COSINE STATION - 00820068036, WELLINGTON COUNTY, MORRISTON
NORTHEASTERLY PAD OF HYDRO TOWER ON NORTH SIDE OF 401 AT HWY 6 SOUTH
SITE BENCHMARK ELEVATION = 324.493
RIB IN SOUTH CORNER OF SITE, POINT NUMBER-1

Key Plan



Source: Wellington County

Subject Site

NOT TO SCALE

Legend

Rev.	Date	Issued / Revision	By
6			
5			
4			
3			
2			
1	JAN. 27, 2025	ISSUED FOR SPA	PH

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[redacted]

Date 2024-08-13

Drawn By RB/PH

Plan Scale AS NOTED

File No. 2469A

Checked By LW

Other

Project

TRANSPORTATION DEPOT
7504 McLEAN ROAD
Puslinch, Ontario

File Name LANDSCAPE DETAILS

Dwg No. LD02

R:\PROJECTS IN PROGRESS\2469\A 7504 MCLEAN ROAD, PUSLINCH\01-CAD\2469A_7504 MCLEAN ROAD_LANDSCAPE_2025_01_27.DWG



7504 McLean Road East, Puslinch

Scoped Environmental Impact Study

Prepared for:

BVD Real Estate Inc.
130 Delta Park BLVD
Brampton ON L6T 5E7

Project No. 3370 | January 2025

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

7504 McLean Road East, Puslinch

Scoped Environmental Impact Study

Project Team

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Report submitted on Jan 28 2025

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Project Manager
Terrestrial and Wetland Biologist

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1.0 Introduction

Natural Resource Solutions Inc. (NRSI) was retained by BVD Real Estate Inc to complete a Scoped Environmental Impact Study (EIS) in support of a proposed construction of a logistics facility at 7504 McLean Road East in the Township of Puslinch, Ontario, herein referred to as 'the subject property'.

The subject property is approximately 2.7ha in size and is bounded by McLean Road to the southeast and industrial facilities to the south and southwest. Small areas of cultural meadow lie immediately to the northwest and northeast of the subject property. Beyond these cultural meadows, a woodland natural feature containing the Mill Creek Puslinch Wetland Complex lies approximately 30m from the northwest and northeast property boundaries.

The subject property has been graded and is comprised of an area of gravel fill surrounded by soil berms vegetated with weedy early-succession plant species. No natural features exist on the subject property itself. Small areas of cultural meadow lie immediately to the northwest and northeast of the subject property.

The majority of the subject property is currently zoned as Secondary Agricultural lands, and the northeast edge of the property is mapped as forming part of the Core Greenlands System (Wellington County OP, Schedule B7, 2024). The Core Greenlands System mapping within the subject property appears to be inaccurate or outdated. Historical aerial imagery of this area shows it has been subject to agricultural activities since at least 2012. The northern part of the subject property also falls within the regulation limit of the Grand River Conservation Authority (GRCA); this regulated area is part of the buffer of the engineered floodplain as mapped by GRCA.

Due to the presence of GRCA-regulated features on and adjacent to the subject property, a scoped EIS is required to demonstrate that the proposed development will not negatively impact adjacent natural features or their ecological functions.

This Scoped EIS has been prepared in accordance with the approved Terms of Reference dated September 26, 2024 (included in Appendix I) following the guidance of the County of Wellington OP (2024), the Township of Puslinch (2024) and the EIS guidelines of the GRCA (2005). This report assesses the potential impacts of the proposed development on the natural heritage features and their ecological functions. Mitigation measures, where appropriate, have

been recommended to ensure that the proposed works do not cause negative impacts on the natural areas and their ecological functions.

1.1 Study Area

The term “study area” refers to the subject property and lands surrounding the subject property, including adjacent lands (approximately 120m) and any contiguous natural features extending beyond (Map 1). The 120m radius that is included in the study area has been selected based on the definition of ‘adjacent lands’ provided in the Natural Heritage Reference Manual [NHRM] (OMNR 2010), which requires the assessment of potential impacts on all relevant ecological receivers and wildlife habitat for any development within 120m.

Additionally, the study area review includes data from the Natural Heritage Information Centre [NHIC] (MNRF 2022) (1x1km squares) natural heritage background data and the areas covered by wildlife atlases (10x10km squares).

2.0 Project Scoping

2.1 Proposed Undertaking

The proposed development of the subject property consists of the construction of a commercial transportation logistics facility (1899 m^2, Kalap Architect Inc 2024), which will include a two-story logistics facility with a first-floor warehouse space and second floor offices, 2 loading dock spaces, 151 trailer parking spots, 72 car and mini-truck parking spots, access roads, and a sewer system and stormwater management pond.

2.2 Collection and Review of Background Information

Existing natural heritage information was collected and reviewed to identify key natural heritage features, habitats and species that are reported from, or have the potential to occur within the study area. The following background information sources were reviewed to provide an accurate understanding of the physical and biological attributes within the study area:

- Natural Heritage Information Centre (NHIC) significant species database;
- Ministry of Natural Resources and Forestry (MNRF), Aylmer Guelph District;
- Grand River Conservation Authority Regulations Mapping;
- Wellington County Official Plan (2024);
- Ontario Breeding Bird Atlas (BSC et al. 2022);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2021);
- Atlas of the Mammals of Ontario (Dobbyn 1994);
- Ontario Butterfly Atlas (McNaughton et al. 2024);
- Ontario Odonate Atlas Database (OOAD 2023); and,
- iNaturalist online records for the vicinity of the subject lands.

Species lists were compiled to provide information on species reported from within the vicinity of the study area based on data available from the wildlife atlases listed above. These atlases provide data based on 10x10 km survey squares. Information on species from the survey squares that overlap with the study area (Atlas square 17NJ71, NHIC squares 17NJ7012 and 17NJ7013) were compiled. These initial species lists were used to guide the scope and type of wildlife field surveys required as outlined in the following sections.

2.2.1 Significant Species Screening

A preliminary list of potential Species at Risk (SAR) was developed to identify those species which are reported within the local area and may have suitable habitat within the subject property and study area. An initial list was compiled from background data gathered from the sources mentioned above. The screening was completed by cross-referencing the preferred habitat for potential SAR and Species of Conservation Concern (SCC) (OMNR 2000) against habitats known to occur in the subject property and study area. This was completed to ensure that the potential presence of all SAR and SCC within the study area was adequately assessed. SAR are defined as species listed as Threatened or Endangered provincially or federally. Confirmed habitat for SAR is protected under the *ESA* (2007). SCC are defined as:

- Species designated provincially as Special Concern;
- Species that have been assigned a conservation status (S-Rank) of S1 to S3 or SH by the NHIC; and
- Species that are designated federally as Threatened or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC), but not provincially by the Committee on the Status of Species at Risk in Ontario (COSSARO). These species are protected by the federal *Species at Risk Act*, but not provincially by the *ESA*.

The screenings identified the following SAR/SCC as having potential to be present and to have potential to be impacted by the proposed development:

- Midland Painted Turtle (*Chrysemys picta marginata*),
- Snapping Turtle (*Chelydra serpentina*),
- Eastern Milksnake (*Lampropeltis triangulum*),
- Smooth Yellow False Foxglove (*Aureolaria flava*),
- Black Ash (*Fraxinus nigra*),
- Eastern Meadowlark (*Sturnella magna*), and
- Bobolink (*Dolichonyx oryzivorus*).

The SAR/SCC screening results have been updated since the TOR stage and are provided in Appendix I.

2.2.2 Significant Wildlife Habitat Screening

A Significant Wildlife Habitat (SWH) assessment was completed for the study area and is included in Appendix I. The Significant Wildlife Habitat Technical Guide (SWHTG) is a guideline document that outlines the types of habitats that the MNRF considers significant in Ontario as well as criteria to identify these habitats (OMNR 2000, OMNR 2015). The SWHTG groups SWH into 4 broad categories: 1) seasonal concentration areas, 2) rare vegetation communities and specialized wildlife habitat, 3) habitats of SCC, and 4) animal movement corridors.

Based on the comparison of the species observed and documented, natural features, and vegetation communities present within the subject property, none of the natural features screened were identified as potential SWH candidates within the subject property.

Adjacent lands in the study area associated with the large woodland feature and PSW have more potential to provide several SWH types. Due to a lack of access to the adjacent properties, SWH was assessed as best as possible from within the subject property boundaries. For the full list of potential SWH types in the study area, see Appendix I.

3.0 Relevant Policies, Legislation and Planning Studies

Table 1 provides an overview of natural heritage-based policies, regulation and legislation that were considered and which informed the field program and analysis. To help inform suitable land-use concepts, guide the layout of development and identify areas to be protected, inventoried natural features were evaluated against relevant policies, regulations and legislation outlined in the following sections. The specific implications of these policies to the proposed development are discussed further below.

Table 1. Relevant Policies, Legislation and Planning Studies

Policy/Legislation/Planning Study	Description	Project Relevance

Provincial Policy Statement (OMMAH 2024)	• Issued under the authority of Section 3 of the Planning Act and came into effect on October 20, 2024, replacing the 2020 Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe (2019).
	• Section 4.1 of the PPS – Natural Heritage establishes clear direction on the adoption of an ecosystem approach and the protection of resources that have been identified as 'significant'.
	• The Natural Heritage Reference Manual (OMNR 2010) and the Significant Wildlife Habitat Technical Guide (OMNR 2000) were prepared by the MNRF to provide guidance on identifying natural features and in interpreting the Natural Heritage sections of the PPS.
		• Natural features were identified within or adjacent to the subject property development area as having implications under the PPS that should be considered:
		  ○ Provincially Significant Wetland;
		  ○ Significant Woodland;
		• Development or site alteration shall not be permitted within significant wildlife habitats, unless it is demonstrated that there will be no negative impacts of the features and their ecological functions.
		• Diversity and connectivity of natural features and the long-term ecological functions and biodiversity of natural heritage systems should be maintained, restored and improved where possible, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features.

Policy/Legislation/Planning Study	Description	Project Relevance
Endangered Species Act (Government of Ontario 2007)	• The original ESA, written in 1971, underwent a year-long review which resulted in a number of changes which came into force in 2007. • The ESA prohibits killing, harming, harassing or capturing Species at Risk (SAR) and protects their habitats from damage and destruction. Ontario Regulation 242/08 under the ESA applies to all species on the Species at Risk in Ontario List, as of June 2, 2017. • Ontario Regulation 829/21 and 830/21 may apply depending on which SAR are confirmed to be present within the Subject Property where harm to those species and their habitat is proposed.	• Potential habitat for Endangered and Threatened Species within the Study Area was identified during the initial TOR screening exercise for the Block Plan EIS. • The EIS must have consideration for the ESA which is administered by the MECP.
Species at Risk Act (SARA, Government of Canada 2002)	• SARA establishes the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as an independent body of experts responsible for assessing and identifying species at risk. • It creates prohibitions to protect listed threatened and endangered species and their critical habitat.	• Any observed species listed by COSEWIC as endangered or threatened shall be protected, along with their habitat. • The EIS shall demonstrate that no impacts to SAR will occur.

Policy/Legislation/Planning Study	Description	Project Relevance
Migratory Birds Convention Act (MCBA) (Government of Canada 2017)	• The MBCA protects migratory game birds, insectivorous birds, and several other migratory non-game birds from persecution in the form of harassment. • The schedule of on-site work must consider MBCA windows, with timing of breeding bird season typically occurring between April 1 and August 31, however, this is a guideline, since the MBCA applies to nesting bird species. • "Incidental take" is considered illegal, with the exception of a permit obtained by the Canadian Wildlife Service (CWS).	• Species protected by the MBCA were observed within the subject property during field surveys. • The timing of construction activities, especially vegetation clearing and site grading must have consideration for the MB CA timing windows.
Fish and Wildlife Conservation Act (FWCA) (Government of Ontario 2019)	• The *Fish and Wildlife Conservation Act* (FWCA) provides protection for certain bird species, not protected under the MBCA (e.g., raptors), as well as furbearing mammals and their dens or habitual dwellings, aside from the Red Fox (*Vulpes vulpes*) and Striped Skunk (*Mephitis mephitis*).	• The timing of construction activities, especially vegetation clearing and site grading must have consideration for bird nesting (including nesting season for Raptors, Hawks and Owls) and den sites for furbearing mammals. • Wildlife sweeps by a qualified biologist are recommended in advance of any vegetation clearing and site grubbing during the bird active season to ensure that no active nests/dens are present.
County of Wellington Official Plan (The Corporation of Wellington, 2024)	• The County of Wellington's new Official Plan (2024), outlines current policies for the protection of natural features within the County of Wellington which represent a constraint for development.	• The Township of Puslinch Greenbelt mapping (Schedule A7) shows the property designated as "secondary agriculture". • County mapping (Schedule B7) also shows the property within the "Paris Galt Moraine Policy Area". • All woodlands, wetlands, and habitat for threatened or endangered species are part of the Greenlands System (Schedule A).

Policy/Legislation/Planning Study	Description	Project Relevance
		According to the County OP, the Greenlands System will be maintained or enhanced. • The northeast edge of the property is mapped as forming part of the “Core Greenlands System”. The boundary of this feature requires review and verification. • All wetlands and habitat for threatened or endangered species are designated as Core Greenlands. Wetlands will be protected and development must not impair future ecological functions. Development and site alteration will not be allowed in significant habitat or endangered or threatened species.
County of Wellington Forest Conservation Bylaw 5115-09 (2009)	• The County of Wellington Forest Conservation Bylaw regulates harm or destruction of individual trees and woodlands within the County of Wellington. • Defines “woodlands” (Section 1. ai, i-iv).	• The significant woodland is protected by the Forest Conservation Bylaw (5115-09). • The EIS shall demonstrate that no long-term impacts to the adjacent woodland will occur.
Puslinch Zoning By-Law (2021)	• The Puslinch Zoning By-Law prohibits the use of land and building development except or certain purposes, to regulate the size and development impacts of buildings. This by-law protects significant woodlands within the Township	• Section 13.2 of the by-law states that development will not be allowed in significant woodlands unless it has been demonstrated to the satisfaction of the Township that there will be no negative impact on the woodland or its ecological functions • The significant woodland is considered Natural Environment Zone.

Policy/Legislation/Planning Study	Description	Project Relevance
Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits	• This Minister's regulation replaced Ontario Regulation 150/06 (and all other individual conservation authority regulations) as of April 1, 2024. • The regulation prohibits certain development activities directly in the legislation. The GRCA will be required to develop policy and procedure documents with respect to permits.	• GRCA noted in a letter September 15 2022 that the study area surrounding the subject property includes an unevaluated wetland and its regulated allowance, as well as the regulated allowance to a separate off-site wetland. These features and their associated allowances are regulated by GRCA. • Development within regulated areas or adjacent lands (30 m) may require a permit.
Mill Creek Subwatershed Study (CH2M Gore and Storrie Ltd. et al 1996)	• Investigates and provides recommendations on wetland setbacks and stormwater management details within the Mill Creek Subwatershed	• The subject property is adjacent to the Mill Creek Subwatershed

4.0 Field Methods

Field surveys were undertaken within the subject property to characterize natural features and identify any significant and sensitive natural heritage features and species that have potential to be adversely affected by the proposed development. Field visits were completed between May and June, 2024 and are described in detail below and summarized in Table 2. Surveys were undertaken in accordance with provincial and local guidance documents as indicated below.

Table 2. Field Survey Summary.

Survey	Protocol	Dates (2024)
Preliminary Site Visit - Ecological Land Classification, Spring Vegetation Inventory, review of Core Greenlands mapping	Ecological Land Classification for Southern Ontario (Lee et al. 1998) & Systematic search by ELC polygon	May 14
Breeding Bird Surveys	Ontario Breeding Bird Atlas (Birds Canada 2021a and 2021b)	June 10
		June 24
Ecological Land Classification & Summer Vegetation Inventory	Ecological Land Classification for Southern Ontario (Lee et al. 1998) & Systematic search by ELC polygon	June 10

4.1.1 Ecological Land Classification

Vegetation communities up to 120m from the edge of the proposed development were mapped and classified following the Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998). There was no access to the communities beyond property boundaries, therefore surveys were completed using a combination of aerial imagery (wetlands) and surveys from the edge of the property line (woodlands). The boundary of the woodland forming the edge of the Core Greenlands System (Wellington County OP, Schedule B7, 2024) was revised based on the ELC mapping. Details of the vegetation communities were recorded including species composition, dominance, uncommon species or features, surficial soil types, and evidence of human impacts.

4.1.2 Vegetation Inventories

A one-season summer inventory of all vegetation communities within the subject property was completed on June 10, 2024. All species of vascular flora identifiable at the time of the field

survey were documented and recorded by ELC polygon. Any rare species and their location(s) were to be recorded with a handheld GPS unit.

4.1.3 Wetland Boundary Delineation

A GRCA mapped wetland is shown within the woodland to the north and north-west of the subject property. This wetland is part of the Mill Creek Puslinch Wetland Complex and is regulated by the GRCA; wetland mapping of the area is available through the GRCA watershed mapping (GRCA, 2024). Access to the adjacent properties north of the subject property, which contained the wetland feature in question, was not granted during the field surveys, so an in-depth assessment of the wetland was not achieved.

4.1.4 Breeding Bird Surveys

NRSI biologists conducted two early morning breeding bird surveys within the subject property boundaries. Two rounds of surveys were conducted at least a week apart during the peak breeding season (May 25 to July 10), and included one 10-minute point count station and an area search of the property. Breeding evidence was be recorded in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Birds Canada 2021a and 2021b). Any observations of significant species were recorded in detail, including their specific observation location(s), observed behavior, and the highest level of breeding evidence.

4.1.5 Additional Wildlife

All observations of birds, herpetofauna, mammals and insects were documented on all field visits. This included direct observations of individuals, as well as signs of wildlife presence (i.e., tracks, scats, dens, nests etc.).

5.0 Existing Conditions

5.1 Soils, Terrain and Drainage

The subject property occurs within the southern reaches of the Horseshoe Moraines Region ((Chapman and Putnam 1984, A&A Consultants 2024a), and the flatter low-lying outwash valley orientated from southwest to northeast through the Puslinch area. The surficial geology typically consists of hard stony sand silt till, but can vary into a sandy till in many areas (Karrow 1987).

The subject property is underlain with loose compacted fill ranging of gravel and sand to gravelly silty sand at 1.5-2.0 m depths, with glacial till deposits underneath at 1.5-2.5 m depths.

The subject property is located within the Mill Creek-Grand River watershed, which consists of Mill Creek, Grand River, and its associated tributaries. Mill Creek and its associated wetlands are located to the northeast and northwest of the subject property. The subject property ranges in elevation from approximately 330 mASL in the southeast corner to 320 mASL in the northwest corner, with a generally flat grading with slight sloping towards the southwest corner of the subject property. Groundwater from the subject property flows towards a tributary of Mill Creek southwest from the subject property before draining into the Grand River; groundwater flow may also be influenced by surrounding utility trenches and/or other substrate surfaces in the vicinity (A&A Consultants, 2024b).

The water table for the subject property was assessed using an existing groundwater monitoring well at the southwest property corner, and supported by three additional monitoring wells in the remaining property corners (A&A Consultants, 2024b). The existing monitoring well showed the lowest water elevation compared to the other wells utilized, with MW24-1 at the southern edge of the subject property observed dry at all of seven monitoring events. Results from this monitoring concluded that seasonally high groundwater elevation was present at the subject property at elevations 255.536 – 315.323 mASL (A&A Consultants, 2024b).

5.2 Vegetation

5.2.1 Vegetation Communities

The subject property has been graded and is comprised of an area of gravel fill surrounded by soil berms vegetated with weedy early-succession plant species. No natural features exist on the subject property. Small areas of cultural meadow lie immediately to the northwest and northeast of the subject property. Beyond these cultural meadows, a woodland natural feature containing the Mill Creek Puslinch Wetland Complex lies about 30 m from the northwest and 60m from the northeast property boundaries. A summary of the ELC communities identified within and adjacent to the subject property is provided in Table 3 and shown on Map 2.

Table 3. Ecological Land Classification Community Descriptions.

ELC Code	Community Type	Community Description
CUM1-1	Mineral Cultural Meadow Ecosite	The cultural meadow ecosite is the only community present on the subject property. The site is mostly disturbed with new pioneer field species emerging. Common field species such as Creeping Thistle (*Cirsium arvense*), White Clover (*Trifolium repens*), Garden Bird's-foot Trefoil (*Lotus corniculatus*), and Oxeye Daisy (*Leucanthemum vulgare*) occur in abundance throughout the cultural meadow. Lesser amounts of woody species are present with Meadow Willow (*Salix petiolaris*) and Staghorn Sumac (*Rhus typhina*) noted as rare.
FOM (Study Area)	Mixed Forest Ecosite	The mixed forest ecosite is approximately 30m to the northwest and 60m to the northeast of the property boundary. This ecosite was characterized from within the subject property at a distance and therefore lacks detailed inventory of the understory and groundcover layers. The canopy is dominated by Silver Maple (*Acer saccharinum*), Eastern White Cedar (*Thuja occidentalis*), and Eastern White Pine (*Pinus strobus*) with Black Pine (*Pinus nigra*) being rare. The sub-canopy consists of American Basswood (*Tilia americana*) and Trembling Aspen (*Populus tremuloides*). Species visible in the understory were Manitoba Maple (*Acer negundo*), Trembling Aspen, Common Buckthorn (*Rhamnus cathartica*), Gray Dogwood (*Cornus racemosa*), Riverbank Grape (*Vitis riparia*), and Thicket Creeper (*Parthenocissus vitacea*).

5.2.2 Vascular Flora

A total of 61 plant species were observed by NRSI biologists within the subject property during vegetation inventories. A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix II.

Based on available background information, two SAR plants, Black Ash (*Fraxinus nigra*) and Smooth Yellow False Foxglove (*Aureolaria flava*) have been reported from the vicinity of the study area (MNRF 2022, iNaturalist 2024). NRSI did not observe any provincially, federally or regionally significant species within the subject property during the 2024 field visits.

5.3 Wildlife

5.3.1 Birds

A total of 130 bird species are reported from the study area or vicinity based on the OBBA and NHIC data bases (BSC et al. 2022; MNRF 2022). NRSI biologist observed 30 species during the 2024 breeding bird surveys and during other site visits. Of these species, 7 were "Observed" with no breeding evidence, 11 had "Possible" breeding evidence, 10 had "Probable" breeding evidence, and 2 had "Confirmed" breeding evidence. This includes species that were observed on the subject property and from the subject property in the surrounding habitat. A complete list of species observed by NRSI and reported from the vicinity of the study area is provided in Appendix III.

Based on available background information, 12 bird SCC and 5 bird SAR are reported from the vicinity of the study area (BSC et al. 2024; MNRF 2022) as summarized in the screening table in Appendix I. One SCC, Barn Swallow (*Hirundo rustica*), was documented by NRSI during breeding bird surveys.

Barn Swallows were observed during both rounds of breeding bird surveys foraging over the subject property with no associated breeding evidence. This species nests almost exclusively on human-made structures in Ontario, and will build their nests on any available building and on sheds, bridges, culverts, or any vertical sites with an overhang (OMNR 2000). No occupied nests or suitable structures were present on the subject property, though open construction buildings on adjacent properties have the potential to support nesting habitat; however, no nesting behaviors were observed during breeding bird surveys, with the individuals observed on site utilizing the adjacent open fields for foraging. Barn Swallows require open country for foraging and prefer areas near water (OMNR 2000, Brown and Brown 2020), and the

combination of wetland and large open areas in the vicinity of the subject property provides suitable foraging habitat for this species.

No significant species of birds are expected to use the subject property for breeding based on the lack of habitat on-site.

5.3.2 Amphibians and Reptiles

According to the Ontario Reptile and Amphibian Atlas, iNaturalist, and the NHIC database (Ontario Nature 2019, iNaturalist 2024, MNRF 2022), 27 species of herpetofauna, including 3 SCC and 2 SAR are known from within the 10x10km grid overlapping the subject property.

NRSI biologists incidentally observed 2 common herpetofauna species during field surveys in 2024; Northern Leopard Frog (*Lithobates pipiens*) and Gray Treefrog (*Dryophytes versicolor*). There are no natural features within the subject property that would provide suitable habitat for these species, though the surrounding wetlands and woodlands adjacent to the subject property are likely to contain suitable habitat.

All species of herpetofauna reported from background sources for the study area are listed in Appendix IV.

5.3.3 Mammals

A total of 46 mammal species are documented from the study area or vicinity based on the Mammal Atlas of Ontario and NHIC database (Dobbyn 1994; MNRF 2022). Two common mammal species were observed during field investigations in 2024, Eastern Cottontail (*Sylvilagus floridanus*) and White-tailed Deer (*Odocoileus virginianus*). A complete list of all species observed and reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, 1 mammal SCC and 5 mammal SAR are reported from the vicinity of the study area (Dobbyn 1994; MNRF 2022). The woodlands in the surrounding study area have potential to provide habitat for SAR bats including Little Brown Myotis (*Myotis lucifungus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*). Eastern Small-footed Myotis (*Myotis leibii*) may use buildings or other structures in the study area for roosting if entry is possible. There is no suitable bat habitat on the subject property itself due to the lack of structure that would support roosting (large cavity trees, buildings, etc.).

5.3.4 Butterflies

A total of 55 butterfly species are reported from the study area or vicinity based on the Ontario Butterfly Atlas, iNaturalist, and the NHIC database (MacNaughton et al. 2023, iNaturalist 2024, MNRF 2022). NRSI biologists did not conduct any dedicated surveys during the butterfly active season and no butterfly species were observed incidentally during site visits in 2024. A complete list of all species reported from the vicinity of the study area is provided in Appendix VI.

Based on available background information, 3 SCC have been reported from the vicinity of the study area, Monarch (*Danaus plexippus*), Black Dash (*Euphyes conspicua*) and West Virginia White (*Pieris virginiensis*). Although the subject property does contain meadow vegetation, it is not considered preferred habitat for butterflies due to its small size and overall poor quality. No regionally, provincially or federally significant species were observed within the subject property during field surveys and none are expected to be present.

5.3.5 Odonates

A total of 72 odonate species are reported from the study area or vicinity based on the Ontario Odonata Atlas and NHIC database (OOAD 2023, MNRF 2022). NRSI biologists did not conduct any dedicated surveys for insects and no odonate species were observed incidentally during site visits in 2024. A complete list of all species reported from the vicinity of the study area is provided in Appendix VI.

Based on available background information, 4 SCC odonate species are reported from the vicinity of the study area. The subject property itself in not expected to provide suitable habitat for odonates, though the surrounding wetlands off site may provide habitat. No regionally, provincially or federally significant species were observed within the subject property during field surveys and none are expected to be present.

6.0 Significance and Sensitivity

The subject property is adjacent to the eastern headwaters of the Mill Creek Subwatershed, within the Mill Creek-Grand River watershed. Mill Creek is a significant watercourse with important coldwater aquatic habitats which support sensitive coldwater fish species including Brook Trout. The coldwater thermal regime is created due to the progressive and significant inputs of cold groundwater, discharging to the creek throughout the upper and middle parts of the subwatershed. In order to preserve and maintain this significant habitat, upland recharge and lowland discharge must continue (CH2M Gore and Storrie 1996). The Mill Creek Subwatershed Study provides guidance on maintaining the balance of water to Mill Creek such as impervious cover limits, infiltration practices and erosion and sediment control.

The subject property has been altered through the grading and filling of the majority of the property. The results of the field surveys and background review conducted show that the subject property is composed primarily of cultural meadow and disturbed areas, which are of low quality and not significant. There are no natural features within the subject property boundary itself, although a small section of significant woodland and wetland is present at the northeast and northwest boundary of the study area. These features extend off-site to the north, and are not anticipated to be affected by development of the subject property. These features have been re-delineated based on the results of vegetation community surveys and review of historical aerial imagery within the subject property and study area, which do not show the features mapped in the Core Greenlands System (Map 1). New delineations and associated setback buffers have been recommended based on these results of these surveys, and are shown on Map 2.

The topography of the subject property is generally flat with a gentle sloping towards the southwest corner of the property, away from the wetland complex to the north (A&A Consultants, 2024b). Groundwater is expected to flow in a southwest direction, and indicates that the nearby wetland complex is not influenced by groundwater flow from the subject property. Surface runoff wastewater flows from the subject property northwest, towards the wetland complex, but has been accounted for with the stormwater management design features and is not anticipated to influence the hydrology of the wetland complex.

Groundwater recharge at the property was estimated using average annual precipitation and evapotranspiration levels, and resulted in an estimated groundwater recharge and surface runoff volume of 363 mm/year (A&A Consultants, 2024b). Groundwater infiltration levels may

vary within the subject property post-development, but is generally expected to be in deficit when compared to pre-development levels, due to a substantial increase in the amount of impervious and hard surfaces covering the property. These influences are to be factored into the stormwater management plan to maintain and enhance the groundwater discharge function of the subject property and surrounding area (MTE 2024).

The woodland adjacent to the subject property is considered possible SWH for Eastern Wood-Pewee, bat maternity roosts, woodland raptor nesting and deer yarding areas. The wetlands adjacent to the woodlands have potential to provide SWH turtle wintering and snake hibernacula habitat. However, these woodland and wetland complexes are outside of the limits of development, and are not anticipated to be affected by the proposed development of the subject property. Additional wildlife impact mitigation measures are discussed and recommended below in the impact section of this report.

7.0 Impact Analysis and Enhancement Recommendations

7.1 Proposed Development

The proposed development consists of a two-story 1899 m^2 logistics facility with a first-floor warehouse space and second floor offices. The proposed facility includes 49 car parking spaces,16 mini-truck parking spaces, 147 trailer parking spaces, 4 bicycle parking spaces, access roads, and a sewer system and stormwater management pond. The parking areas will be asphalt paved. A Conceptual Site Plan has been prepared by Kalap Architect Inc (2024) and is superimposed onto the natural feature mapping and shown on Map 2.

A Stormwater Management Report has been prepared by MTE (2024) to show how the proposed development will be serviced including wastewater treatment and stormwater management. Runoff wastewater will be managed by an on-site treatment system which will discharge treated effluent to the subsurface in accordance with the requirements of the Ontario Building Code. The stormwater management approach will provide parking lot storage in the eastern property corner, and an oil-grit separator to satisfy the criteria for water quantity and quality control. Wastewater will subsequently be directed into an infiltration pond located in the east corner of the subject property, which is equipped with a weir to allow overflow into the McLean's Road roadside ditch.

7.2 Approach to Impact Analysis

This impact analysis has been prepared by comparing the details of the proposed development plan to the natural heritage features within and adjacent to the subject property. NRSI has reviewed the reports and plans provided by other team members including a Conceptual Site Plan as well as geotechnical and hydrogeological reports to prepare this section.

The following is a description of the types of impacts discussed in the sections below:

- **Direct impacts** to the natural features on the subject property associated with disruption or displacement caused by the actual proposed footprint of the undertaking.
- **Indirect impacts** associated with changes in site conditions such as drainage and water quantity/quality.
- **Induced impacts** associated with impacts after the development is constructed such as subsequent demand on the resources created by increased use of the area and vicinity.

7.3 Direct Impacts and Recommended Mitigation

7.3.1 Tree and Vegetation Removal

The development of the subject property has avoided any direct impacts to the significant woodland and the wetlands adjacent to the subject property. These features are to be retained and buffered against potential damage resulting from construction activities, through the use of tree protective fencing around individual trees near the development as needed, and sediment barriers installed at the limit of development to reduce sediment erosion resulting from vegetation removal. A 10m buffer area for the delineated woodland dripline adjacent to the subject property is recommended to ensure no constructed-related damages to trees occurs.

The conceptual development plan has the proposed facility positioned within disturbed graded areas and surrounding cultural meadow, which consists of sparse weedy vegetation dominated by non-native species. The development will require the removal of the cultural meadow vegetation and individual trees across the subject property. Hedgerow trees along the east and south boundaries of the subject property will be protected by avoiding and minimizing grading and asphalt within the dripline and providing a 1m buffer where possible.

Mitigation

Construction limit fencing and sediment barrier be located and installed as needed at the limit of development to protect the on- and off-site significant woodland, trees and wetlands. Trees should be protected using standard tree protection fencing in which no site alteration or disturbance may occur.

7.3.2 Birds and Their Nests

The removal of trees and meadow vegetation has the potential to harm and disrupt nesting birds. The *Migratory Birds Convention Act* (MBCA, Government of Canada 2017) identifies a list of migratory bird species that are protected. It prohibits the destruction of nests, individuals and activities that would cause an adult bird to abandon a nest. Tree and vegetation removal is required to occur outside of the core nesting period for migratory birds as established by the Canadian Wildlife Service (CWS), which extends from approximately April 1 – August 31 (Government of Canada 2018). Every developer, consultant, contractor, etc. is legally obliged to carry out due diligence to protect migratory birds from harm during all construction projects.

Mitigation

Should vegetation/tree removal be required to occur within the core nesting period, a nest search may be conducted by qualified biologists within simple habitat just prior to the removal activity (less than 48 hours prior). Simple habitat means individual trees or small areas of vegetation where the visibility and probability of detecting nests is good. Should any active nest be identified, or signs of an active nest be observed, there shall be no removal or construction activity until sign-off is obtained from the qualified biologist that the nest is no longer active. Vegetated areas and tree(s) identified as having no nesting activity can be removed; however, removal is to occur within 48 hours of the nest search. If removal does not occur within this time frame, additional nest searches are to be conducted.

If a nest search is conducted, a clearance letter is to be prepared by the qualified biologist that undertook the surveys. The letter would be submitted to the client for their files in the event a record of due diligence is requested by the CWS.

7.3.3 SAR Bats

The removal of trees has the potential to harm SAR bats. The primary way to avoid impacts to bats is to retain trees which have suitable habitat for bats such as cavities and loose bark. It is also important to avoid removing any trees during the time when bats are most apt to be using them. Tree and vegetation removal is to occur outside of the core active bat season (April 1 to September 30). Every developer, consultant, contractor, etc. is legally obliged to carry out due diligence to protect migratory birds from harm during all construction projects.

No trees with suitable cavities for candidate bat roosting habitat were observed on-site during the field surveys of the subject property.

Mitigation

Any removal of trees is to be completed outside of the bat active season generally extending from April 1- October 1, with the understanding that SAR are protected during all seasons. Any removals within the bat active season will be in compliance with the Endangered Species Act and in consultation with MECP.

7.4 Indirect Impacts

The following section outlines potential sources of indirect impacts associated with the proposed development.

- Alterations to Drainage and Flow Patterns, Water Quality, Groundwater;
- Wildlife Disturbance; and,
- Erosion and Sedimentation.

7.4.1 Alterations to Drainage and Flow Patterns, Water Quality, Groundwater

A Stormwater Management Report has been prepared by MTE (2024) that provides details on the proposed approach to managing and treating stormwater runoff following development. Due to the past alteration of the subject property surface, along with the existing land cover, concerns over flooding downstream warranted a conservative approach to managing recharge, with the site assumed to be fully pervious and a higher recharge target set (MTE 2024)

The proposed stormwater management plan will control water quantity by providing storage in the parking lots and an on-site infiltration pond. The parking lots will drain to a storm sewer system at the east corner of the subject property, which controls the outflow by an appropriately sized orifice, prior to being outlet to an oil/grit separator for quality control. The OGS will provide Level 1 (enhanced) water quality control (MTE 2024). Treated water will be released to an on-site infiltration pond, with capacity for 229m^3 storage, and is equipped with a weir to allow overflow into the McLean's Road roadside ditch.

The Hydrogeological Report prepared by A&A Consultants (2024b) indicates that the wetland feature adjacent to the subject property is upland of the proposed development, and is not expected to be impacted by the drainage outflow of the development.

Mitigation

Implement the stormwater management plan, including erosion sediment fencing mitigation measures, as designed and recommended by MTE.

7.4.2 Wildlife Disturbance

Increased disturbance caused by excessive noise, dust, vibrations, lighting, and proximity of human presence during construction may cause wildlife species on-site and within the adjacent natural features to abandon or avoid the area for travel, nesting or foraging. Additionally, truck noise and parking lot lighting during operation of the facility has potential to disrupt wildlife.

The wildlife species and individuals that are present in the study area are those which have adapted to the current noise, lighting and disturbance conditions which are present due to the existing adjacent trucking facility, heavy equipment business, McLean Road traffic and neighboring aggregate operations. This includes common species as well as the significant species which have been noted or have potential to be present within the on-site and adjacent woodland such as Eastern Wood-Pewee and SAR bats. Any potential significant wildlife habitat functions that are present are expected to be maintained by retaining the natural features in their entirety, maintaining the water balance that supports them, providing a buffer and maintaining connectivity within the adjacent woodlands.

Construction limit fencing is recommended to ensure that buffers are adhered to prior to and during construction. This fencing should be combined with sediment barrier fencing to also function as a measure to ensure that wildlife (especially turtles that may inhabit adjacent wetland features) are not able to enter the work area during construction, where they may be at risk of harm. Daily construction hours are recommended to be between 9:00am and 9:00pm during the spring and summer months (April to August), as a method of mitigating noise and human activity impacts to wildlife. Noise, dust, vibration and lighting disturbance impacts due to construction are anticipated to be localized and temporary.

To avoid and minimize disturbance to wildlife during operation it is recommended that truck movements and noise be limited to the extent possible during the breeding season for birds and wildlife which includes April to August, including nighttime. The proposed hours of operation of the facility are 8:00am to 4:30pm, Monday to Friday, year-round. These hours are not expected to result in noise or other disturbance impacts to breeding birds and other wildlife. Parking lot lighting should be reduced in height, directed away and shielded from shining into natural features.

Mitigation

Combined construction limit fencing/sediment barrier should be installed prior to any works beginning to ensure that buffering of natural features is adhered to and to exclude wildlife from the work area. Construction noise be restricted during spring and summer (April to August) to between 9:00 am and 9:00 pm. Any lighting equipment associated with construction activities should be turned off at the end of daily construction activities. Impacts due to dust should be mitigated for by moistening areas of bare, dry soil with water as needed during construction activities to reduce the amount of dust produced. Permanent parking lot lighting should be

shielded and directed away from the adjacent natural features and the height should be reduced as much as possible so as to prevent 'lightwash' of these areas.

7.4.3 Erosion & Sedimentation

During rain or thaw events, erosion of exposed soils has the potential to occur during construction. Sediment laden surface water runoff has potential to flow into receiving catch basins and ditches, potentially impairing downstream water quality. The adjacent wetland feature is located upslope from the development and therefore are not at risk of sedimentation during construction; however, combined construction limit fencing/sediment barrier is recommended along the outer limit of the work area.

Mitigation

ESC measures should be installed along the limit of construction/grading to ensure that sediment laden runoff does not impact the on-site and adjacent natural features, or downstream receiving watercourses or water bodies. An erosion and sediment control plan should be prepared at the Site Plan stage and implemented prior to any construction or site works.

7.5 Induced Impacts

Induced impacts are described as those that are not directly related to the construction or operation of the facilities in question, but rather arise as a result of the use of the natural areas or immediately adjacent lands for the development. The simplest example is an increase in the use of natural areas adjacent to development by residents, feral domestic wildlife, and unauthorized trail/pathway construction and dumping of debris.

Induced impacts are anticipated to be negligible on this subject property. The proposed development has been placed within the disturbed and cultural areas of the property. Human activity is expected to be focused within the development and will not enter natural features.

Mitigation

Fencing of the active portion of the truck facility is recommended to deter human intrusion into the natural features. Debris from the operation of the facility should be contained within the site by a chain link fence as well as routine maintenance and garbage collection, and not allowed to blow into adjacent natural features.

7.6 Enhancements

The buffers and gaps between retained natural features are an opportunity to enhance the natural features and improve ecological connectivity. The lands and buffer areas along the north and west subject property boundaries, bordering the woodland and wetland features in adjacent properties, are good locations for potential plantings and enhancement activities. Plantings and naturalization are further recommended to enhance the ecological connectivity between the woodland and the wetlands for wildlife habitat functions such as for an amphibian movement corridor.

Enhancements may include the planting of native larger caliper trees or smaller tree 'whips', shrub plantings and native herbaceous seed mixes, all of which will serve to expand the size of the existing natural features. The selection of species for edge plantings should reflect the native species composition of adjacent natural areas and species that are common and hardy in the local planting zone. Natural regeneration that is currently present should be considered and retained within the planting plans. Removal of common buckthorn from these areas and the edges of the woodland and wetlands should be considered. Any stumps and root systems of removed native trees can be left in place for habitat and soil stabilization.

8.0 Summary

The proposed undertaking is to construct a warehouse, logistics facility with parking lots, and stormwater management and septic system on the subject property. The property has been previously altered by grading and filling, and contains no on-site and limited adjacent natural features. The natural features adjacent to the subject property are well defined and have been incorporated into the Site Plan along with appropriate buffers and recommended mitigation measures. These measures are considered sufficient to protect the common and significant plant and wildlife species, wildlife habitat functions and provide opportunities for ecological enhancement.

Below is a summary of mitigation measures provided is this report:

- Install combined construction limit fencing/sediment barrier along the outer edge of construction/grading/buffer limit prior to any clearing or construction activity;
- Install tree protection fencing around individual trees as needed to prevent indirect damage from construction activities;
- All vegetation/tree clearing should be conducted outside of the core bird nesting season (April 1 to August 31);
- Nest searches should be conducted by a qualified biologist where vegetation/tree clearing cannot be maintained outside of the core bird nesting season;
- All tree clearing should be conducted outside of the active bat season (April 1 to September 30). Any removals of suitable bat habitat trees during the active season are to be conducted in consultation with MECP and in compliance with the ESA;
- Implement Stormwater Management Plan and recommendations provided by MTE;
- Mitigate spring and summer construction noise impacts by restricting activities to between 9:00 am and 9:00 pm during April to August;
- Turn off construction lighting at the end of each day;
- Implement measures to mitigate dust;
- Permanent lighting of the parking lots to be reduced in height, directed away and shielded from shining into the woodland and wetlands;
- Prepare and implement an Erosion and Sediment Control plan.

Providing the protection and mitigation measures recommended within this report, as well as the stormwater management plan and recommendations by other team members are adhered to,

no significant negative environmental impacts are anticipated to the natural features on-site and adjacent as a result of the proposed development.

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Appendix I
Terms of Reference, SAR and SWH Screening Tables

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

September 23, 2024 Project No. 3370

Planning & Development Department
Township of Puslinch
7404 Wellington Road 34
Puslinch, Ontario N0B 2J0

RE: Proposed Terms of Reference for Scoped EIS, 7504 McLean Road East, Puslinch

On behalf of Natural Resource Solutions Inc. (NRSI), I am pleased to provide the following Terms of Reference (TOR) to undertake a Scoped Environmental Impact Study (EIS) to support the proposed construction a logistics facility on the above noted property in Puslinch, ON (henceforth the "subject property"). The subject property has been graded and is comprised of an area of gravel fill surrounded by soil berms vegetated with weedy early-succession plant species. No natural features exist on the subject property, but there are areas of meadow immediately to the north and east of the subject property.

The majority of the subject property is currently zoned as Secondary Agricultural lands, and the northeast edge of the property is mapped as forming part of the Core Greenlands System (Wellington County OP, Schedule B7, 2024). The northern part of the subject property also falls within the regulation limit of the Grand River Conservation Authority (GRCA); this regulated area is part of the buffer of the engineered floodplain as mapped by GRCA.

Due to the presence of GRCA-regulated features on and adjacent to the subject property, a scoped EIS is required to demonstrate that the proposed development will not negatively impact adjacent natural features or their ecological functions.

The following TOR has been prepared to outline NRSI's proposed work plan to complete the scoped EIS. This work plan has been prepared in accordance with the requirements outlined in the GRCA's EIS Guidelines (GRCA 2005).

Sincerely,

[redacted]

Jacqueline Weber, M Sc
Terrestrial & Wetland Biologist
Natural Resource Solutions Inc.

Scoped Environmental Impact Study – 7504 McLean Road E, Puslinch
Terms of Reference (Draft)

Introduction

The subject property is 2.7 ha in size and is bounded by McLean Road to the southeast and industrial facilities to the south and southwest. Small areas of cultural meadow lie immediately to the northwest and northeast of the subject property. Beyond these cultural meadows, a treed natural feature containing portions of the Mill Creek Puslinch Wetland Complex, a Provincially-significant wetland, lies about 30 m from the northwest and northeast property boundaries.

The subject property has been graded and is comprised of an area of gravel fill surrounded by soil berms vegetated with weedy early-succession plant species. No natural features exist on the subject property. Small areas of cultural meadow lie immediately to the northwest and northeast of the subject property.

For the purposes of this EIS, the study area is defined as the subject property and the adjacent lands within 120 m.

Collection and Review of Background Information

Background information pertaining to the biological resources on and within up to 10km of the subject property was collected and compiled. This includes a review of the following sources:

- Natural Heritage Information Centre (NHIC) significant species database;
- Grand River Conservation Authority Regulations Mapping;
- Ontario Breeding Bird Atlas (BSC et al. 2008);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2021);
- Atlas of the Mammals of Ontario (Dobbyn 1994);
- Ontario Butterfly Atlas (McNaughton et al. 2024);
- Ontario Odonate Atlas Database (OOAD 2024);
- eBird and iNaturalist online records for the vicinity of the subject lands.

In addition to these biological resources, a comprehensive review of all relevant federal, provincial, regional and local natural heritage legislation and policies was conducted, to ensure that the proposed development complies with all relevant policies. This includes a review of the following sources;

- Provincial Policy Statement (OMMAH 2020b);
- A Place to Grow: Growth Plan for the Greater Golden Horseshoe (OMMAH 2020a);
- Wellington County Official Plan (2024);
- Township of Puslinch Comprehensive Zoning By-law No. 023-18 (2018)
- Conservation Authority Act and O. Reg 41/24 (2024);
- Endangered Species Act (Government of Ontario, 2007);
- Fish and Wildlife Conservation Act (Government of Ontario 2019);
- Migratory Bird Convention Act (MCBA) (Government of Ontario, 1994);
- Species at Risk Act (2002).

Based on the review of background information and natural heritage legislation and policy, a Species at Risk (SAR) and Species of Conservation Concern (SCC) screening exercise was completed to identify any significant species that are known to occur within the study area. A Significant Wildlife Habitat (SWH) screening exercise has also been completed based on available background information to identify which SWH types are present in the study area. The screening exercise used criteria from both the SWH Technical Guide (OMNR 2000) and SWH Criteria Schedules for Ecoregion 6E (OMNRF 2015). The SAR/SCC and SWH assessment tables, informed by our surveys to date, are appended to this Terms of Reference.

The screenings identified the following SAR/SCC as having potential to be present in lands adjacent to the subject property. No natural features exist on the subject property, and following review no SAR/SCC habitat has the potential to occur on this parcel.

- Midland Painted Turtle (*Chrysemys picta marginata*)
- Snapping Turtle (*Chelydra serpentina*)
- Eastern Milksnake (*Lampropeltis triangulum*)
- Smooth Yellow False Foxglove (*Aureolaria flava*)
- Eastern Meadowlark (*Sturnella magna*)
- Bobolink (*Dolichonyx oryzivorus*)

The screenings did not identify any type of Significant Wildlife Habitat (SWH) as having potential to be present on site and to be impacted by the proposed development.

Field Studies

The following is a summary of the field survey methodology that will be used to characterize the existing natural features on the subject property.

Breeding Bird Surveys (June - July 2024)
NRSI biologists will conduct two early morning breeding bird surveys within the subject property. 10-minute point counts will be conducted on two days, at least a week apart, between May 25 and July 10; the first Breeding Bird Survey has already been completed in early June 2024. Breeding evidence will be recorded in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Birds Canada 2021a and 2021b). Any observations of significant species will be recorded in detail, including their specific observation location(s), observed behaviour, and the highest level of breeding evidence.

Ecological Land Classification (June 2024)
Vegetation communities up to 120 metres from the edge of the proposed development will be mapped and classified following the Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998). Access beyond property boundaries is not anticipated, and these surveys are expected to be completed using aerial imagery and surveys at the property boundaries. Details of the vegetation communities will be recorded including species composition, dominance, uncommon species or features, surficial soil types, and evidence of human impacts.

Vegetation Inventory (June 2024)
A 1-season vegetation inventory will be completed in summer, and the subject property will be systematically searched for plant species. Any rare species and their location(s)

will be recorded with a handheld GPS unit. Vascular flora species will be recorded by ELC polygon.

Additional Observations (all surveys)

Incidental observations of mammals, herpetofauna, butterflies and odonates (dragonflies/damselflies) observed on-site during site visits will be recorded.

Reporting

Opportunities and Constraints Analysis

The results of the site investigation will be combined with the background information to provide a detailed summary of the existing natural features and ecological functions that occur within the study area. This will include detailed vegetation community descriptions and mapping, and summaries of wildlife species present within the study area. The ecological significance of the on-site natural features will be determined according to municipal and provincial criteria, as well as professional expertise. Constraints mapping will be completed to indicate development opportunities and required development setbacks or buffers from natural features on the subject lands.

Impact Analysis, Mitigations, and Other Recommendations

An impact analysis will be completed based on details of the proposed development. This will include review of the proposed site plan, and any other development plan details from other disciplines as may be applicable, such as a hydrogeological assessment. Any areas of conflict between significant features or ecological functions and the development will be discussed with the client and options for avoiding or minimizing impacts will be recommended. Potential impacts will be described in detail, with corresponding recommended mitigation measures where impacts cannot be avoided.

The impact of the development on the existing natural features and ecological functions will be determined based on the following:

- Direct impacts (i.e., natural feature or habitat removal) associated with the actual 'footprint' of the proposed development area. The approach to identifying and delineating constraint areas, discussed above, will be used to avoid direct impacts from the development on any significant natural features.
- Indirect impacts associated with changes in site conditions such as drainage and water quantity/quality or temporary construction-related impacts.
- Induced impacts associated with post-construction human use of the property.

Enhancement and Monitoring

Recommendations for ecological enhancement or restoration will be made where opportunities exist. Details will be based on the results of the site characterization and may include specific areas of restoration or enhancement, native species buffer plantings, invasive species management, etc. Where appropriate, monitoring recommendations may be provided to ensure that mitigation measures are functioning appropriately during and/or following construction.

Scoped EIS Report

The findings of the natural feature characterization, constraints analysis and the impact analysis with associated mitigation, enhancement, and monitoring recommendations (if applicable) will be summarized in the scoped EIS report. The report will include the

approved TOR, records of agency correspondence, the findings of the EIS, and a description of the proposed undertaking, including a review of the relevant guidelines and policies governing the development. Species lists will be appended and natural features will be shown on a series of maps including existing conditions, development opportunities and constraints, and the development concept.

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Common Name	Scientific Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	NRSI Observed	Habitat Source	Habitat Preference	Suitable Habitats within Study Area	Carried Forward to EIS?	Rationale
Vascular Plants												
Black Ash	*Fraxinus nigra*	S4	END	T	NS	No schedule	No	Species at Risk in Ontario (MECP 2024)	Grows in moist to wet sites such as swamps, bogs and riparian areas.	No	No	No SAR or SCC habitat present on subject lands. No access beyond property boundaries.
Smooth Yellow False Foxglove	*Aureolaria flava*	S2?	THR	T	T	Schedule 1	No		Dry, open upland forests with well drained soils; typically associated with White Oak.	No	No	No SAR or SCC habitat present on subject lands.
Birds												
Redhead	*Aythya americana*	S2B,S4N					No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Live in shallow cattail/bulrush marshes, lakes and ponds and fens; preferred nesting usually close to shallow water (most within 2 m), but can be found as far as 266 m from water's edge.	No	No	No SAR or SCC habitat present on subject lands.
Ruddy Duck	*Oxyura jamaicensis*	S3B,S4N,S5M					No	Cornell Lab of Ornithology (2019)	Breeds mostly in the prairie pothole region of North America and winters in wetlands throughout the U.S. and Mexico. In the fall through spring, they inhabit open water, both inland and in protected coastal areas such as harbors and small bays.	No	No	No SAR or SCC habitat present on subject lands.
Blue-winged Teal	*Spatula discors*	S3B,S4M					No	Cornell Lab of Ornithology (2019)	Inhabits shallow ponds and wetlands across much of North America. Prefers grasslands bordering small potholes and other freshwater wetlands.	No	No	No SAR or SCC habitat present on subject lands.
Chimney Swift	*Chaetura pelagica*	S3B	THR	T	T	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Commonly found in urban areas near buildings; nests in chimneys, hollow trees, and crevices of rock cliffs. Feeds over open water.	No	No	No SAR or SCC habitat present on subject lands.
American Coot	*Fulica americana*	S3B,S4N	NAR	NAR	NS	No schedule	No	Cornell Lab of Ornithology (2019)	Inhabits open water habitats such as lakes, ponds and wetlands.	No	No	No SAR or SCC habitat present on subject lands.
Common Gallinule	*Gallinula galeata*	S3B					No	Cornell Lab of Ornithology. 2019. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. https://www.allaboutbirds.org	Freshwater and brackish marshes, ponds, and lakes that have a mix of submerged, floating, and emergent aquatic vegetation and are open water year-round. They also use artificial aquaculture ponds, rice fields, sewage lagoons, and urban stormwater retention ponds.	No	No	No SAR or SCC habitat present on subject lands.
Black Tern	*Chlidonias niger*	S3B,S4M	SC	NAR	NS	No schedule	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Large cattail marshes; marshy edges of rivers, lakes or ponds; wet open fens; wet meadows. Returns to same area to nest each year. Must have areas of shallow water (0.5 to 1m deep) and area of open water near nests. Generally found in marshes >20 ha in size.	No	No	No SAR or SCC habitat present on subject lands.
Least Bittern	*Ixobrychus exilis*	S4B	THR	T	T	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Strongly prefers cattail marshes with a mix of open pools and channels. Also found in swamps and bogs and marshy borders of lakes, ponds, streams and ditches with dense emergent vegetation of cattail, bulrush and sedge. Nests in cattails. Intolerant of loss of habitat and human disturbance.	No	No	No SAR or SCC habitat present on subject lands.
Black-crowned Night-Heron	*Nycticorax nycticorax*	S3B,S2N,S4M					No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Deciduous woodland swamps, cattail marshes, islands, wooded river and lake banks, coastal wetlands	Yes	No	No SAR or SCC habitat present on subject lands. No access beyond property boundaries.
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC	Schedule 1	No	Species at Risk in Ontario (MECP 2022)	Mid-canopy layer of forest clearings and edges of deciduous and mixed forest. Abundant in intermediate-age mature forest stands with little understory vegetation.	Yes	No	No SAR or SCC habitat present on subject lands.
Barn Swallow	*Hirundo rustica*	S4B	SC	SC	T	Schedule 1	Yes	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Farmlands, rural areas and other open or semi-open areas near body of water. Nests almost exclusively on human-made structures such as open barns, buildings, bridges and culverts.	No	No	No SAR or SCC habitat present on subject lands.
Purple Martin	*Progne subis*	S3B					No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Open, trees areas such as farmland, parks, yards, marshes; usually near large bodies of water; colonial; nests in tree cavities, cliff ledges; most common in nest boxes; requires open space for foraging; prefers trees >15 cm dbh.	No	No	No SAR or SCC habitat present on subject lands.
Bank Swallow	*Riparia riparia*	S4B	THR	T	T	Schedule 1	No	Recovery Strategy for the Bank Swallow in Ontario (Falconer et al. 2016)	Nests in burrows in natural and human-made settings with vertical faces in silt and sand deposits. Usually on banks of river and lakes, but also found in sand and gravel pits.	No	No	No SAR or SCC habitat present on subject lands.

Wood Thrush	*Hylocichla mustelina*	S4B	SC	T	T	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Carolinian and Great Lakes-St. Lawrence forest zones. Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth. Near pond or swamp. Must have some trees higher than 12 m.	No	No	No SAR or SCC habitat present on subject lands.
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	SC	SC	SC	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Well-drained grassland or prairie with low cover of grasses, taller weeds or sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities. Requires perches for singing and tracts of grassland generally >5ha.	No	No	No SAR or SCC habitat present on subject lands.
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	SC	T	Schedule 1	No	Recovery Strategy for the Bobolink and Eastern Meadowlark in Ontario (McCracken et al. 2013)	Large (>10 ha), open expansive grasslands, pastures, hayfields, meadows or fallow fields with dense ground cover. Occasionally nest in large (>50 ha) fields of winter wheat and rye in southwestern Ontario.	Yes	Yes	Open meadows are present adjacent to the subject property, within the study area.
Eastern Meadowlark	*Sturnella magna*	S4B,S3N	THR	T	T	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Open pastures, hayfields, grasslands or grassy meadows with elevated singing perches (small trees, shrubs or fence posts). Also weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields or other open areas. Generally prefers larger tracts of habitat >10 ha, but will sometimes use smaller tracts.	Yes	Yes	Open meadows are present adjacent to the subject property, within the study area.
Reptiles and Amphibians												
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC	Schedule 1	No	Species at Risk in Ontario (MECP 2022)	Slow-flowing rivers and streams, lakes, and permanent or semi-permanent wetlands with soft substrates and vegetation. Key habitat requirements: open areas with structures for basking, open sand or gravel areas for nesting, shallow areas with soft substrates to bury in, soft banks or substrates for hibernation.	No	No	No SAR or SCC habitat present on subject lands.
Blanding's Turtle (Great Lakes / St. Lawrence population)	*Emydoidea blandingii*	S3	THR	E	E	Schedule 1	No	Recovery Strategy for the Blanding's Turtle (MECP 2019)	Eutrophic, shallow wetlands such as marshes, ponds, swamps, bogs, fens, or coastal wetlands, with soft, muddy substrates, abundant aquatic vegetation, and basking structures (logs, stumps, hummocks). Large overland movements occur between aquatic habitats and to open sandy or gravelly areas for nesting. Forest habitat is important for upland movements. Overwintering typically occurs in permanent wetlands.	No	No	No SAR or SCC habitat present on subject lands.
Jefferson Salamander	*Ambystoma jeffersonianum*	S2	END	E	E	Schedule 1	No	Recovery Strategy for the Jefferson Salamander (Linton, J, J. McCarter & H. Fotherby)	Large deciduous or mixed forest containing, or in close proximity to, suitable breeding ponds which include fishless vernal pools or wetlands with suitable hydroperiod for larval development (was present until Aug/Sept). Habitats must contain shelter features including leaf litter, woody debris, rocks, logs, or stumps. Hibernation sites are underground in mammal burrows, root systems, or crevices or fissures in rocks.	No	No	No SAR or SCC habitat present on subject lands.
Unisexual Ambystoma (Jefferson Salamander-dependent population)	*Ambystoma laterale - (2) jeffersonianum*	S2	END	E	E	Schedule 1	No	Species at Risk in Ontario (MECP 2022)	Unisexual Ambystoma salamanders live in leaf litter, under logs and in underground cavities in deciduous and mixed forests, typically within close proximity to breeding habitats. Adults breeds in vernal pools (temporary woodland ponds) or fish-free permanent wetlands. They lay their eggs in clumps attached to underwater vegetation in shallow water. The eggs hatch into aquatic larvae after about one month, and the larvae transform into juveniles by the end of summer. The juveniles leave the pond and head into the surrounding forest. Unisexual Ambystoma salamanders spend the winter underground where they can get below the frost line and avoid freezing temperatures, such as in mammal burrows, rock crevices or other underground cavities. Although these salamanders spend much of the year underground or under cover, they can often be observed in early spring when they travel to breeding sites.	No	No	No SAR or SCC habitat present on subject lands.
Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield population)	*Pseudacris triseriata pop. 2*	S4	NAR	T	T	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Roadside ditches or temporary ponds in fields; swamps or wet meadows; woodland or open country with cover and moisture; small ponds and temporary pools ponds and temporary pools.	No	No	No SAR or SCC habitat present on subject lands.
Mammals												

Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END				No	Recovery Strategy for Eastern Small-footed Myotis In Ontario (Humphrey 2017)	Primarily roosts in open, sunny, rocky habitats, including cracks and crevices in cliffs and boulders, in talus slopes, beneath stones on rock barrens and in rock outcrops containing crevices. Occasionally roosts in buildings (including barns, sheds, and exterior walls). Maternity roosts have been documented in rocky habitats, on bridge structures, and in or on buildings. Overwinters in caves and abandoned mines.	No	No	No SAR or SCC habitat present on subject lands.
Little Brown Myotis	*Myotis lucifugus*	S3	END	E	E	Schedule 1	No	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	Uses caves, quarries, tunnels, hollow trees or buildings for roosting. Winters in humid caves. Maternity sites in dark warm areas such as attics and barns. Feeds primarily in wetlands and forest edges.	No	No	No SAR or SCC habitat present on subject lands.
Northern Myotis	*Myotis septentrionalis*	S3	END	E	E	Schedule 1	No	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	Roosts in houses and man-made structures but prefers hollow trees or under loose bark. Hibernates in mines or caves. Hunts within forest, below the canopy.	No	No	No SAR or SCC habitat present on subject lands.
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	E	E	Schedule 1	No	Recovery Strategy for the Little Brown Myotis, Northern Myotis and Tri-colored Bat in Ontario (Humphrey, C. & H. Fortherby. 2019)	Roosts and maternity colonies in older forests and occasionally in barns or other structures. Forage over water and along streams in the forest. Hibernate in caves.	No	No	No SAR or SCC habitat present on subject lands.
Woodland Vole	*Microtus pinetorum*	S3?	SC	SC	SC	Schedule 1	No	Species at Risk in Ontario (MECP 2022)	Mature deciduous forest in the Carolinian region where there is a deep litter layer that allows it to burrow.	No	No	No SAR or SCC habitat present on subject lands.
American Badger (Southwestern Ontario population)	*Taxidea taxus jacksoni*	S1	END	E	E	Schedule 1	No	Significant Wildlife Habitat Technical Guide: Appendix G (OMNR 2000)	Open grasslands and oak savannahs; dens in new hole or enlarged existing hole; sometimes makes food caches.	No	No	No SAR or SCC habitat present on subject lands.
Butterflies												
Black Dash	*Euphyes conspicua*	S3					No	Lotts, K and T. Naberhaus. 2021. Butterflies and Moths of North America Online. Available: https://www.butterfliesandmoths.org/	Boggy marshes, wet meadows, and marshy stream banks with host plants Carex stricta.	No	No	No SAR or SCC habitat present on subject lands.
West Virginia White	*Pieris virginiensis*	S3	SC				No	Species at Risk in Ontario (MECP 2022)	Rich, moist, deciduous woods with populations of Two-leaved Toothwort (Cardamine diphylla; larval food plant).	No	No	No SAR or SCC habitat present on subject lands.
Monarch	*Danaus plexippus*	S2N,S4B	SC	E	E	Schedule 1	No	Species at Risk in Ontario (MECP 2022)	Adults found in a diversity of habitats with a variety of wildflowers. Caterpillars are confined to meadows and open areas where milkweeds grow (larval food plants).	No	No	No SAR or SCC habitat present on subject lands.
Odonates												
Unicorn Clubtail	*Arigomphus villosipes*	S3					No	Tracked Species in Ontario (MNRF 2024)	Ponds in highly localized area in Southern Ontario.	No	No	No SAR or SCC habitat present on subject lands.
Pronghorn Clubtail	*Phanogomphus graslinellus*	S3					No	Illinois Department of Natural Resourccs (2024)	Muddy, slow-moving streams and medium to large lakes.	No	No	No SAR or SCC habitat present on subject lands.
Arrowhead Spiketail	*Cordulegaster obliqua*	S3					No	Ottawa Field Naturalists Species Profile (2020)	Small streams outletting from ponds or lakes with abundant overhanging vegetation.	No	No	No SAR or SCC habitat present on subject lands.
Clamp-tipped Emerald	*Somatochlora tenebrosa*	S3					No	Maryland Biodiversity Project (2024)	Small, shaded forest streams.	No	No	No SAR or SCC habitat present on subject lands.

Significant Wildlife Habitat Assessment Tables

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Waterfowl Stopover and Staging Areas (Terrestrial)					Not Present	Not Present
Rationale: Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available[exlviii]. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities (CAs) • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependent on local site conditions and adjacent land use is the significant wildlife habitat[cxlviii]. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	*No suitable fields are present within the study area.*	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Waterfowl Stopover and Staging Areas (Aquatic)					Possible	Not Present
Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). Information Sources • Environment Canada • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of: • Aggregations of 100[í] or more of listed species for 7 days[í], results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH[cxlix] • The combined area of the ELC ecosites and a 100m radius area is the SWH[cxlviii] • Wetland area and shorelines associated with sites identified within the SWHTG[cxlviii] Appendix K[cxlix] are significant wildlife habitat. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWHMiST[cxlix] Index #7 provides development effects and mitigation measures.	Suitable swamp ecosites may be present within the PSW in the study area. No suitable habitats are present on site.	
Wildlife Habitat: Shorebird Migratory Stopover Area					Possible	Not Present
Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird’s Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin Whimbrel	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH. Information Sources • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area[cxlviii] • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWHMiST[cxlix] Index #8 provides development effects and mitigation measures.	A large open-water wetland within the study area may have suitable shoreline habitats. No suitable habitat exists within the subject property.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	**ELC Ecosite Codes**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Raptor Wintering Area					Possible	Not Present
<u>Rational:</u> Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl <u>Special Concern:</u> Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class: Forest: FOD, FOM, FOC Upland: CUM, CUT, CUS, CUW	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites need to be > 20 ha[cxlviii, cxlix] with a combination of forest and upland.[xvi, xvii, xviii, xix, xx, xxi]. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands[cxlix] Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting <u>Information Sources</u> • OMNRF Ecologist or Biologist • Field Natural Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Reports and other information available from Conservation Authorities CAs.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two listed hawk/owl species • To be significant a site must be used regularly (3 in 5 years)[cxlix] for a minimum of 20 days by the above number of birds • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWHMiST[cxlix] Index #10 and #11 provides development effects and mitigation measures.	The large wooded feature in the study area may contain suitable raptor wintering habitat. Suitable habitat is not present on the subject property.	
Wildlife Habitat: Bat Hibernacula					Not Present	Not Present
<u>Rationale</u> Bat hibernacula are rare habitats in Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Center (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum[cxlviii, ccvii] for most. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"[ccv] • SWHMiST[cxlix] Index #1 provides development effects and mitigation measures.	There are no mine shafts, caves, or karsts within the subject property or study area.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Bat Maternity Colonies					Possible	Not Present
Rationale: Known locations of forested bat maternity colonies is extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	Maternity colonies can be found in tree cavities, vegetation and often in buildings[xxii, xxv, xxvi, xxvii, xxxi] (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario[xxii] • Maternity colonies located in Mature deciduous or mixed forest stands[ccix, ccx] with >10/ha large diameter (>25cm dbh) wildlife trees[ccvii] • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3[ccxiv] or class 1 or 2[ccxii] • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred[ccx] Information Sources • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by: • >10 Big Brown Bats • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for wind Power Projects[ccv] • SWHMiST[cxlix] Index #12 provides development effects and mitigation measures.	The study area contains areas of treed swamp and forest which may contain sutiable tree habitat. There is no suitable habitat on the subject property.	
Wildlife Habitat: Turtle Wintering Area					Possible	Not Present
Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles - ELC Community Classes: SW, MA, OA and SA; ELC Community Series: FEO and BOO Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen[cix, cx, cxi, cxviii]. • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. Information Sources • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF ecologist or biologist • Natural Heritage Information Center (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May)[cvii] • Congregation of turtles is more common where wintering areas are limited and therefore significant[cix, cx, cxi, cxii]. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle wintering habitat.	Areas of open-water wetland within the study area may provide turtle overwintering habitat. No wetlands or water bodies are present within the subject property.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	**ELC Ecosite Codes**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Snake Hibernaculum					Possible	Not Present
Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake Lizard: Special Concern (Southern Shield population): Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites may be directly related to these habitats. Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. The existence of features that go below the frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line[xliv, l, li, lii, cxii.] • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures cciii. Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information from CAs. • Local Field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. clubs • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • Note: If there are Special Concern Species present, then site is SWH • Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30m buffer is the SWH[í] • SWHMiST[cxlix] Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	The study area may contain sutiable habitat for snake hibernacula. This habitat type is not present within the subject property.	
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)					Not Present	Not Present
Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. Information Sources • Reports and other information available from CAs • Ontario Breeding Bird Atlas [ccv] • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist clubs	Studies confirming: • Presence of 1 or more nesting sites with 8[cxlvix] or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests[ccvii] • Field surveys to observe and count swallow nests are to be completed during the breeding season Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWHMiST[cxlix] Index #4 provides development effects and mitigation measures	The study area and subject property do not contain sutiable banks or cliffs for nesting bird breeding habitat.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)					Possible	Not Present
Rationale: Large Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15m from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas[ccv], colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNR). • NHIC Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries • Reports and other information available from CAs • MNRF District Offices • Local naturalist clubs	Studies confirming: • Presence of 5[í] or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH [cc, ccvii] • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWHMiST[cxlix] Index #5 provides development effects and mitigation measures.	This habitat type may be present within the large treed feature in the study area. No suitable habitat is present on the subject property.	
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Ground)					Not Present	Not Present
Rationale: Colonies are important to local bird populations, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6 MAS1 – 3 CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas[ccv], rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field naturalist clubs	Studies confirming: • Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern[í]. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH[cc, ccvii] • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #6 provides development effects and mitigation measures.	The study are and subject property do not contain islands or peninsulas in open water or marshy areas.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Migratory Butterfly Stopover Areas					Not Present	Not Present
<u>Rationale:</u> Butterfly stopovers areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u>: Monarch	Combination of ELC Community Series: Need to have present one Community Series from each landclass: <u>Field</u>: CUM CUS CUT <u>Forest</u>: FOC FOM FOD CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario[cxlix]. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south[xxxii, xxxiii, xxxiv, xxxv, xxxvi.] • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat cxlviii, cxlix. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes[xxxvii, xxxviii, xxxix, xl, xli.] <u>Information Sources</u> • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct)[xliii]. MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day[xxxvii], significant variation can occur between years and multiple years of sampling should occur [xl, xlii]. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST[cxlix] Index #16 provides development effects and mitigation measures.	The study area or subject property is not within 5km of Lake Ontario.	
Wildlife Habitat: Landbird Migratory Stopover Areas					Not Present	Not Present
<u>Rationale:</u> Sites with a high diversity of species as well as high number are most significant	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha[i] in size and within 5km [iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv] of Lake Ontario. • If multiple woodlands are located along the shoreline, those woodlands <2km from Lake Ontario are more significant[cxlix] • Sites have a variety of habitats; forest, grassland and wetland complexes[cxlix]. • The largest sites are more significant[cxlix] • Woodlots and forest fragments are important habitats to migrating birds[ccxviii], these features located along the shore and located within 5km of Lake Ontario are Candidate SWH[cxlviii]. <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the woodlot by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr/May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #9 provides development effects and mitigation measures.	The study area and subject property is not within 5km of Lake Ontario.	

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Deer Yarding Areas					Possible	Not Present
Rationale: Winter habitat for deer is considered to be the main factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include: FOM, FOC, SWM and SWC. Or these ELC Ecosites: CUP2 CUP3 FOD3 CUT	• Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%[cxciv]. • OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual"[cxcv] • Woodlots with high densities of deer due to artificial feeding are not significant.	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH[lvi, lvii, lviii, lix, lx, Í]. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations[cxcv]. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2 provides development effects and mitigation measures.	The large wooded feature within the study area may contain deer yarding habitat. This habitat type is not present on the subject property.	
Wildlife Habitat: Deer Winter Congregation Areas					Not Present	Not Present
Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions[exlviii]	White-tailed Deer	All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Eco-region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands[cxlviii]. • If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha[ccxxiv]. • Woodlots with high densities of deer due to artificial feeding are not significant. Information Sources • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF[cxlviii]. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR[Í]. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques[ccxxiv] , ground or road surveys, or a pellet count deer density survey[ccxxv]. • If a SWH is determined for Deer Wintering Area of if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #2 provides development effects and mitigation measures.	The large wooded feature within the study area may contain deer congregation habitat. This habitat type is not present on the subject property.	

Significant Wildlife Habitat Assessment Tables

Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Defining Criteria	Study Area	Subject Property
Cliff and Talus Slopes					Not Present	Not Present
Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information on their website • Local naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes[lxxviii] • SWHMiST[cxlix] Index #21 provides development effects and mitigation measures.	There are no cliffs or talus slopes within the study area or subject property.	
Sand Barrens					Not Present	Not Present
Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always <60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	Any sand barren area, >0.5ha in size. Information Sources • OMNRF Districts. • Natural Heritage Information Center (NHIC) has location information on their website • Field naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens[lxxviii] • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)[i]. • SWHMiST[cxlix] Index #20 provides development effects and mitigation measures.	There are no sand barrens within the study area or subject property.	

Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Defining Criteria	Study Area	Subject Property
Alvar					Not Present	Not Present
Rationale: Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregion 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species: 1) Carex crawei 2) Panicum philadelphicum 3) Eleochairs compressa 4) Scutellaria parvula 5) Trichostema branchiatum These indicator species are very specific to Alvars within Ecoregion 6E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoo geographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover[lxxviii].	An Alvar site > 0.5 ha in size[lxxv]. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists[lxxvi]. • Ontario Nature – Conserving Great Lakes Alvars[ccviii]. • Natural Heritage Information Center (NHIC) has location information on their website • Field Naturalist clubs • Conservation Authorities	Field studies identify four of the five Alvar indicator species[lxxv, cxlix] at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotics sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses[lxxv]. • SWHMiST[cxlix] Index #17 provides development effects and mitigation measures.	The study area or subject property do not contain alvar habitat.	
Old Growth Forest					Not Present	Not Present
Rationale: Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland Stands areas 30ha or greater in size or with at least 10 ha interior habitat assuming 100m buffer at edge of forest Í. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Forester, Ecologist or Biologist • Field Local naturalist clubs • Conservation Authorities • Sustainable Forestry License (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat[cxlviii] • The stand will have experienced no recognizable forestry activities[cxlviii] • The area of Forest Ecosites combined to make up the stand is the SWH. • Determine ELC Vegetation Type for forest stand[lxxviii] • SWHDSS[cxlix] Index #23 provides development effects and mitigation measures.	The study area or subject property do not contain old growth forest habitat.	

Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Defining Criteria	Study Area	Subject Property
Savannah					Not Present	Not Present
Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	• No minimum size to site Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information on their website • OMNRF Ecologists • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in[lxxv] Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics sp.). • SWHMiST[cxlix] Index #18 provides development effects and mitigation measures.	The study area or subject property does not contain savannah habitat.	
Tallgrass Prairie					Not Present	Not Present
Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	• No minimum size to site Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • OMNR Districts • Natural Heritage Information Center (NHIC) has location information available on their website • Field naturalists clubs • Conservation Authorities	Field studies confirm one or more of the Prairie indicator species listed in[lxxv] Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHMiST[cxlix] Index #19 provides development effects and mitigation measures.	The study area and subject property does not contain tallgrass prarie.	

Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Defining Criteria	Study Area	Subject Property
Other Rare Vegetation Communities					Not Present	Not Present
Rationale: Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG[cxlviii]. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M[cxlviii] The OMNR/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field naturalists clubs • Conservation Authorities	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG[cxlviii]. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	There are no other rare vegeration communites present within the study area or subject property.	

Significant Wildlife Habitat Assessment Tables

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Waterfowl Nesting Area					Possible	Not Present
Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to Provincially Significant Wetlands	A waterfowl nesting area extends 120m[cxlix] from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120m of each individual wetland where waterfowl nesting is known to occur[cxlix]. • Upland areas should be at least 120m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from CAs	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120m[cxlviii] from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST[cxlix] Index #25 provides development effects and mitigation measures.	The study area has upland habitats adjacent to marsh and swamp communities that may provide suitable habitat for waterfowl nesting.	

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Bald Eagle and Osprey Nesting, Foraging and Perching Habitat					Possible	Not Present
Rationale: Nest sites are fairly uncommon in Eco-region 6E are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey Special Concern: Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). Information Sources • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts • Sustainable Forestry License (SFL) companies will identify additional nesting locations through field operations. • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented • Reports and other information available from CAs. • Field naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area[cxlviii]. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300m radius around the nest or the contiguous woodland stand is the SWHccvii, maintaining undisturbed shorelines with large trees within this area is important[cxlviii]. • For a Bald Eagle the active nest and a 400-800m radius around the nest is the SWH[cvi], ccvii. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat[cvi]. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant[ccvii] • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWHMiST[cxlix] Index #26 provides development effects and mitigation measures	The study area in proximity to open water wetlands and its possible that suitable nesting habitat may be present.	

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	Study Area	Subject Property
Wildlife Habitat: Woodland Raptor Nesting Habitat					Possible	Not Present
Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat[lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv, xcvi, cxxxiii]. Interior habitat determined with a 200m buffer[cxlviii]. • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Cooper's hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. Information Sources • OMNRF • Check the Ontario Breeding Bird Atlas[ccv] or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada • Reports and other information available from CAs	Studies confirm: • Presence of 1 or more active nests from species list is considered significant[cxlviii]. • Red-shouldered Hawk and Northern Goshawk – a 400m radius around the nest or 28ha area of habitat is the SWH[ccvii]. • Barred Owl – a 200m radius around the nest is the SWH[ccvii]. • Broad-winged Hawk and Coopers Hawk – a 100m radius around the nest is the SWH[ccvii]. • Sharp-shinned Hawk – a 50m radius around the nest is the SWH[ccvii]. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWHMiST[cxlix] Index #27 provides development effects and mitigation measures.	The study area overlaps with a woodland of sufficient size to suuport woodland raptor nesting.	
Wildlife Habitat: Turtle Nesting Area					Possible	Not Present
Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m)[cxlviii] or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. Information Sources • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC) • Field Naturalist clubs and landowners	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH[i] • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH[cxlviii]. • Travel routes from wetland to nesting area are to be considered within the SWH[cxlix]. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST[cxlix] Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Turtle nesting may occur within the study area, but the subject property is greater than 100m from the marsh community.	

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	**ELC Ecosite Codes**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Seeps and Springs					Possible	Not Present
<u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system[cxvii, cxlix]. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species[cxix, cxx, cxxi, cxxii, cxiii, cxiv] <u>Information Sources</u> • Topographical Map • Thermography • Hydrological surveys conducted by CAs and MOE • Field naturalists clubs and landowners • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat[cxlviii] • SWHMiST[cxlix] Index #30 provides development effects and mitigation measures	It is possible that seeps and springs are present in the forested areas of the study area, but not within the subject property itself.	
Wildlife Habitat: Amphibian Breeding Habitat (Woodland)					Possible	Not Present
<u>Rationale:</u> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) [ccvii] within or adjacent (within 120m) to a woodland (no minimum size)[clxxxii, lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx] Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat[cxlviii] <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses)[lxxi] or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys[cviii] will be required during the spring March-June when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the woodland area plus a 230m radius of woodland area[lxiii,lxv, lxvi, lxvii, lxviii, lxix, lxx, lxxi] if a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is the be included in the habitat. • SWHMiST[cxlix] Index #14 provides development effects and mitigation measures.	It is possible that the woodlands in the study area have suitable vernal pools to support woodland breeding amphibians.	

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH	Assessment Details	
	Wildlife Species	**ELC Ecosite Codes**	**Habitat Criteria and Information Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Amphibian Breeding Habitat (Wetland)					Not Present	Not Present
Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Tree frog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands >500m2 (about 25m diameter)[ccvii] supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats[clxxxiv]. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from CAs.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species and with at least 20 individuals (adults or eggs masses)[lxxi, lxxiii], or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys[cviii] will be required during spring March to June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST[cxlix] Index #15 provides development effects and mitigation measures.	There are no isolated wetlands in the study area or subject property to support wetland amphibian breeding.	
Woodland Area-Sensitive Bird Breeding Habitat					Not Present	Not Present
Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-Bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha.[cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxv, cxxvi, cxxxvii, cxxxviii, cxxxix, cxl, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvii, clviii, clix] • Interior forest habitats are at least 200m from forest edge habitat. Information Sources • Local bird clubs • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to greatest value to interior species • Reports and other information available from CAs.	• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWHMiST[cxlix] Index #34 provides development effects and mitigation measures.	There is no interior forest habitat within the subject property or study area.	

Significant Wildlife Habitat Assessment Tables

Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	Wildlife Species	**ELC Ecosites**	**Detailed Information and Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Marsh Bird Breeding Habitat					Possible	Not Present
Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present[cxxiv]. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. Information Sources • Contact OMNRF, wetland evaluations are a good source of information. • Field naturalist clubs • Natural Heritage Information Center (NHIC) Records • Reports and other information available from CAs. • Ontario Breeding Bird Atlas[ccv]	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species[i]. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH[i]. • Area of the ELC ecosite is the SWH • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi]. • SWHMiST[cxlix] Index #35 provides development effects and mitigation measures	There is limited potential for the adjacent forested wetlands to provide nesting habitat for Green Heron. It is unlikely that the habitat would be suitable for the other listed species.	
Wildlife Habitat: Open Country Bird Breeding Habitat					Not Present	Not Present
Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern: Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha [clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix]. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years)[i]. Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Ask local birders • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owl is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi]. • SWHMiST[cxlix] Index #32 provides development effects and mitigation measures.	There are no grasslands in the study area or subject propetry that are of suitable size to support this habitat type.	

Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	Wildlife Species	**ELC Ecosites**	**Detailed Information and Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Shrub/Early Successional Bird Breeding Habitat					Not Present	Not Present
<u>Rationale:</u> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records cxcix.	<u>Indicator spp.</u>: Brown Thrasher Clay-coloured Sparrow <u>Common spp.</u>: Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher <u>Special Concern</u>: Yellow-breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	Large field areas succeeding to shrub and thicket habitats>10ha[clxiv] in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years)[í]. Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species [clxxiii]. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <u>Information Sources</u> • Agricultural land classification maps Ministry of Agriculture Local bird clubs • Ontario Breeding Bird Atlas[ccv] • Reports and other information available from CAs	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species[í]. • A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWHMiST[cxlix] Index #33 provides development effects and mitigation measures.	There are no shrub thickets in the study area or subject propetry that are of suitable size to support this habitat type.	
Wildlife Habitat: Terrestrial Crayfish					Possible	Not Present
<u>Rationale:</u> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.[ccii]	Chimney or Digger Crayfish: (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish: (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM	Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites[cci] • Area of ELC Ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH • Surveys should be done April to August during in temporary or permanent water Note the presence of burrows or chemistry are often the only indicator of presence, observance or collection of individuals is very difficult[cci] • SWHMiST[cxlix] Index #36 provides development effects and mitigation measures.	It is possible that the edges of the wetlands present in the study area may provide suitable habitat for terrestrial crayfish.	

Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	Wildlife Species	**ELC Ecosites**	**Detailed Information and Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Special Concern and Rare Wildlife Species					Possible	Not Present
Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites[lxxviii]. Information Sources • Natural Heritage Information Centre (NHIC) will have the Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website: "Get Information": http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas[ccv] • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWHMiST[cxlix] Index #37 provides development effects and mitigation measures.	No other speical concern or rare species or their habitats were observed on the subject property. There is potential for special concern or rare species to occur in the study area habitats that were not accessible and therefore not surveyed.	

Significant Wildlife Habitat Assessment Tables

Table 5. Characteristics of Animal Movement Corridors for Ecoregion 6E.

Rationale	Candidate SWH			Confirmed SWH		
	Wildlife Species	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	**Study Area**	**Subject Property**
Wildlife Habitat: Amphibian Movement Corridors					Not Present	Not Present
Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	Movement corridors between breeding habitat and summer habitat [clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi]. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat – Wetland) of this Schedule[í]. Information Sources • MNRF District Office • Natural Heritage Information Center NHIC • Reports and other information available from CAs • Field Naturalist Clubs	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. Cooridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant[cxlix]. • Corridors should have at least 15m of vegetation on both sides of waterway [cxlix] or be up to 200m wide[cxlix] of woodland habitat and with gaps <20m [cxlix]. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat[cxlix]. • SWHMiST[cxlix] Index #40 provides development effects and mitigation measures.	There is no wetland amphibian breeding habitat present in the vicinity of the study area or subject property and therefore there are no amphibian movement corridors.	
Wildlife Habitat: Deer Movement Corridors					Possible	Not Present
Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule[í]. • A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion [clxxxii, clxxxiii, cxlix, cxciv]. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). Information Sources • MNRF District Office • Natural Heritage Information Center (NHIC) • Reports and other information available from CAs • Field Naturalist Clubs	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas. • Corridors should be at least 200m wide[cxlix] with gaps <20m[cxlix] and if following riparian area with at least 15m of vegetation on both sides of waterway[cxlix]. Shorter corridors are more significant than longer corridors[cxlix] • SWHMiST[cxlix] Index #39 provides development effects and mitigation measures.	The forested comunities that overlap with the study area may act as a movement corridor for deer, depending on the presence of deer wintering habitat.	

Appendix II
Plant Species List

Plant Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Wellington-Dufferin	iNaturalist	NHIC Data*	NRSI Observed	CUM1-1	FOM (Off Property)
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	Riley 1989	iNaturalist 2024	MNRF 2023b	NRSI Results From 2024	NRSI Results From 2024	NRSI Results From 2024
Gymnosperms	**Conifers**											
Cupressaceae	**Cypress Family**											
Thuja occidentalis	Eastern White Cedar	S5								X		X
Pinaceae	**Pine Family**											
Pinus nigra	Black Pine	SE3								X		X
Pinus strobus	Eastern White Pine	S5								X		X
Dicotyledons	**Dicots**											
Aceraceae	**Maple Family**											
Acer negundo	Manitoba Maple	S5								X	X	X
Acer saccharinum	Silver Maple	S5								X		X
Acer saccharum	Sugar Maple	S5								X		X
Anacardiaceae	**Sumac or Cashew Family**											
Rhus typhina	Staghorn Sumac	S5								X	X	
Apiaceae	**Carrot or Parsley Family**											
Daucus carota	Wild Carrot	SE5								X	X	
Asclepiadaceae	**Milkweed Family**											
Asclepias syriaca	Common Milkweed	S5								X	X	
Asteraceae	**Composite or Aster Family**											
Arctium lappa	Great Burdock	SE5								X	X	
Arctium minus	Common Burdock	SE5								X	X	
Cirsium arvense	Creeping Thistle	SE5								X	X	
Erigeron annuus	Annual Fleabane	S5								X	X	
Leucanthemum vulgare	Oxeye Daisy	SE5								X	X	
Solidago sp.	Goldenrod sp.									X	X	
Symphyotrichum lanceolatum	Panicled Aster	S5								X	X	
Symphyotrichum novae-angliae	New England Aster	S5								X	X	
Taraxacum officinale	Common Dandelion	SE5								X	X	
Tragopogon pratensis	Meadow Goat's-beard	SE5								X	X	
Tripleurospermum inodorum	Scentless Chamomile	SE								X	X	
Tussilago farfara	Colt's-foot	SE5								X	X	
Boraginaceae	**Borage Family**											
Echium vulgare	Common Viper's Bugloss	SE5								X	X	
Brassicaceae	**Mustard Family**											
Alliaria petiolata	Garlic Mustard	SE5								X	X	
Barbarea vulgaris	Bitter Wintercress	SE5								X	X	
Berteroa incana	Hoary False-alyssum	SE5								X	X	
Diplotaxis muralis	Stinking Wallrocket	SE3								X	X	
Hesperis matronalis	Dame's Rocket	SE5								X	X	
Sinapis arvensis	Corn Mustard	SE5								X	X	
Thlaspi arvense	Field Penny-cress	SE5								X	X	
Caryophyllaceae	**Pink Family**											
Silene vulgaris	Bladder Campion	SE5								X	X	
Cornaceae	**Dogwood Family**											
Cornus racemosa	Gray Dogwood	S5								X		X
Cornus sericea	Red-osier Dogwood	S5								X	X	
Elaeagnaceae	**Oleaster Family**											
Elaeagnus umbellata	Autumn Olive	SE3								X	X	
Fabaceae	**Pea Family**											
Lathyrus tuberosus	Tuberous Vetchling	SE3								X	X	
Lotus corniculatus	Garden Bird's-foot Trefoil	SE5								X	X	
Medicago lupulina	Black Medic	SE5								X	X	
Trifolium repens	White Clover	SE5								X	X	
Vicia cracca	Tufted Vetch	SE5								X	X	

Plant Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Wellington-Dufferin	iNaturalist	NHIC Data*	NRSI Observed	CUM1-1	FOM (Off Property)
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	Riley 1989	iNaturalist 2024	MNRF 2023b	NRSI Results From 2024	NRSI Results From 2024	NRSI Results From 2024
Lamiaceae	**Mint Family**											
Leonurus cardiaca	Common Motherwort	SE5								X	X	
Nepeta cataria	Catnip	SE5								X	X	
Oleaceae	**Olive Family**											
Fraxinus americana	White Ash	S4								X	X	X
Fraxinus nigra	Black Ash	S4	END	T	NS	No schedule		X				
Plantaginaceae	**Plantain Family**											
Plantago lanceolata	English Plantain	SE5								X	X	
Polygonaceae	**Smartweed Family**											
Reynoutria japonica	Japanese Knotweed	SE5								X	X	
Rumex crispus	Curly Dock	SE5								X	X	
Rumex obtusifolius	Bitter Dock	SE5								X	X	
Rhamnaceae	**Buckthorn Family**											
Rhamnus cathartica	Common Buckthorn	SE5								X	X	X
Salicaceae	**Willow Family**											
Populus tremuloides	Trembling Aspen	S5								X		X
Salix petiolaris	Meadow Willow	S5								X	X	
Scrophulariaceae	**Figwort Family**											
Aureolaria flava	Smooth Yellow False Foxglove	S2?	THR	T	T	Schedule 1			X			
Verbascum thapsus	Common Mullein	SE5								X	X	
Solanaceae	**Nightshade Family**											
Solanum dulcamara	Bittersweet Nightshade	SE5								X	X	
Tiliaceae	**Linden Family**											
Tilia americana	American Basswood	S5								X		X
Urticaceae	**Nettle Family**											
Urtica dioica ssp. dioica	European Stinging Nettle	SE2								X	X	
Violaceae	**Violet Family**											
Viola sororia	Woolly Blue Violet	S5								X	X	
Vitaceae	**Grape Family**											
Parthenocissus vitacea	Thicket Creeper	S5								X	X	X
Vitis riparia	Riverbank Grape	S5								X		X
Monocotyledons	**Monocots**											
Poaceae	**Grass Family**											
Dactylis glomerata	Orchard Grass	SE5								X	X	
Elymus repens	Creeping Wildrye	SE5								X	X	
Lolium perenne	Perennial Ryegrass	SE4								X	X	
Phalaris arundinacea var. arundinacea	Reed Canary Grass	S5								X	X	
Phragmites australis ssp. australis	European Reed	SE5								X	X	
Poa pratensis	Kentucky Bluegrass	S5								X	X	
Total								**1**	**1**	**61**	**52**	**13**

*NHIC Atlas Squares: 17NJ7012, 17NJ7013

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Appendix III
Bird Species List

Bird Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	Other Observations - Incidental
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	BSC et al. 2006	MNRF 2023b	NRSI Results from 2024	NRSI Results from 2024
Anatidae	**Ducks, Geese & Swans**									
Aix sponsa	Wood Duck	S5B,S3N					CO			
Anas acuta	Northern Pintail	S5B,S4N					CO			
Anas platyrhynchos	Mallard	S5					CO			
Anas rubripes	American Black Duck	S4					PO			
Aythya americana	Redhead	S2B,S4N					PR			
Branta canadensis	Canada Goose	S5					CO		**OB**	OB
Cygnus olor	Mute Swan	SNA					CO			
Lophodytes cucullatus	Hooded Merganser	S5					CO			
Mareca americana	American Wigeon	S4B,S4N,S5M					CO			
Mareca strepera	Gadwall	S4B,S4N,S5M					CO			
Oxyura jamaicensis	Ruddy Duck	S3B,S4N,S5M					CO			
Spatula clypeata	Northern Shoveler	S4B,S4N,S5M					PO			
Spatula discors	Blue-winged Teal	S3B,S4M					CO			
Phasianidae	**Partridges, Grouse & Turkeys**									
Bonasa umbellus	Ruffed Grouse	S5					CO			
Podicipediformes	**Grebes**									
Podilymbus podiceps	Pied-billed Grebe	S4B,S2N					CO			
Columbidae	**Pigeons & Doves**									
Columba livia	Rock Pigeon	SNA					PR			
Zenaida macroura	Mourning Dove	S5					CO		**PO**	OB
Cuculiformes	**Cuckoos & Anis**									
Coccyzus americanus	Yellow-billed Cuckoo	S4B					PR			
Coccyzus erythropthalmus	Black-billed Cuckoo	S4S5B					PR			
Apodidae	**Swifts**									
Chaetura pelagica	Chimney Swift	S3B	THR	T	T	Schedule 1	PO			
Trochilidae	**Hummingbirds**									
Archilochus colubris	Ruby-throated Hummingbird	S5B					CO		**PO**	
Rallidae	**Rails, Gallinules & Coots**									
Fulica americana	American Coot	S3B,S4N	NAR	NAR	NS	No schedule	CO			
Gallinula galeata	Common Gallinule	S3B					CO			
Porzana carolina	Sora	S5B					PR			
Rallus limicola	Virginia Rail	S4S5B					CO			
Charadriidae	**Plovers & Lapwings**									
Charadrius vociferus	Killdeer	S4B					CO		**CO**	CO
Scolopacidae	**Sandpipers & Allies**									
Actitis macularius	Spotted Sandpiper	S5B					PR			
Gallinago delicata	Wilson's Snipe	S5B					PR			
Scolopax minor	American Woodcock	S4B					PR			
Laridae	**Gulls, Terns & Skimmers**									
Chlidonias niger	Black Tern	S3B,S4M	SC	NAR	NS	No schedule	PO			
Ardeidae	**Herons & Bitterns**									
Ardea herodias	Great Blue Heron	S4					PO			
Butorides virescens	Green Heron	S4B					PR			
Ixobrychus exilis	Least Bittern	S4B	THR	T	T	Schedule 1	PO			
Nycticorax nycticorax	Black-crowned Night-Heron	S3B,S2N,S4M					PO			
Cathartidae	**Vultures**									
Cathartes aura	Turkey Vulture	S5B,S3N					PO			
Pandionidae	**Osprey**									
Pandion haliaetus	Osprey	S5B					CO			

Bird Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	Other Observations - Incidental
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	BSC et al. 2006	MNRF 2023b	NRSI Results from 2024	NRSI Results from 2024
Accipitridae	**Hawks, Kites, Eagles & Allies**									
Accipiter cooperii	Cooper's Hawk	S4	NAR	NAR	NS	No schedule	CO			
Accipiter gentilis	Northern Goshawk	S4	NAR	NAR	NS	No schedule	CO			
Accipiter striatus	Sharp-shinned Hawk	S5	NAR	NAR	NS	No schedule	CO			
Buteo jamaicensis	Red-tailed Hawk	S5	NAR	NAR	NS	No schedule	PR		**CO**	
Buteo platypterus	Broad-winged Hawk	S5B					PR			
Circus hudsonius	Northern Harrier	S5B,S4N	NAR	NAR	NS	No schedule	PR			
Strigidae	**Typical Owls**									
Bubo virginianus	Great Horned Owl	S4					PR			
Megascops asio	Eastern Screech-Owl	S4	NAR	NAR	NS	No schedule	PR			
Alcedinidae	**Kingfishers**									
Megaceryle alcyon	Belted Kingfisher	S5B,S4N					CO			
Picidae	**Woodpeckers**									
Colaptes auratus	Northern Flicker	S5					CO		**OB**	OB
Dryobates pubescens	Downy Woodpecker	S5					CO			
Dryobates villosus	Hairy Woodpecker	S5					CO			
Dryocopus pileatus	Pileated Woodpecker	S5					PR			
Tyrannidae	**Tyrant Flycatchers**									
Contopus virens	Eastern Wood-Pewee	S4B	SC	SC	SC	Schedule 1	PR			
Empidonax alnorum	Alder Flycatcher	S5B					PR		**PO**	
Empidonax minimus	Least Flycatcher	S5B					PR			
Empidonax traillii	Willow Flycatcher	S4B					PR			
Myiarchus crinitus	Great Crested Flycatcher	S5B					CO			
Sayornis phoebe	Eastern Phoebe	S5B					CO			
Tyrannus tyrannus	Eastern Kingbird	S4B					CO		**PO**	
Vireonidae	**Vireos**									
Vireo flavifrons	Yellow-throated Vireo	S4B					PR			
Vireo gilvus	Warbling Vireo	S5B					PR		**PR**	
Vireo olivaceus	Red-eyed Vireo	S5B					CO		**PO**	
Vireo solitarius	Blue-headed Vireo	S5B					PR			
Corvidae	**Crows & Jays**									
Corvus brachyrhynchos	American Crow	S5					CO		**OB**	OB
Cyanocitta cristata	Blue Jay	S5					CO			
Alaudidae	**Larks**									
Eremophila alpestris	Horned Lark	S4					PR			
Hirundinidae	**Swallows**									
Hirundo rustica	Barn Swallow	S4B	SC	SC	T	Schedule 1	CO		**OB**	OB
Petrochelidon pyrrhonota	Cliff Swallow	S4S5B					CO			
Progne subis	Purple Martin	S3B					CO			
Riparia riparia	Bank Swallow	S4B	THR	T	T	Schedule 1	PO			
Stelgidopteryx serripennis	Northern Rough-winged Swallow	S4B					PR		**OB**	
Tachycineta bicolor	Tree Swallow	S4S5B					CO		**PR**	OB
Paridae	**Chickadees & Titmice**									
Poecile atricapillus	Black-capped Chickadee	S5					CO		**PO**	
Sittidae	**Nuthatches**									
Sitta canadensis	Red-breasted Nuthatch	S5					PR			
Sitta carolinensis	White-breasted Nuthatch	S5					CO			
Certhiidae	**Creepers**									
Certhia americana	Brown Creeper	S5					PR			
Troglodytidae	**Wrens**									

Bird Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	Other Observations - Incidental
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	BSC et al. 2006	MNRF 2023b	NRSI Results from 2024	NRSI Results from 2024
Cistothorus palustris	Marsh Wren	S4B,S3N					PR			
Cistothorus stellaris	Sedge Wren	S4B	NAR	NAR	NS	No schedule	PO			
Troglodytes aedon	House Wren	S5B					CO			
Troglodytes hiemalis	Winter Wren	S5B,S4N					PR			
Polioptilidae	**Gnatcatchers**									
Polioptila caerulea	Blue-gray Gnatcatcher	S4B					PR			
Regulidae	**Kinglets**									
Regulus satrapa	Golden-crowned Kinglet	S5					CO			
Turdidae	**Thrushes**									
Catharus fuscescens	Veery	S5B					PR			
Hylocichla mustelina	Wood Thrush	S4B	SC	T	T	Schedule 1	PR			
Sialia sialis	Eastern Bluebird	S5B,S4N	NAR	NAR	NS	No schedule	PR			
Turdus migratorius	American Robin	S5					CO		**PR**	OB
Mimidae	**Mockingbirds, Thrashers & Allies**									
Dumetella carolinensis	Gray Catbird	S5B,S3N					CO		**PR**	
Toxostoma rufum	Brown Thrasher	S4B					CO			
Sturnidae	**Starlings**									
Sturnus vulgaris	European Starling	SNA					CO		**PO**	OB
Bombycillidae	**Waxwings**									
Bombycilla cedrorum	Cedar Waxwing	S5					CO		**PR**	
Passeridae	**Old World Sparrows**									
Passer domesticus	House Sparrow	SNA					CO		**OB**	OB
Fringillidae	**Finches & Allies**									
Haemorhous mexicanus	House Finch	SNA					CO		**OB**	
Haemorhous purpureus	Purple Finch	S5					CO			
Spinus tristis	American Goldfinch	S5					CO		**PR**	OB
Passerellidae	**New World Sparrows & Allies**									
Ammodramus savannarum	Grasshopper Sparrow	S4B	SC	SC	SC	Schedule 1	PO			
Melospiza georgiana	Swamp Sparrow	S5B,S4N					CO			
Melospiza melodia	Song Sparrow	S5					CO		**PR**	OB
Passerculus sandwichensis	Savannah Sparrow	S5B,S3N					CO			
Pipilo erythrophthalmus	Eastern Towhee	S4B,S3N					CO			
Pooecetes gramineus	Vesper Sparrow	S4B					PR			
Spizella passerina	Chipping Sparrow	S5B,S3N					CO			
Spizella pusilla	Field Sparrow	S4B,S3N					PR			
Zonotrichia albicollis	White-throated Sparrow	S5					PR			
Icteridae	**Troupials & Allies**									
Agelaius phoeniceus	Red-winged Blackbird	S5					CO		**PR**	OB
Dolichonyx oryzivorus	Bobolink	S4B	THR	SC	T	Schedule 1	CO	X		
Icterus galbula	Baltimore Oriole	S4B					CO		**PO**	
Molothrus ater	Brown-headed Cowbird	S5					CO			
Quiscalus quiscula	Common Grackle	S5					CO		**PO**	
Sturnella magna	Eastern Meadowlark	S4B,S3N	THR	T	T	Schedule 1	CO	X		
Parulidae	**Wood Warblers**									
Geothlypis philadelphia	Mourning Warbler	S5B					CO			
Geothlypis trichas	Common Yellowthroat	S5B,S3N					CO		**PR**	
Leiothlypis ruficapilla	Nashville Warbler	S5B					CO			
Mniotilta varia	Black-and-white Warbler	S5B					PR			
Parkesia noveboracensis	Northern Waterthrush	S5B					PR			
Seiurus aurocapilla	Ovenbird	S5B					CO			

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Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	Other Observations - Incidental
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	BSC et al. 2006	MNRF 2023b	NRSI Results from 2024	NRSI Results from 2024
Setophaga coronata	Yellow-rumped Warbler	S5B,S4N					PO			
Setophaga fusca	Blackburnian Warbler	S5B					PO			
Setophaga magnolia	Magnolia Warbler	S5B					PR			
Setophaga pensylvanica	Chestnut-sided Warbler	S5B					PR			
Setophaga petechia	Yellow Warbler	S5B					CO		**PR**	OB
Setophaga pinus	Pine Warbler	S5B,S3N					PR		**PO**	
Setophaga ruticilla	American Redstart	S5B					CO			
Setophaga virens	Black-throated Green Warbler	S5B					PR			
Vermivora cyanoptera	Blue-winged Warbler	S4B					CO			
Cardinalidae	**Cardinals, Grosbeaks & Allies**									
Cardinalis cardinalis	Northern Cardinal	S5					CO			
Passerina cyanea	Indigo Bunting	S5B					CO		**PO**	
Pheucticus ludovicianus	Rose-breasted Grosbeak	S5B					CO			
Piranga olivacea	Scarlet Tanager	S5B					PR			
Total							**130**	**2**	**30**	**14**

*OBBA Atlas Square: 17TNJ71

**NHIC Atlas Squares: 17NJ7012, 17NJ7013

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Appendix IV
Reptiles and Amphibians Species Lists

Reptile and Amphibian Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	iNaturalist	ORAA*	NHIC Data**	NRSI Observed
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	iNaturalist 2024	Ontario Nature 2019	MNRF 2023b	NRSI Results from 2024
Turtles										
Chelydra serpentina	Snapping Turtle	S4	SC	SC	SC	Schedule 1	X	X	X	
Chrysemys picta marginata	Midland Painted Turtle	S4		SC	SC	Schedule 1		X	X	
Emydoidea blandingii	Blanding's Turtle (Great Lakes / St. Lawren	S3	THR	E	E	Schedule 1		X		
Trachemys scripta	Pond Slider	SNA						X		
Snakes										
Lampropeltis triangulum	Eastern Milksnake	S4	NAR	SC	SC	Schedule 1		X	X	
Opheodrys vernalis	Smooth Greensnake	S4						X		
Nerodia sipedon sipedon	Northern Watersnake	S5	NAR	NAR	NS	No schedule		X		
Storeria dekayi	Dekay's Brownsnake	S5	NAR	NAR	NS	No schedule		X		
Storeria occipitomaculata	Red-bellied Snake	S5						X		
Thamnophis sirtalis sirtalis	Eastern Gartersnake	S5						X		
Salamanders										
Ambystoma sp.	Jefferson/Blue-spotted Salamander Compl	NP						X		
Ambystoma jeffersonianum	Jefferson Salamander	S2	END	E	E	Schedule 1		X		
Ambystoma laterale - (2) jeffersonianum	Unisexual Ambystoma (Jefferson Salaman	S2	END	E	E	Schedule 1		X		
Ambystoma (2) laterale - jeffersonianum	Unisexual Ambystoma (Blue-spotted Salan	S4	NAR	NAR	NS	No schedule		X		
Ambystoma laterale	Blue-spotted Salamander	S4						X		
Ambystoma maculatum	Spotted Salamander	S4						X		
Notophthalmus viridescens viridescens	Red-spotted Newt	S5						X		
Plethodon cinereus	Eastern Red-backed Salamander	S5						X		
Frogs and Toads										
Anaxyrus americanus	American Toad	S5						X		
Dryophytes versicolor	Gray Treefrog	S5						X		X
Pseudacris triseriata pop. 2	Western Chorus Frog (Great Lakes / St. La	S4	NAR	T	T	Schedule 1		X		
Pseudacris crucifer	Spring Peeper	S5						X		
Lithobates catesbeianus	American Bullfrog	S4					X	X		
Lithobates clamitans	Green Frog	S5					X	X		
Lithobates palustris	Pickerel Frog	S4	NAR	NAR	NS	No schedule		X		
Lithobates pipiens	Northern Leopard Frog	S5	NAR	NAR	NS	No schedule		X		X
Lithobates sylvaticus	Wood Frog	S5						X		
Total							3	**27**	**3**	2

*ORAA Atlas Square: 17NJ71

**NHIC Atlas Squares: 17NJ7012, 17NJ7013

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Appendix V
Mammals Species Lists

Mammal Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Ontario Mammal Atlas	NHIC Data**	NRSI Observed
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	Dobbyn 1994	MNRF 2023b	NRSI Results from 2024
Didelphimorphia	**Opossums**								
Didelphis virginiana	Virginia Opossum	S4					X		
Eulipotyphla	**Shrews, Moles, Hedgehogs, and Allies**								
Blarina brevicauda	Northern Short-tailed Shrew	S5					X		
Condylura cristata	Star-nosed Mole	S5					X		
Parascalops breweri	Hairy-tailed Mole	S4					X		
Sorex cinereus	Masked Shrew	S5					X		
Sorex fumeus	Smoky Shrew	S5					X		
Sorex palustris	Water Shrew	S5					X		
Chiroptera	**Bats**								
Eptesicus fuscus	Big Brown Bat	S4					X		
Lasionycteris noctivagans	Silver-haired Bat	S4		E	NS	No schedule	X		
Lasiurus borealis	Eastern Red Bat	S4		E	NS	No schedule	X		
Lasiurus cinereus	Hoary Bat	S4		E	NS	No schedule	X		
Myotis leibii	Eastern Small-footed Myotis	S2S3	END				X		
Myotis lucifugus	Little Brown Myotis	S3	END	E	E	Schedule 1	X		
Myotis septentrionalis	Northern Myotis	S3	END	E	E	Schedule 1	X		
Perimyotis subflavus	Tri-colored Bat	S3?	END	E	E	Schedule 1	X		
Lagomorpha	**Rabbits and Hares**								
Lepus americanus	Snowshoe Hare	S5					X		
Lepus europaeus	European Hare	SNA					X		
Sylvilagus floridanus	Eastern Cottontail	S5					X		X
Rodentia	**Rodents**								
Castor canadensis	Beaver	S5					X		
Erethizon dorsatum	Porcupine	S5					X		
Glaucomys sabrinus	Northern Flying Squirrel	S5					X		
Marmota monax	Woodchuck	S5					X		
Microtus pennsylvanicus	Meadow Vole	S5					X		
Microtus pinetorum	Woodland Vole	S3?	SC	SC	SC	Schedule 1	X		
Mus musculus	House Mouse	SNA					X		
Napaeozapus insignis	Woodland Jumping Mouse	S5					X		
Ondatra zibethicus	Muskrat	S5					X		
Peromyscus leucopus	White-footed Mouse	S5					X		
Peromyscus maniculatus	Deer Mouse	S5					X		
Rattus norvegicus	Norway Rat	SNA					X		
Sciurus carolinensis	Eastern Gray Squirrel	S5					X		
Synaptomys cooperi	Southern Bog Lemming	S4					X		
Tamias striatus	Eastern Chipmunk	S5					X		
Tamiasciurus hudsonicus	Red Squirrel	S5					X		
Zapus hudsonius	Meadow Jumping Mouse	S5					X		
Canidae	**Canines**								
Canis latrans	Coyote	S5					X		
Vulpes vulpes	Red Fox	S5					X		
Felidae	**Felines**								
Lynx rufus	Bobcat	S4					X		
Mephitidae	**Skunks and Stink Badgers**								
Mephitis mephitis	Striped Skunk	S5					X		
Mustelidae	**Weasels and Allies**								
Mustela richardsonii	American Ermine	S5					X		
Neogale frenata	Long-tailed Weasel	S4					X		
Neogale vison	American Mink	S4					X		
Taxidea taxus jacksoni	American Badger (Southwestern Ontario p	S1	END	E	E	Schedule 1	X		
Procyonidae	**Raccoons and Allies**								
Procyon lotor	Northern Raccoon	S5					X		
Ursidae	**Bears**								
Ursus americanus	American Black Bear	S5	NAR	NAR	NS	No schedule	X		
Artiodactyla	**Deer and Bison**								
Odocoileus virginianus	White-tailed Deer	S5					X		X
Total							**46**	**0**	**2**

*Mammal Atlas Square Number: NU
**NHIC Atlas Squares: 17NJ7012, 17NJ7013

Mammal Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

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Appendix VI
Butterfly Species Lists

Butterfly Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	iNaturalist	Ontario Butterfly Atlas*	NHIC Data**
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	iNaturalist 2024	Macnaughton et al. 2023	MNRF 2023b
Hesperiidae	**Skippers**								
Anatrytone logan	Delaware Skipper	S4						X	
Ancyloxypha numitor	Least Skipper	S5						X	
Epargyreus clarus	Silver-spotted Skipper	S4						X	
Erynnis baptisiae	Wild Indigo Duskywing	S4						X	
Erynnis icelus	Dreamy Duskywing	S5						X	
Erynnis juvenalis	Juvenal's Duskywing	S5						X	
Euphyes conspicua	Black Dash	S3						X	
Euphyes dion	Dion Skipper	S4						X	
Euphyes vestris	Dun Skipper	S5						X	
Poanes viator	Broad-winged Skipper	S4						X	
Polites mystic	Long Dash Skipper	S5						X	
Polites origenes	Crossline Skipper	S4						X	
Polites themistocles	Tawny-edged Skipper	S5						X	
Thorybes pylades	Northern Cloudywing	S5						X	
Thymelicus lineola	European Skipper	SNA						X	
Papilionidae	**Swallowtails**								
Heraclides cresphontes	Giant Swallowtail	S4						X	
Papilio polyxenes	Black Swallowtail	S5						X	
Pieridae	**Whites and Sulphurs**								
Colias eurytheme	Orange Sulphur	S5						X	
Colias philodice	Clouded Sulphur	S5						X	
Pieris oleracea	Mustard White	S4						X	
Pieris rapae	Cabbage White	SNA						X	
Pieris virginiensis	West Virginia White	S3	SC					X	
Lycaenidae	**Harvesters, Coppers, Hairstreaks, Blues**								
Callophrys niphon	Eastern Pine Elfin	S5						X	
Celastrina lucia	Northern Spring Azure	S5						X	
Celastrina sp.	Azure species	SNA						X	
Cupido comyntas	Eastern Tailed Blue	S5						X	
Glaucopsyche lygdamus	Silvery Blue	S5						X	
Satyrium acadica	Acadian Hairstreak	S4						X	
Satyrium calanus	Banded Hairstreak	S4						X	
Satyrium caryaevorus	Hickory Hairstreak	S4						X	
Satyrium titus	Coral Hairstreak	S5						X	
Nymphalidae	**Brush-footed Butterflies**								
Aglais milberti	Milbert's Tortoiseshell	S5						X	
Boloria bellona	Meadow Fritillary	S5						X	
Cercyonis pegala	Common Wood-Nymph	S5						X	
Coenonympha california	Common Ringlet	S5						X	
Danaus plexippus	Monarch	S2N,S4B	SC	E	E	Schedule 1		X	
Euphydryas phaeton	Baltimore Checkerspot	S4						X	
Junonia coenia	Common Buckeye	SNA						X	
Lethe anthedon	Northern Pearly-Eye	S5						X	
Lethe appalachia	Appalachian Brown	S4						X	
Lethe eurydice	Eyed Brown	S5						X	
Limenitis archippus	Viceroy	S5						X	
Limenitis arthemis arthemis	White Admiral	S5						X	
Limenitis arthemis astyanax	Red-spotted Purple	S5						X	
Megisto cymela	Little Wood-Satyr	S5						X	

Butterfly Species Reported from the Study Area - Puslinch Logistics Facility (Project #3370)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	iNaturalist	Ontario Butterfly Atlas*	NHIC Data**
		MNRF 2023a	MECP 2024	Government of Canada 2023	Government of Canada 2023	Government of Canada 2023	iNaturalist 2024	Macnaughton et al. 2023	MNRF 2023b
Nymphalis antiopa	Mourning Cloak	S5						X	
Nymphalis l-album	Compton Tortoiseshell	S5						X	
Phyciodes cocyta	Northern Crescent	S5					X	X	
Phyciodes tharos	Pearl Crescent	S4						X	
Polygonia comma	Eastern Comma	S5						X	
Polygonia interrogationis	Question Mark	S5						X	
Polygonia progne	Gray Comma	S5						X	
Vanessa atalanta	Red Admiral	S5B						X	
Vanessa cardui	Painted Lady	S5B						X	
Vanessa virginiensis	American Lady	S5						X	
Total							**1**	**55**	**0**

*TEA Atlas Square: Square 17NJ71
**NHIC Atlas Square: Square 17NJ7012, 17NJ7013

References

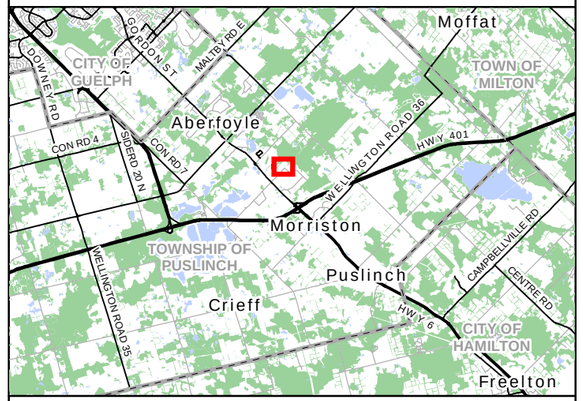
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Government of Canada. 2023. Species at Risk Public Registry: Species Search. COSEWIC Last Assessment Date: 2023-05-05. Available: https://species-registry.canada.ca/index-en.html#/species?sortBy=commonNameS

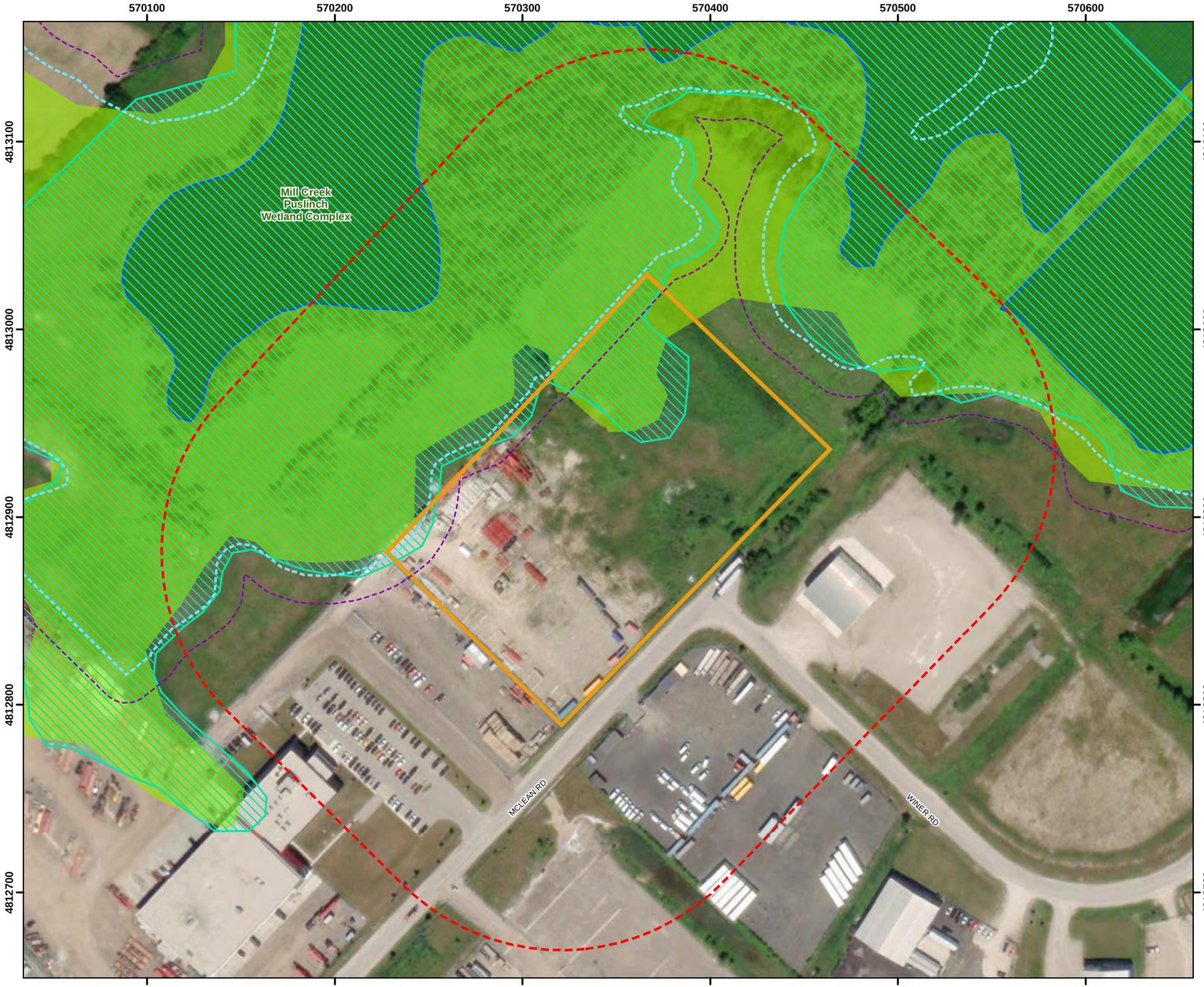
Maps

Map 1

Scoped EIS, Puslinch Logistics Facility

Existing Conditions





Legend

- Study Area (120m)
- Subject Property
- Provincially Significant Wetland (PSW)
- Wetland (GRCA)
- Regulation Limit (GRCA)
- Floodplain (GRCA)
- Core Greenlands System
- Natural Environment Zone

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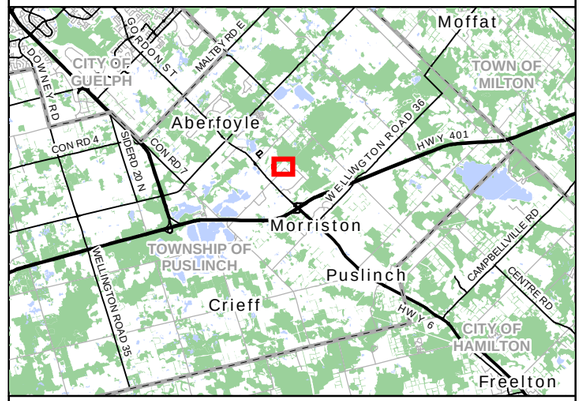
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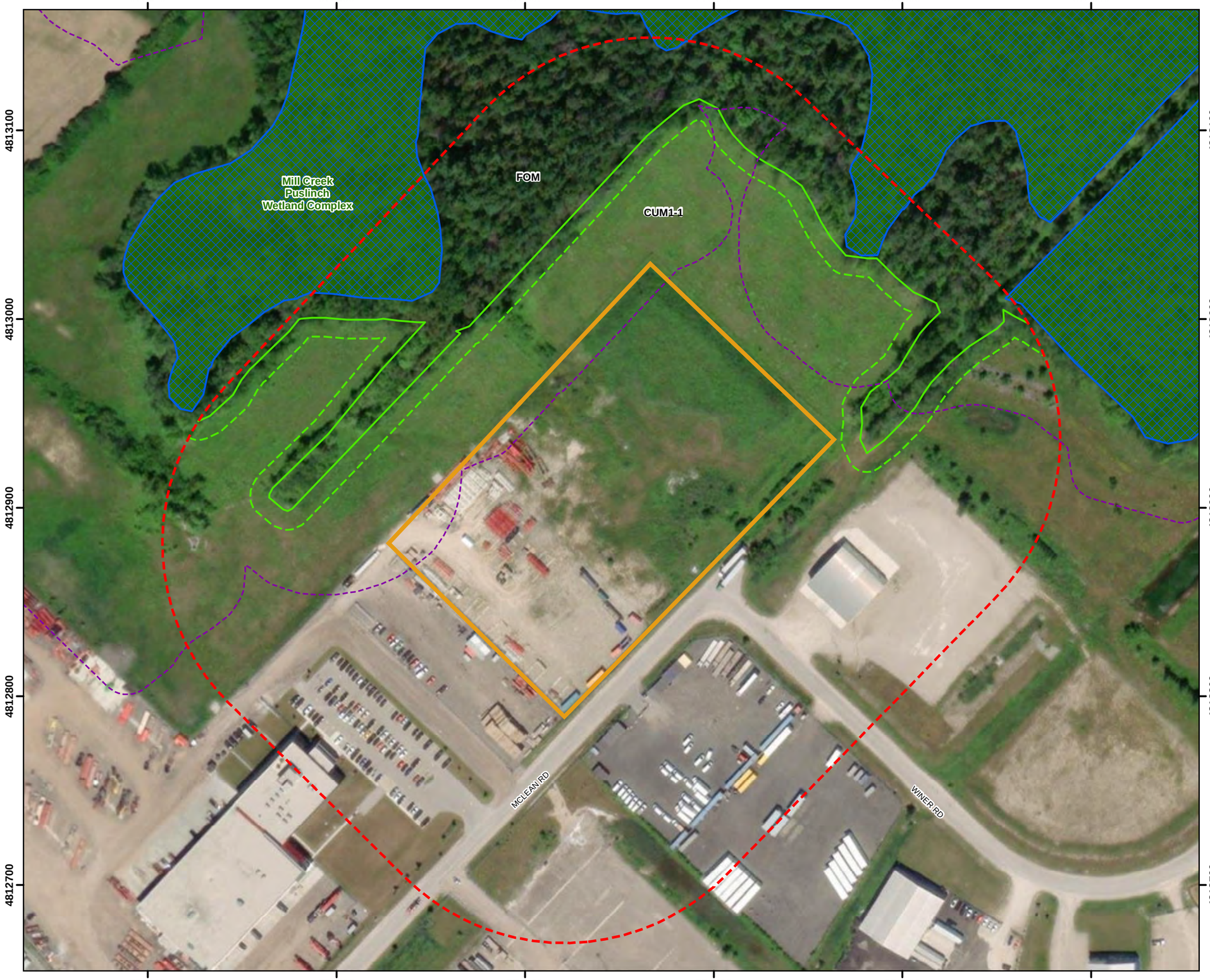
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Map 2

Scoped EIS, Puslinch Logistics Facility

Natural Features





Legend

- Study Area (120m)
- Subject Property
- Woodland Dripline
- Woodland Setback (10m)
- Provincially Significant Wetland (PSW)
- Wetland (GRCA)
- Regulation Limit (GRCA)

Ecological Land Classification (ELC)

(CUM1-1) Cultural Mineral Meadow Ecosite

(FOM) Mixed Forest Ecosite

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Project: 3370
Date: January 28, 2025

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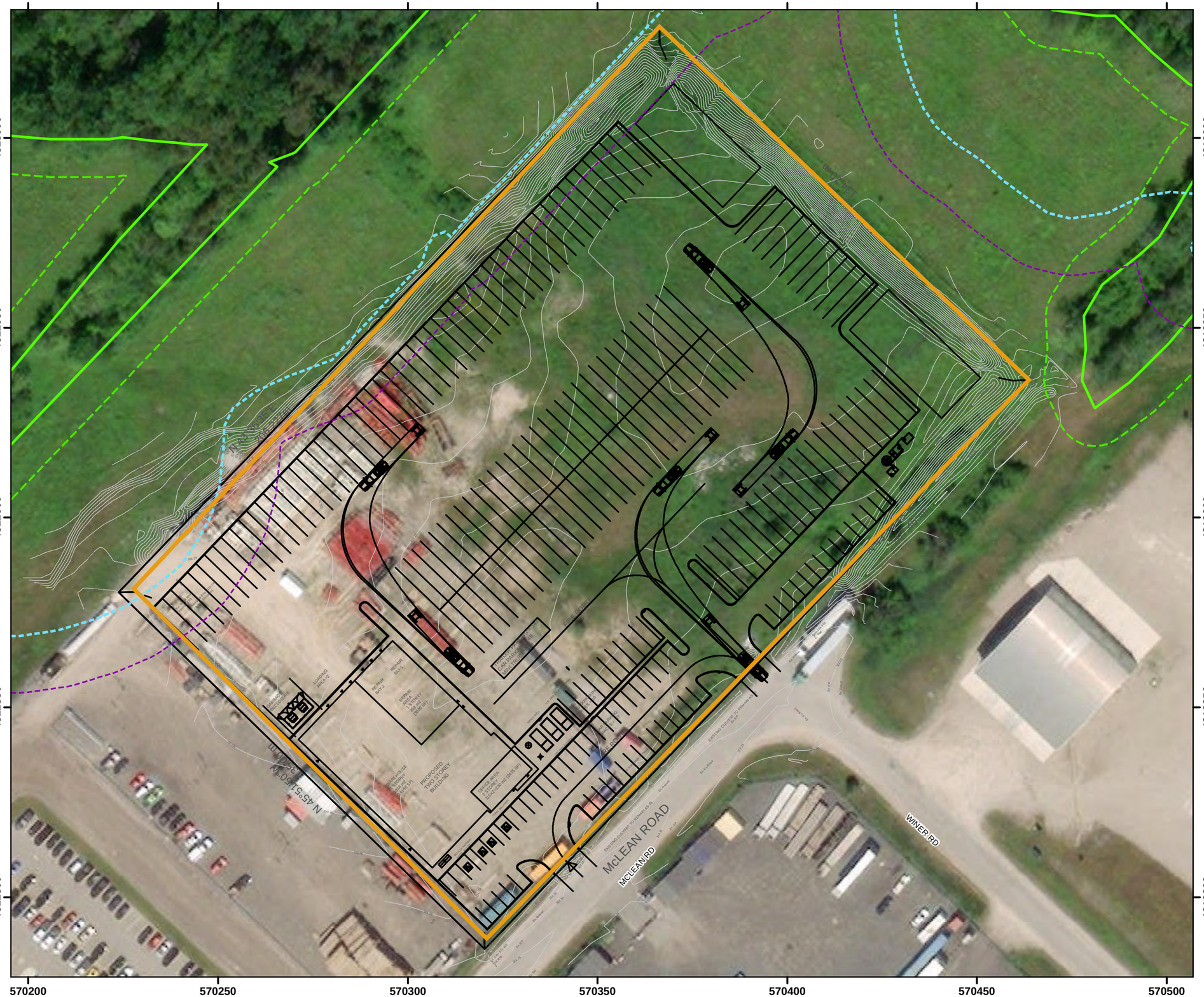
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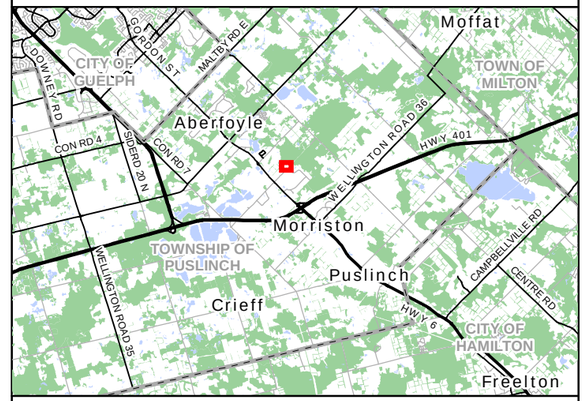
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Map 3

Scoped EIS, Puslinch Logistics Facility

Proposed Development



Legend

- Subject Property
- Proposed Site Plan
- Contours
- Woodland Dripline
- Woodland Setback (10m)
- Regulation Limit (GRCA)
- Floodplain (GRCA)

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Project: 3370
Date: January 28, 2025

NAD83 - UTM Zone 17
Size: 11x17"
1:1,000

N

0 10 20 30 40 50 60 Metres

Soil Identification & Characterization Report
7504 McLean Road,
Puslinch, Ontario

Report #8368 – BVD Puslinch
March 6, 2024

Prepared for:
BVD Real Estate Inc.
130 Delta Park Boulevard
Brampton, ON, L6T 5E7

Prepared by:
A & A Environmental Consultants Inc.
16 Young Street
Woodstock, ON N4S 3L4
Tel: 519-266-4680
Fax: 519-266-3666

A & A ENVIRONMENTAL CONSULTANTS INC.

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1.0 Soil Identification Characterization Report

A & A Environmental Consultants Inc. (A&A) was retained by BVD (the client) to conduct a due diligence Soil Investigation & Characterization Report (SICR) for the subject site at 7504 McLean Road, Puslinch, Ontario (the project area).

Table 1 – Project area Information

Municipal Address	7504 McLean Road, Puslinch, Ontario
Site Zoning	IND – Industrial
Area	The subject site has an area of 27,923 m^2
UTM (NAD 83)	Zone 17T; 570327m Easting and 4812908m Northing
Client	BVD Real Estate Inc.

The purpose of the Soil Identification & Characterization Report (SICR) is to confirm the Sampling and Analysis Plan (SAP) identified the quality of the soil in the Project Area (PA) within the APEC identified by in the SAP.

As it is detailed within the sampling analysis plan, this SICR is to confirm the quality of the approximate 24,000 m^3 of imported fill that was brought to the subject site. This cut/fill analysis can be seen in the SAP.

1.1 Areas of Potential Environmental Concern

The SAP and historical information identified the past impacts of the project area and potentially contaminating activities which were inferred to create areas of potential environmental concern.

Table 2 – APEC Table

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Ground water, Soil and/or Sediment)
#1	Entire Project Area	# 30 - Importation of Fill Material of Unknown Quality	On-site	Soil: Metals & ORPs, PHCs, VOCs, PAHs	Soil

Notes:
*- Potentially Contaminating Activities listed in Table 2, Appendix D, of the Ontario Regulation 153/04, as amended
VOCs- volatile organic compounds
PHCs- petroleum hydrocarbons F1-F4
VOCs- volatile organic compounds
PAHs- polycyclic aromatic hydrocarbons
OCPs- organochlorine and organophosphate pesticides

Each sampling location will be considered to include the APEC. The project area is identified as the entire area of the subject site. Based upon prior and current surveys of the subject site, it was determined that approximately 24,000 m^3 of imported fill was brought to the subject site. This cut/fill analysis can be seen in Appendix A.

1.2 Locations Subject to Sampling at the Project Area

The entire project area (27,923 m^2) was subject to in situ sampling to 3.1 meters below ground surface (mbgs).

1.3 APECs Subject to Sampling at the Project Area

Sampling at APEC #1 was completed on the top 3.01 mbgs of soil across the site. Eighty-eight boreholes were drilled across the subject site.

1.4 Investigation Method at the Project Area

1.4.1 General Method

Soil sampling was completed at the project area using a borehole drilling method. This was completed using an a Geoprobe 7822 equipped with 4" solid stem augers and standard 1.5 m long direct push rods, fitted with plastic macro-liners. All soil samples taken were *in situ* samples from undisturbed soil. No stockpiles or sediment samples were taken.

1.4.2 Drilling Program

The drilling program was arranged (including locates and health & safety requirements) by A&A Environmental Consultants. The drill and drill crew conducted the drilling of the eighty-eight boreholes within the APEC as described in the SAP prepared for the project area. Boreholes will be drilled to a depth of 3.06 mbgs (10 feet below ground surface (fbgs)). Composite soil samples will be collected every 0.76 m (2.5 feet).

A Quality Assurance/Quality Control (QA/QC) program was completed to ensure the integrity of the sampling methodology and analytical testing. Potential cross-contamination of samples will be reduced by using cleaned drilling and sampling equipment. Soil samples will be retrieved from the macro-liners using clean nitrile gloves and placed in new zip-top bags. Loose soil will be brushed from the auger flights between boreholes. The steel rods will be washed using a solution of Alconox and municipal tap water and rinsed with municipal tap water between samples. Soil samples were collected every 0.76m and field tested for organic vapours. The program included: Logging subsurface conditions and sampling of environmental media; Recording the results of field testing; Placing samples into labeled laboratory-supplied containers with unique IDs; Transporting samples to the laboratory in chilled coolers using chain-of-custody procedures; Using a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze the samples; and Requiring review of the analysis tables. To assess for analytical QC, 10% + 1 duplicate soil samples were taken. Duplicates were analyzed for the

associated COPCs. The number of samples, degree of agreement of duplicates, location of samples and remaining data investigated during the sampling program is considered sufficient to identify the worst-case contamination and to characterize the project area.

1.4.3 Soil Sampling Equipment

At each sampling location, the area was inspected for signs of previous interference or any unusual characteristics. The data was recorded on the field log sheets and any abnormalities noted. Samples were collected from the new plastic macro-liners. Alconox was used between samples to prevent any potential cross contamination. Soil samples were collected every 0.76m and field tested for organic vapours using a PID. The maximum vapour reading obtained after 15 seconds was recorded on the field logs which are attached in the appendices.

1.4.3.1 Geological Description of Samples

The borehole drilling easily identified the stratigraphy of soil at the project area. No staining, odours or discolouration of any soil was observed that might indicate impairment. The drilling program conducted for this study indicates the overburden deposits are generally consistent across the property.

No staining, odours or discolouration of any soil was observed that might indicate impairment. An excavator with operator was provided to advance test pits in APECs as described in the SAP prepared for the project area. Boreholes were advanced to a maximum depth of 3.01 mbgs.

1.4.4 Field Screening Equipment

Soil samples were collected every 0.76m and field tested for organic vapours using a RAE Systems, Type Ultra Rae 3000 PID which measures total VOCs. The maximum vapour reading obtained after 15 seconds was recorded on the field logs which are attached in the appendices. The PID measures VOC concentration with a range of 0 – 10,000ppm and a resolution of 0.025 ppm up to 100 ppm. The PID is calibrated at the service provider. During sampling, the PID was field calibrated with isobutylene with results marked on field sheets.

Select samples were submitted for laboratory analysis in accordance with the sampling plan and MECP Guidance.

1.4.4.1 Field Screening Measurements

At each sampling location, the area was inspected for signs of previous interference or any unusual characteristics. The data was recorded on the field log sheets and any abnormalities noted. Samples were collected from the excavator bucket at the selected depths using a spade which was cleaned with Alconox between uses to prevent any potential cross contamination. Soil samples were collected every 0.76m and field tested for organic vapours using a PID.

The highest VOC reading observed from the soil samples was +1000ppm. The readings were included in the test pit logs. No VOC concentrations were observed that required a change in the proposed sampling locations as identified in the SAP.

1.4.5 Ground Water Monitoring Well Installation

No groundwater monitoring wells were installed during the SAP.

1.4.5.1 Development of Ground Water Monitoring Wells

No groundwater monitoring wells were installed during the SAP.

1.4.5.2 Ground Water Field Measurement

No groundwater monitoring wells were installed during the SAP.

1.4.5.3 Ground Water Sampling

No groundwater monitoring wells were installed during the SAP.

1.4.6 Sediment Sampling

No sediment was encountered during the SAP.

1.4.7 Analytical Testing

In accordance with O. Reg 153/04 Section 47 (Analytical procedures) of O. Reg. 153/04, samples were placed into labeled laboratory-supplied containers and directly placed into ice chilled coolers with unique IDS using applicable chain-of-custody procedures. Samples were analyzed at AGAT Labs Inc., a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze the samples in accordance with "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the ministry and dated March 9, 2004, as amended.

To assess for analytical QC, one duplicate sample was taken per 10 samples submitted. Duplicates were analyzed for the associated COPCs during the ESA. The number of samples, degree of agreement of duplicates, location of samples and remaining data investigated during the sampling program is considered sufficient to identify the worst-case contamination and to characterize the project area.

1.4.8 Quality Control

Potential cross-contamination of samples was reduced by cleaning sampling equipment between locations. Soil samples were retrieved using disposable nitrile gloves and placed in zipper lock bags. Sampling equipment was washed using a solution of Alconox and municipal tap water and rinsed between samples.

A Quality Assurance/Quality Control (QA/QC) program was completed to ensure the integrity of the sampling methodology and analytical testing. The QA/QC program was used to provide representative samples, minimize the potential for cross contamination and reduce the potential for systematic bias. The program included: Logging subsurface conditions and sampling of environmental media; Recording the results of field testing; Use of clean, new PPE at each sampling location; Placing samples into labeled laboratory-supplied containers; Transporting samples to the laboratory in chilled coolers using chain-of-custody procedures; Using a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze

the samples; and Requiring review of the analysis tables. To assess for analytical QC, one duplicate sample was taken per 10 samples submitted. Duplicates were analyzed for the associated COPCs during the ESA. The number of samples, degree of agreement of duplicates, location of samples and remaining data investigated during the sampling program is considered sufficient to identify the worst-case contamination and to characterize the project area.

1.5 Stratigraphy

The drilling program easily identified the stratigraphy of soil at the project area. The drilling program conducted for this study indicates the overburden deposits are generally consistent across the property. All boreholes revealed underlain the surface to be characterized as follows:

- **Fill**
  - Fill material was encountered in all boreholes (BH24-1 to 5), extending to depths ranging from 1.5 to 2.0 m (mbgl). Fill material was loose to compact, consists of gravel and sand to gravelly silty sand, with trace clay, damp to moist and no odour. This fill comprised clayey silt to sandy silt/sand, moist to wet, firm to stiff in consistency, and compact. The data provided here pertaining to the fill thickness is confirmed at the borehole locations only and may vary between and beyond the boreholes.
- **Glacial Till Deposits**
  - Underneath the fill material, glacial till deposits were encountered in all the boreholes at depths ranging from 1.5 to 2.5 m (mbgl), extending to the maximum explored depth of 7.62 m (mbgl). These deposits consisted of gravelly silty sand trace clay to silty sand some gravel trace clay, occasionally rock fragments (grey, flaks), moist to wet, and compact to very dense.

1.6 Depth to Ground Water Table

Based on the hydrogeological investigation completed in 2023 by A&A, there was no groundwater within the depths of the soil to be sampled on the project area. Groundwater is

anticipated to be deeper than 3.01 mbgs. No groundwater monitoring wells were installed during the SAP. There were no fully saturated soil samples within the project area.

1.7 Soil Sampling Details

Sampling at APEC #1 (imported fill over the entire project area) was considered within the top 2.29 mbgs.

The following table summarizes the sampling details of the SAP with the sampling locations being depicted in figures in the appendices.

Table 3 – Summary of Soil & Groundwater Sampling

Proposed Sample Location	APECs	Sampling Frequency	Sampling Depth (mbgs)	Screen Interval	Sample Media	COPCs & # samples analyzed							Rationale
						PAH	Metals	Hydrides	PHC F1-F4	VOCs	pH/EC/SAR Sodium	# Samples	
BH-1 to BH-88	APEC 1	every 0.762 m	2.133 m	NA	Soil	x	x	x	x	x	x	1	Determine quality of soil in each borehole for APEC#1.
Total # soil samples												88	

NOTES: PHC – petroleum hydrocarbons, VOCs – volatile organic compounds, OCP – organochlorine pesticides
PAHs – polycyclic aromatic hydrocarbons

1.7.1 Number of Soil Samples Submitted for Analysis

Eighty-eight plus + eight duplicate soil samples were taken at locations and depths identified in the soil sampling and analysis plan. Twelve composite samples were submitted for Synthetic Precipitation Leaching Procedure. Samples for laboratory analysis were collected from the undisturbed soil at select depths of each borehole. The sampling locations identified the stratigraphy of the project area. All samples met the applicable site condition standards and the more stringent Table 1: Ceiling Values for Excess Soil Reuse.

1.7.2 Location and Depth of Soil Samples Submitted for Analysis

Soil samples were taken every 0.76m from the eighty-eight borehole at depths identified in the in the SAP. Boreholes were advanced to a maximum depth of 3.01 mbgs in APEC as required by the SAP. The sampling locations identified the stratigraphy of the project area.

1.7.3 Rationale for Parameters Groups Analyzed

All parameters analyzed were taken from the guidance document; Revised Reg 153/04, *List of Testing Requirements for Various Types of Industrial and Commercial Operations*. Contaminants of Potential Concern (COPCs) on the site include: Metals & other related parameters (ORPs), Base, Neutral & Acid Extractables (includes PAHs, OC Pesticides and phenols) petroleum hydrocarbons (PHCs), OC Pesticides (OCPs), and volatile organic compounds (VOCs).

1.7.4 Date of Sample Collection

The advancement of the borehole drilling was completed at the project area on January 14th, 2025, January 17th, 2025, January 20th, 2025, and January 21, 2025 as supervised by A&A. All samples were immediately placed in coolers with ice and transferred to a dedicated refrigerator for storage. Samples were shipped to the lab to be received one day after the drilling was completed on each day. A&A also submitted composite samples for analysis based on the requirement of a minimum of twelve SPLP samples.

1.7.5 Date of Analysis

Samples shipped to the lab to be received by January 15, 2025 were reported on January 23, 2025. Samples shipped to the lab to be received by January 16, 2025, were reported on January 27, 2025. Samples shipped to the lab to be received by January 17, 2025 were reported on January 27, 2025. Samples shipped to the lab to be received by January 22, 2025 were reported on January 30, 2025. Samples shipped to the lab, for the SPLPs to be received by February 6, 2025 were reported on February 18, 2025

1.7.6 Rationale for Parameters Groups Analyzed

All parameters analyzed were taken from the guidance document; Revised Reg 153/04, *List of Testing Requirements for Various Types of Industrial and Commercial Operations* COPCs on the site include; Metals & ORPs, Base, Neutral & Acid Extractables (includes PAHs, OCPs and phenols) PHCs, OCPs, and VOCs.

1.7.7 Leachate Sampling

Twelve composite samples were submitted for Synthetic Precipitation Leaching Procedure at AGAT Labs Inc., a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze the samples in accordance with "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the ministry and dated March 9, 2004, as amended. All leachate samples met the applicable site condition standards and the more stringent Table 1: Ceiling Values for Excess Soil Reuse.

1.8 Results of Analysis

The results of the analysis resulted in exceedances in the soil for the following samples:

- BH24-3 @ 5-7.5 fbgl for zinc (678 µg/g result for 290 µg/g guideline value);
- BH25-5 @5-10 fbgl for zinc (302 µg/g result for 290 µg/g guideline value);
- DUP 8 (duplicate of BH25-8 @7.5-10 fbgl sample) for zinc (304 µg/g result for 290 µg/g guideline value);

- BH25-10 @7.5-10 fbgl for zinc (308 µg/g result for 290 µg/g guideline value);
- DUP 10 (duplicate sample of BH25-10 @7.5-10 fbgl) for zinc (360 µg/g result for 290 µg/g guideline value);
- BH25-13 @7.5-10 fbgl for electrical conductivity (0.836 mS/cm result for 0.57 mS/cm guideline value);
- BH25-19 @2.5-5 fbgl for electrical conductivity (0.802 mS/cm result for 0.57 mS/cm guideline value);
- BH25-21 @5-10 fbgl; for PHC F4 Fraction (439 µg/g result for 120 µg/g guideline value);
- DUP 25-21 (Duplicate sample of BH25-21 @5-10 fbgl) for PHC F4 Fraction (397 µg/g result for 120 µg/g guideline value);
- BH25-23 @5-7.5 fbgl for zinc (393 µg/g result for 290 µg/g guideline value);
- BH25-59 @0-2.5 fbgl for lead (130 µg/g result for 120 µg/g guideline value) and zinc (349 µg/g result for 290 µg/g guideline value);
- BH25-65 @5-7.5 fbgl for zinc (336 µg/g result for 290 µg/g guideline value);
- BH25-69 @7.5-10 fbgl for zinc (341 µg/g result for 290 µg/g guideline value);
- BH25-70 @5-7.5 fbgl for electrical conductivity (0.802 mS/cm result for 0.57 mS/cm guideline value) and Sodium Adsorption Ratio (SAR) (3.07 result for 2.4 guideline value);
- BH25-73 @5-7.5 fbgl for zinc (292 µg/g result for 290 µg/g guideline value);
- BH25-74 @5-7.5 fbgl for zinc (350 µg/g result for 290 µg/g guideline value);
- BH25-75 @5-7.5 fbgl for zinc (340 µg/g result for 290 µg/g guideline value);
- BH25-78 @5-7.5 fbgl for electrical conductivity (0.916 mS/cm result for 0.57 mS/cm guideline value);
- BH25-81 @7.5-10 fbgl for zinc (342 µg/g result for 290 µg/g guideline value);
- BH25-82 @5-10 fbgl for zinc (329 µg/g result for 290 µg/g guideline value);
- BH25-86 @7.5-10 fbgl for zinc (315 µg/g result for 290 µg/g guideline value);
- BH25-87 @7.5-10 fbgl for zinc (335 µg/g result for 290 µg/g guideline value);

All other samples were less than the guideline values for all parameters.

Synthetic Precipitation Leaching Procedure results met Table 1 SCS where applicable.

A summary of all analysis and the laboratory certificates of analysis for all samples analyzed are attached in the appendices. A table of maximum concentrations analyzed for all COPC is presented below.

Table 4 – Maximum Concentrations of COPCs Including SPLP Analysis in Soil

Contaminant Name	Maximum Concentration	T1 S RPI/ICC	Unit	Location
PAHs (Soil)				
Naphthalene	<0.05	0.09	ug/g	all samples
Acenaphthylene	<0.05	0.093	ug/g	all samples
Acenaphthene	<0.05	0.072	ug/g	all samples
Fluorene	0.06	0.12	ug/g	BH25-55@5-7.5
Phenanthrene	0.29	0.69	ug/g	BH25-55@5-7.5
Anthracene	0.1	0.16	ug/g	BH25-10@5-7.5
Fluoranthene	0.37	0.56	ug/g	BH25-20@5-7.5
Pyrene	0.27	1	ug/g	BH25-20@5-7.5
Benzo(a)anthracene	0.11	0.36	ug/g	BH25-20@5-7.5
Chrysene	0.13	2.8	ug/g	BH25-20@5-7.5
Benzo(b)fluoranthene	0.20	0.47	ug/g	DUP 25-21
Benzo(k)fluoranthene	0.08	0.48	ug/g	DUP 25-21
Benzo(a)pyrene	0.13	0.3	ug/g	DUP 25-21
Indeno(1,2,3-cd)pyrene	0.08	0.23	ug/g	DUP 25-21
Dibenz(a,h)anthracene	<0.05	0.10	ug/g	all samples
Benzo(g,h,i)perylene	0.130	0.68	ug/g	DUP 25-21
2-and 1-methyl Naphthalene	<0.05	0.59	ug/g	all samples
Naphthalene-d8	<0.1	77	ug/g	all samples
Naphthalene-d8	<0.1	97	ug/g	all samples
Acridine-d9	<0.1	130	ug/g	all samples
Terphenyl-d14	<0.1	135	ug/g	all samples
Metals & ORPs (Soil)				
Antimony	<0.8	1.3	ug/g	all samples
Arsenic	12.0	18	ug/g	BH25-36@2.5-5
Barium	109.0	220	ug/g	BH25-13@2.5-5
Beryllium	1.3	2.5	ug/g	BH25-38@0-2.5
Boron	27.0	36	ug/g	BH 25-60@0-2.5
Boron (Hot Water Soluble)	1.9	NA	ug/g	BH 25-60@0-2.5
Cadmium	1.0	1.2	ug/g	BH25-69@7.5-10

Contaminant Name	Maximum Concentration	T1 S RPI/ICC	Unit	Location
Chromium	32.0	70	ug/g	BH25-38@0-2.5
Cobalt	18.5	21	ug/g	BH25-38@0-2.5
Copper	48.8	92	ug/g	BH25-17@0-2.5
Lead	130.0	120	ug/g	BH25-59@0-2.5
Molybdenum	1.3	2	ug/g	BH25-17@0-2.5
Nickel	39.0	82	ug/g	BH25-38@0-2.5
Selenium	<0.8	1.5	ug/g	all samples
Silver	<0.5	0.5	ug/g	all samples
Thallium	<0.5	1	ug/g	all samples
Uranium	1.47	2.5	ug/g	BH25-8@7.5-10
Vanadium	39.5	86	ug/g	BH25-39@0-2.5
Zinc	678.0	290	ug/g	BH25-3@5-7.5
Chromium, Hexavalent	<0.2	0.66	ug/g	all samples
Cyanide, WAD	<0.04	0.051	ug/g	all samples
Mercury	0.18	0.27	ug/g	25-59 @ 0-2.5
Electrical Conductivity (2:1)	0.916	0.57	mS/cm	BH25-78@5-7.5
Sodium Adsorption Ratio (2:1) (Calc.)	3.07	2.4	N/A	BH25-70@5-7.5
pH, 2:1 CaCl2 Extraction	NA		pH Units	BH25-60@0-2.5
PHCs F1 - F4 (with PAHs and VOC) (Soil)				
F1 (C6 - C10)	<5	25	ug/g	all samples
F1 (C6 to C10) minus BTEX	<5	25	ug/g	all samples
F2 (C10 to C16)	<10	10	ug/g	all samples
F2 (C10 to C16) minus Naphthalene	<10		ug/g	all samples
F3 (C16 to C34)	235	240	ug/g	BH25-21@5-10
F4 (C34 to C50)	439	120	ug/g	BH25-21@5-10
F3 (C16 to C34) minus PAHs	234		ug/g	BH25-21@5-10
Gravimetric Heavy Hydrocarbons	NA	120	ug/g	all samples
VOCs (with PHC) (Soil)				
Dichlorodifluoromethane	<0.05	0.05	ug/g	all samples
Vinyl Chloride	<0.02	0.02	ug/g	all samples
Bromomethane	<0.05	0.05	ug/g	all samples
Trichlorofluoromethane	<0.05	0.25	ug/g	all samples
Acetone	<0.50	0.5	ug/g	all samples
1,1-Dichloroethylene	<0.05	0.05	ug/g	all samples
Methylene Chloride	<0.05	0.05	ug/g	all samples
Trans- 1,2-Dichloroethylene	<0.05	0.05	ug/g	all samples
Methyl tert-butyl Ether	<0.05	0.05	ug/g	all samples
1,1-Dichloroethane	<0.02	0.05	ug/g	all samples
Methyl Ethyl Ketone	<0.50	0.5	ug/g	all samples

Contaminant Name	Maximum Concentration	T1 S RPI/ICC	Unit	Location
Cis- 1,2-Dichloroethylene	<0.02	0.05	ug/g	all samples
Chloroform	<0.04	0.05	ug/g	all samples
1,2-Dichloroethane	<0.03	0.05	ug/g	all samples
1,1,1-Trichloroethane	<0.05	0.05	ug/g	all samples
Carbon Tetrachloride	<0.05	0.05	ug/g	all samples
Benzene	<0.02	0.02	ug/g	all samples
1,2-Dichloropropane	<0.03	0.05	ug/g	all samples
Trichloroethylene	<0.03	0.05	ug/g	all samples
Bromodichloromethane	<0.05	0.05	ug/g	all samples
Methyl Isobutyl Ketone	<0.50	0.5	ug/g	all samples
1,1,2-Trichloroethane	<0.04	0.05	ug/g	all samples
Toluene	<0.05	0.2	ug/g	all samples
Dibromochloromethane	<0.05	0.05	ug/g	all samples
Ethylene Dibromide	<0.04	0.05	ug/g	all samples
Tetrachloroethylene	<0.05	0.05	ug/g	all samples
1,1,1,2-Tetrachloroethane	<0.04	0.05	ug/g	all samples
Chlorobenzene	<0.05	0.05	ug/g	all samples
Ethylbenzene	<0.05	0.05	ug/g	all samples
m & p-Xylene	<0.05		ug/g	all samples
Bromoform	<0.05	0.05	ug/g	all samples
Styrene	<0.05	0.05	ug/g	all samples
1,1,2,2-Tetrachloroethane	<0.05	0.05	ug/g	all samples
o-Xylene	<0.05		ug/g	all samples
1,3-Dichlorobenzene	<0.05	0.05	ug/g	all samples
1,4-Dichlorobenzene	<0.05	0.05	ug/g	all samples
1,2-Dichlorobenzene	<0.05	0.05	ug/g	all samples
Xylenes (Total)	<0.05	0.05	ug/g	all samples
1,3-Dichloropropene (Cis + Trans)	<0.05	0.05	ug/g	all samples
n-Hexane	<0.05	0.05	ug/g	all samples
O. Reg. 406/19 - SPLP BNA				
Bis(2-chloroethyl)ether Leachate	<0.5	0.5	ug/L	all samples
Bis(2-chloroisopropyl)ether Leachate	<0.5	0.5	ug/L	all samples
p-Chloroaniline Leachate	<1.0	0.5	ug/L	all samples
3,3'-Dichlorobenzidine Leachate	<0.5	1.0	ug/L	all samples
Diethyl phthalate Leachate	<0.5	0.5	ug/L	all samples
Dimethylphthalate Leachate	<0.5	0.5	ug/L	all samples
2,4-Dinitrophenol Leachate	<10	10	ug/L	all samples
2,4-Dinitrotoluene Leachate	<0.5	0.5	ug/L	all samples
2,6-Dinitrotoluene Leachate	<0.5	0.5	ug/L	all samples

Contaminant Name	Maximum Concentration	T1 S RPI/ICC	Unit	Location
Dinitrotoluene (2,4 & 2,6) Leachate	<0.5	0.5	ug/L	all samples
2,4,6-Trichlorophenol Leachate	<0.2	0.75	ug/L	all samples
O. Reg. 406/19 SPLP Metals				
Antimony Leachate	<0.6	1.3	ug/L	COMP 2
Arsenic Leachate	<5	18	ug/L	all samples
Barium Leachate	<100	220	ug/L	all samples
Beryllium Leachate	<0.8	2.5	ug/L	all samples
Boron Leachate	<500	36	ug/L	all samples
Cadmium Leachate	<0.20		ug/L	all samples
Chromium Leachate	<10	1.2	ug/L	all samples
Cobalt Leachate	<0.3	70	ug/L	all samples
Copper Leachate	<6.9	21	ug/L	all samples
Lead Leachate	2.1	92	ug/L	all samples
Molybdenum Leachate	<1.5	120	ug/L	all samples
Nickel Leachate	<10	2	ug/L	all samples
Selenium Leachate	<5.0	82	ug/L	all samples
Silver Leachate	<0.10	1.5	ug/L	all samples
Thallium Leachate	<0.5	0.5	ug/L	all samples
Uranium Leachate	<2	1	ug/L	all samples
Vanadium Leachate	10.2	2.5	ug/L	BH25-70
Zinc Leachate	<20	86	ug/L	all samples
O. Reg. 406/19 - SPLP VOCs				
1,1,1,2-Tetrachloroethane Leachate	<0.10	0.05	ug/L	all samples
1,1,2,2-Tetrachloroethane Leachate	<0.10	0.05	ug/L	all samples
1,1,2-Trichloroethane Leachate	<0.20	0.05	ug/L	all samples
1,1-Dichloroethane Leachate	<0.30	0.05	ug/L	all samples
1,1-Dichloroethylene Leachate	<0.30	0.05	ug/L	all samples
1,2-Dichlorobenzene Leachate	<0.10	0.05	ug/L	all samples
1,2-Dichloroethane Leachate	<0.20	0.05	ug/L	all samples
1,2-Dichloropropane Leachate	<0.20	0.05	ug/L	all samples
1,3-Dichloropropene Total Leachate	<0.30	0.05	ug/L	all samples
1,4-Dichlorobenzene Leachate	<0.10	0.05	ug/L	all samples
Bromomethane Leachate	<0.20	0.05	ug/L	all samples
Carbon Tetrachloride Leachate	<0.20	0.05	ug/L	all samples
Chloroform Leachate	<0.20	0.05	ug/L	all samples
Cis 1,2-Dichloroethylene Leachate	<0.20	0.05	ug/L	all samples
Ethylene Dibromide Leachate	<0.10	0.05	ug/L	all samples
Tetrachloroethylene Leachate	<0.20	0.05	ug/L	all samples
Trans 1,2-Dichloroethylene Leachate	<0.20	0.05	ug/L	all samples

Contaminant Name	Maximum Concentration	T1 S RPI/ICC	Unit	Location
Trichloroethylene Leachate	<0.20	0.05	ug/L	all samples

1.10 Soil Disposal

The intent is to keep all soil remaining on site. no soil will be removed from the subject site. the site will be redeveloped for a commercial trucking facility.

1.10.1 Delineation of Contaminated Soil

Based upon the number of samples found during the completion of the SAP, the entire site had been covered with the SAP. No delineation is required as the areas impacted have been identified. The project site will undergo a risk assessment in order to satisfy the requirements of the township of Puslinch.

1.11 Background Information & Site Alteration Permit Application

Prior to the soil investigation on the subject site, exploratory investigations were completed for site plan approval. In 2024, A&A completed a hydrogeological investigation and a geotechnical investigation concurrently on site. During these investigations, 5 boreholes were drilled on site in order to understand the geotechnical characteristics of the current soil conditions on site. this included the soil conditions of the imported fill as well as the native soil. During the borehole drilling, three monitoring wells were installed on site for the hydrogeological investigation. These three monitoring wells are in addition to the one existing monitoring well found on site named EMW-1. The borehole map from the geotechnical investigation and the monitoring well map from the hydrogeological investigation can be found in Figure 7 and Figure 8, respectively. These will outline the locations of the exploratory boreholes and monitoring wells. During these investigations, analysis was completed to gain background information on the environmental condition of the soil on the site. This would give us the basis for the completion of the sampling and analysis plan for the soil investigation and characterisation report.

Using the O. Reg. 153/04 guidelines, six soil samples were submitted to the laboratory from the five boreholes drilled for the geotechnical investigation, including one duplicate sample. The analysis was for O. Reg 153 metals, volatile organic compounds, petroleum hydrocarbons, electrical conductively, and pH. The results of the analysis are compared to O. Reg. 406/19 – table 1- RPIC. The exceedances in the soil are the following:

- BH1 @0-2.5 fbgl and Duplicate (BH1) for selenium;
- BH2 @0-2.5 fbgl for electrical conductivity, PHC F3, PHC F4;
- BH3 @2.5-5 fbgl for selenium, and electrical conductivity;
- BH3 @5-7.5 fbgl for selenium;

The full certificate of analysis can be found in Appendix D. Also, during these investigations, groundwater was sampled from the three newly installed wells and one existing well on site. The analysis was for O. Reg 153 metals, volatile organic compounds, petroleum hydrocarbons, electrical conductively, and pH. The results of the analysis are compared to O. Reg. Table 1 for Groundwater. The exceedances in the groundwater are as follows:

- MW-2 and Duplicate (for MW-2) for copper;
- MW-3 for Cobalt;

The full certificate of analysis can be found in Appendix D. A few metals exceeded the detection limit but were generally less than 40% of the Table 1 SCS and are considered to be naturally occurring.

From the background information found from the preliminary soil samples during the exploratory investigations, A&A then completed and carried out the SAP. From this, contamination was found from the imported fill. In order to satisfy the township of Puslinch, a risk assessment is to be completed on site. This will allow for the impacted, imported soil to remain on site as well as reduce the risk of the contamination affecting the conditions on the subject site.

The desired outcome of these investigations and the upcoming risk assessment is to obtain a site alteration permit from the township of Puslinch. The site alteration permit requires a site to have

no impacted soil. Through this SICP, it is understood that a RA is required in order to satisfy the Township which will then allow for a site alteration permit on the basis that the RA mitigates risk and the impacted, imported soil can remain on the subject site.

2.0 CONCLUSIONS AND RECOMMENDATIONS

2.1 Conclusions

The results of the analysis resulted in exceedances in the soil for the following samples:

- BH25-3@5-75 for zinc (678 µg/g result for 290 µg/g guideline value);
- BH25-5@5-10 for zinc (302 µg/g result for 290 µg/g guideline value);
- DUP 8 (duplicate of BH25-8@7.5-10 sample) for zinc (304 µg/g result for 290 µg/g guideline value);
- BH25-10@7.5-10 for zinc (308 µg/g result for 290 µg/g guideline value);
- DUP 10 (duplicate sample of BH25-10@7.5-10) for zinc (360 µg/g result for 290 µg/g guideline value);
- BH25-13@7.5-10 for electrical conductivity (0.836 mS/cm result for 0.57 mS/cm guideline value);
- BH25-19@2.5-5 for electrical conductivity (0.802 mS/cm result for 0.57 mS/cm guideline value);
- BH25-21@5-10; for PHC F4 Fraction (439 µg/g result for 120 µg/g guideline value);
- DUP 25-21 (Duplicate sample of BH25-21@5-10) for PHC F4 Fraction (397 µg/g result for 120 µg/g guideline value);
- BH25-23@5-7.5 for zinc (393 µg/g result for 290 µg/g guideline value);
- BH25-59@0-2.5 for lead (130 µg/g result for 120 µg/g guideline value) and zinc (349 µg/g result for 290 µg/g guideline value);
- BH25-65@5-7.5 for zinc (336 µg/g result for 290 µg/g guideline value);
- BH25-69@7.5-10 for zinc (341 µg/g result for 290 µg/g guideline value);
- BH25-70@5-7.5 for electrical conductivity (0.802 mS/cm result for 0.57 mS/cm guideline value) and Sodium Adsorption Ratio (SAR) (3.07 result for 2.4 guideline value);
- BH25-73@5-7.5 for zinc (292 µg/g result for 290 µg/g guideline value);
- BH25-74@5-7.5 for zinc (350 µg/g result for 290 µg/g guideline value);
- BH25-75@5-7.5 for zinc (340 µg/g result for 290 µg/g guideline value);

- BH25-78@5-7.5 for electrical conductivity (0.916 mS/cm result for 0.57 mS/cm guideline value);
- BH25-81@7.5-10 for zinc (342 µg/g result for 290 µg/g guideline value);
- BH25-82@5-10 for zinc (329 µg/g result for 290 µg/g guideline value);
- BH25-86@7.5-10 for zinc (315 µg/g result for 290 µg/g guideline value);
- BH25-87@7.5-10 for zinc (335 µg/g result for 290 µg/g guideline value);

All other samples were less than the guideline values for all parameters.

Due to the of contamination on the subject site, and the desire to keep all soil on the subject site, a risk assessment is to be completed to mitigate the risk to health and human life.

2.2 Recommendations

The soil is to remain on site and be used for the redevelopment of the subject site. In order to satisfy the township of Puslinch, a risk assessment (RA) will be completed on the site. This will allow for the imported fill to remain on the subject site and be used for redevelopment, there be no impact on health or human life as the risk will be mitigated by the risk assessment, for a site alteration permit to go ahead in order to allow for the redevelopment of the subject site.

SIGNED:



Thomas Demers, P.Eng., QP_{ESA}.
Senior Project Manager

SIGNED:



Dr. Ali A. Rasoul, Ph.D., EP, P. Geo., Q.P.
Senior Environmental Consultant

3.0 QUALIFICATIONS OF ASSESSORS

A & A Environmental Consultants Inc. is a multi-disciplinary environmental consulting firm offering consulting services in the fields of site assessments (Phase I-III), cleanups, water resource studies, aggregate permitting, landfill design and monitoring, geotechnical studies, air quality studies, designated substances surveys and environmental impact studies. A&A has more than 20 years of experience in environmental consulting in the province of Ontario, Alberta, Saskatchewan, British Columbia and have preformed thousands of projects from small scale Assessment of Property Uses to large scale landfill design, hydro-geological studies and groundwater management plans. We have a number of seniors, experienced staff who consult in a variety of disciplines and offer our clients expert knowledge in both the technical aspects of a project and the environmental regulations applicable.

Dr. Ali A. Rasoul, Ph.D., EP, P. Geo., QP

Principal Consultant

The report was reviewed by Dr. Ali A. Rasoul, a Principal Consultant with A&A. He has over 20 years experience in his field. He has completed hundreds of environmental projects including Phase I/II/III ESAs, mould assessments, hydrogeological investigations, designated substances surveys and water management plans. He is a licensed Professional Geoscientist with the Association of Professional Geoscientists of Ontario and a licensed Well Technician in the Province of Ontario (Ministry of the Environment, Conservation and Parks). He is also a licensed Professional Geoscientist in Alberta, Saskatchewan and British Columbia. Dr. Rasoul is registered as a “Qualified Person” for conducting ESAs as defined under Ontario Regulation 153/04 and 511/09.

4.0 LIMITATIONS

The report was prepared for the exclusive use of the client. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from A&A will be required. With respect to third parties, A&A has no liability or responsibility for losses of any kind whatsoever including direct or consequential financial effects on transactions or property values, or requirement for follow-up actions and costs.

The investigation undertaken by A&A with respect to this report and any conclusions or recommendations made in this report reflect A&A's judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observations of the site, subsurface investigations at discrete locations and depths, and specific analysis of chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site, which were unavailable for direct investigation, subsurface locations, which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. A&A has used professional judgment in analysing this information and formulating these conclusions.

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

APPENDIX A – Analysis Results Tables

Table 5 – Summary of Analysis for Soil Samples

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
Parameter Name	**Unit**	**RDL**	**G / S**	**6459609**	**6459610**	**6459611**	**6459612**	**6459613**	**6459614**	**6459615**	**6459616**	**6459617**	**6459618**	**6459619**	**6459620**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	3	4	5	6	6	4	4	4	4	6	4	4
Barium	µg/g	2	220	17.8	16.2	17.8	21.4	21.5	21.4	23.9	20.3	22.8	30.3	20.5	19.2
Beryllium	µg/g	0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	5	36	6	9	9	8	10	9	9	8	9	11	8	7
Boron (Hot Water Soluble)	µg/g	0.1	NA	<0.10	0.2	0.11	<0.10	0.22	0.25	<0.10	<0.10	<0.10	0.17	<0.10	<0.10
Cadmium	µg/g	0.5	1.2	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	0.5	0.6	<0.5	0.7	0.7
Chromium	µg/g	5	70	8	11	8	10	9	9	8	7	8	14	8	8
Cobalt	µg/g	0.8	21	3.4	4.9	4.5	4.8	5.4	4.1	4.1	3.5	3.8	6.4	3.9	4.3
Copper	µg/g	1	92	10.5	12.4	25.5	24.5	17.6	14.2	13.4	12.9	13.4	18.6	14.1	14.9
Lead	µg/g	1	120	13	11	25	20	28	22	26	25	22	21	26	30
Molybdenum	µg/g	0.5	2	0.8	<0.5	0.6	<0.5	0.6	0.7	0.5	<0.5	<0.5	1	<0.5	<0.5
Nickel	µg/g	1	82	5	8	7	8	9	6	6	5	5	12	6	7
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	<0.50	0.53	0.5	<0.50	0.54	<0.50	0.5	1.47	<0.50	0.57	0.54	0.52
Vanadium	µg/g	2	86	19	20.3	16.2	18.8	17.7	16.4	16.3	15.6	16.3	26.5	15.5	15.8
Zinc	µg/g	5	290	94	87	678	187	302	215	249	264	304	166	308	360

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.144	0.166	0.147	0.191	0.123	0.345	0.121	0.126	0.085	0.211	0.106	0.145
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.725	0.708	1.59	1.71	1.45	0.554	0.859	0.279	0.206	0.691	1.29	1.23
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.7	7.66	7.64	7.63	7.61	10.3	7.53	8.2	7.59	7.86	7.62	7.79
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		70	70	65	70	65	70	65	80	70	65	65	70
Acridine-d9	%	1		60	110	85	115	85	85	105	75	100	105	85	95
Terphenyl-d14	%	1		70	75	80	75	65	75	70	80	70	65	70	80
Moisture Content	%	0.1		9.4	7.4	9.8	8	8.5	9.2	8.6	8	8	9.8	8	8
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		96	100	91	96	93	92	94	98	95	94	92	98
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Exceeds Guideline	Within Guideline													
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		9.4	7.4	9.8	8	8.5	9.2	8.6	8	8	9.8	8	8
Terphenyl	%	1		98	100	87	78	98	80	81	95	74	99	76	86
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10	DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		96	100	91	96	93	92	94	98	95	94	92	98
4-Bromofluorobenzene	% Recovery	1		100	98	94	92	90	96	92	92	96	93	94	92
Moisture Content	%	0.1		9.4	7.4	9.8	8	8.5	9.2	8.6	8	8	9.8	8	8

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
Parameter Name	**Unit**	**RDL**	**G / S**	**6459621**	**6459622**	**6459623**	**6459624**	**6459625**	**6459626**	**6459627**	**6461794**	**6461795**	**6461796**	**6461797**	**6461798**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	4	4	5	6	3	4	4	9	4	5	9	3
Barium	µg/g	2	220	19.4	19.3	28.2	109	25.1	48	36.2	75.3	21.8	20.6	56.8	22.4
Beryllium	µg/g	0.5	2.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	1	<0.5
Boron	µg/g	5	36	9	9	14	18	9	14	11	15	9	8	17	9
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.15	<0.10	0.78	1.29	0.13	0.23	0.26	0.46	<0.10	<0.10	0.73	0.59
Cadmium	µg/g	0.5	1.2	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.8	0.7	<0.5	<0.5
Chromium	µg/g	5	70	8	8	16	24	10	13	11	15	8	7	24	11
Cobalt	µg/g	0.8	21	4.3	4.1	7.6	12.3	4.5	6.3	4.6	9	3.9	3.9	14.4	4.7
Copper	µg/g	1	92	15.2	14.9	20.4	24.2	17.7	18.5	15.7	48.8	16.5	16.8	39.8	12.8
Lead	µg/g	1	120	27	27	18	13	28	23	29	72	29	27	13	15
Molybdenum	µg/g	0.5	2	0.5	<0.5	0.8	0.9	<0.5	0.7	0.6	1.3	<0.5	<0.5	0.7	0.6
Nickel	µg/g	1	82	7	6	15	25	10	14	10	16	7	7	30	10
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	<0.50	0.5	0.58	0.65	<0.50	0.52	0.52	<0.50	<0.50	<0.50	0.6	<0.50
Vanadium	µg/g	2	86	15.9	16.7	28.7	31.3	17.6	21.8	17.1	22.3	13.8	12.6	29.7	16.7
Zinc	µg/g	5	290	202	258	150	74	196	159	217	232	264	253	88	108

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.105	0.135	0.158	0.836	0.157	0.178	0.152	0.203	0.213	0.145	0.802	0.137
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.503	0.612	0.747	2.11	1.05	0.359	0.487	0.328	0.412	0.394	1.13	0.802
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.31	6.23	7.28	7.44	7.41	7.45	7.48	8.1	7.44	7.15	7.3	7.1
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		70	75	80	65	85	65	70	65	65	55	70	60
Acridine-d9	%	1		75	65	115	95	105	100	100	115	115	105	100	85
Terphenyl-d14	%	1		75	85	80	75	95	85	80	125	105	120	100	105
Moisture Content	%	0.1		9.2	9.2	8.2	9.6	6.6	11.1	7.9	11.3	8.6	8.2	7.8	8.1
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		93	96	95	98	95	94	97	102	100	97	99	91

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	74
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		9.2	9.2	8.2	9.6	6.6	11.1	7.9	11.3	8.6	8.2	7.8	8.1
Terphenyl	%	1		83	84	83	96	89	75	98	92	88	99	80	98
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T238982	25T239421	25T239421	25T239421	25T239421	25T239421
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5	BH25-17 @ 0-2.5	BH25-18 @ 7.5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		93	96	95	98	95	94	97	102	100	97	99	91
4-Bromofluorobenzene	% Recovery	1		97	92	94	90	92	91	101	80	73	75	74	74
Moisture Content	%	0.1		9.2	9.2	8.2	9.6	6.6	11.1	7.9	11.3	8.6	8.2	7.8	8.1

Exceeds Guideline	Within Guideline													
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
Parameter Name	**Unit**	**RDL**	**G / S**	**6461799**	**6461800**	**6461801**	**6461802**	**6461803**	**6461804**	**6463158**	**6463162**	**6463163**	**6463164**	**6463165**	**6463166**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	3	3	4	4	4	7	4	4	4	4	5	7
Barium	µg/g	2	220	20.1	17.8	19.8	20.7	20.5	46.7	19.5	21.5	20.1	19.1	47	37.2
Beryllium	µg/g	0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.5	0.6
Boron	µg/g	5	36	7	8	9	9	9	9	6	7	6	7	18	18
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.46	0.32	0.13	<0.10	0.15	0.16	<0.10	0.15	0.25	0.18	1.84	0.49
Cadmium	µg/g	0.5	1.2	<0.5	<0.5	0.5	0.7	0.7	<0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5
Chromium	µg/g	5	70	8	8	8	9	8	17	7	8	7	7	16	20
Cobalt	µg/g	0.8	21	3.4	3.3	4.3	4.8	3.7	7.6	3.5	4	3.8	4.1	7.7	10
Copper	µg/g	1	92	14.5	14.7	15.9	20.6	16.7	25.4	16	15.6	15.8	17.5	22.3	46.7
Lead	µg/g	1	120	52	25	26	25	23	40	30	27	27	30	9	11
Molybdenum	µg/g	0.5	2	0.9	0.7	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.8	0.7
Nickel	µg/g	1	82	7	6	8	8	7	17	6	7	7	7	16	21
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50	1.09	0.57
Vanadium	µg/g	2	86	17.5	15.1	13	14	12.6	27.4	11.5	12.9	12.9	12.9	21.3	26.2
Zinc	µg/g	5	290	137	144	217	258	393	279	233	222	184	288	77	81

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.217	0.197	0.162	0.146	0.156	0.187	0.486	0.12	0.153	0.102	0.233	0.233
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.495	0.562	1.87	1.04	0.63	0.54	0.991	0.618	0.437	0.562	0.586	0.477
pH, 2:1 CaCl2 Extraction	pH Units	NA		7	6.95	6.87	6.85	6.88	7	6.88	6.86	6.87	6.85	7.26	10.4
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	0.25	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	0.1	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	0.37	0.35	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	0.27	0.25	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
Benzo(a)anthracene	µg/g	0.05	0.36	0.11	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	0.13	0.13	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	0.15	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	0.06	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	0.12	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	0.06	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	0.11	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1			77										
Naphthalene-d8	%	1		70		55	63	61	70	75	80	80	80	75	85
Acridine-d9	%	1		90	114	85	61	94	110	90	75	95	90	90	85
Terphenyl-d14	%	1		85	75	105	67	99	65	75	105	105	95	95	90
Moisture Content	%	0.1		8.1	6	10.4	7	8.9	15.4	10.5	8.7	9	9.9	10.2	9.4
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		93	97	97	96	101	96	103	106	103	105	104	107
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	235	194	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	234	193	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	439	397	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		8.1	6	10.4	7	8.9	15.4	10.5	8.7	9	9.9	10.2	9.4
Terphenyl	%	1		99	120	130	110	94	92	77	95	85	90	86	84
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		93	97	97	96	101	96	103	106	103	105	104	107
4-Bromofluorobenzene	% Recovery	1		71	74	73	74	73	74	91	86	90	95	94	88

Exceeds Guideline	Within Guideline														
				25T239421	25T239421	25T239421	25T239421	25T239421	25T239421	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7.5-10	DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2.5-7.5	BH25-25 @ 7.5-10	BH25-26 @ 7.5-10	BH25-27 @ 5-7.5	BH25-28 @ 7.5-10	BH25-29 @ 2.5-7.5	BH25-30 @ 0-5
Moisture Content	%	0.1		8.1	6	10.4	7	8.9	15.4	10.5	8.7	9	9.9	10.2	9.4

Exceeds Guideline	Within Guideline													
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
Parameter Name	**Unit**	**RDL**	**G / S**	**6463167**	**6463168**	**6463169**	**6463170**	**6463171**	**6463172**	**6463173**	**6463174**	**6472466**	**6472473**	**6472474**	**6472475**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	4	4	4	4	4	12	5	9	8	3	3	6
Barium	µg/g	2	220	21.4	19.2	19.5	18.9	17.9	42.7	28.5	35.5	45.4	22.8	20.8	50
Beryllium	µg/g	0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	1.3	1.1	<0.5	<0.5	0.6
Boron	µg/g	5	36	10	9	8	9	8	25	12	25	25	7	7	8
Boron (Hot Water Soluble)	µg/g	0.1	NA	<0.10	<0.10	<0.10	0.11	<0.10	1.11	0.55	1.62	1.5	0.12	<0.10	0.63
Cadmium	µg/g	0.5	1.2	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
Chromium	µg/g	5	70	8	8	7	8	7	28	13	32	30	8	7	16
Cobalt	µg/g	0.8	21	4	3.5	3.6	4.1	4	16.9	6.2	18.5	17	3.7	3.5	7.8
Copper	µg/g	1	92	15.8	14.8	13.9	18.8	16.3	30	23.5	42.1	30.7	13.4	13.9	22.9
Lead	µg/g	1	120	32	25	25	31	26	38	29	6	19	24	29	44
Molybdenum	µg/g	0.5	2	<0.5	0.6	<0.5	0.5	<0.5	0.9	<0.5	<0.5	0.6	<0.5	<0.5	0.6
Nickel	µg/g	1	82	7	6	8	8	8	34	13	39	35	5	5	16
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	0.67	0.74	0.51	<0.50	0.63
Vanadium	µg/g	2	86	13.8	13	12.1	13.7	13.1	35.1	20.1	37.4	39.5	15	12.8	24.9
Zinc	µg/g	5	290	219	211	207	250	233	123	154	85	93	151	200	215

Exceeds Guideline	Within Guideline													
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.212	0.106	0.126	0.133	0.129	0.175	0.24	0.322	0.22	0.113	0.153	0.174
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.513	0.223	0.234	0.178	0.129	0.648	0.859	0.821	0.674	0.496	0.347	0.591
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.89	7.37	7.11	6.96	6.9	6.87	6.88	6.82	7.55	7.7	7.77	7.6
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline													
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		85	75	85	70	90	85	85	70	65	70	70	65
Acridine-d9	%	1		100	85	115	85	110	110	105	100	70	65	65	60
Terphenyl-d14	%	1		70	100	80	85	90	80	90	100	90	90	90	100
Moisture Content	%	0.1		9.8	7.1	9.8	11.8	8.1	7.6	8.3	8.9	7.8	7.8	8.7	13.3
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Exceeds Guideline	Within Guideline													
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		106	106	96	107	105	102	102	104	99	106	103	103
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		9.8	7.1	9.8	11.8	8.1	7.6	8.3	8.9	7.8	7.8	8.7	13.3
Terphenyl	%	1		88	87	93	80	84	98	99	84	70	85	66	78
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Exceeds Guideline	Within Guideline														
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline													
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		106	106	96	107	105	102	102	104	99	106	103	103
4-Bromofluorobenzene	% Recovery	1		90	88	92	92	92	97	87	93	86	85	88	88

Exceeds Guideline	Within Guideline														
				25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T239704	25T240863	25T240863	25T240863	25T240863
				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				BH25-31 @ 7.5-10	BH25-32 @ 5-7.5	BH25-33 @ 7.5-10	BH25-34 @ 7.5-10	BH25-35 @ 7.5-10	BH25-36 @ 2.5-5	BH25-37 @ 5-7.5	BH25-38 @ 0-2.5	25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5
Moisture Content	%	0.1		9.8	7.1	9.8	11.8	8.1	7.6	8.3	8.9	7.8	7.8	8.7	13.3

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
Parameter Name	**Unit**	**RDL**	**G / S**	**6472476**	**6472477**	**6472478**	**6472479**	**6472671**	**6472672**	**6472673**	**6472674**	**6472675**	**6472676**	**6472677**	**6472678**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	5	7	4	4	5	6	6	5	5	4	6	6
Barium	µg/g	2	220	56.1	46.8	44.1	43.2	48.1	54.9	75.7	41.9	52.7	54.4	58.7	59.4
Beryllium	µg/g	0.5	2.5	0.6	0.9	<0.5	<0.5	<0.5	0.8	0.8	<0.5	0.6	0.5	0.5	0.5
Boron	µg/g	5	36	10	21	7	7	8	18	19	9	12	11	8	8
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.59	1.9	0.14	0.26	0.19	1.25	1.45	0.77	0.38	0.36	0.58	0.5
Cadmium	µg/g	0.5	1.2	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	0.6
Chromium	µg/g	5	70	16	28	14	14	15	24	23	13	19	17	16	17
Cobalt	µg/g	0.8	21	7.9	16.8	6.2	5.3	5.2	11.8	11.9	6.6	8.7	8.1	6.9	7.2
Copper	µg/g	1	92	20.6	25	20	14	15.7	29.6	24	18.5	22	20.2	22.1	21.7
Lead	µg/g	1	120	42	6	117	42	37	23	27	37	26	27	69	47
Molybdenum	µg/g	0.5	2	0.6	<0.5	<0.5	<0.5	0.5	0.7	1	0.6	0.7	0.6	0.7	0.6
Nickel	µg/g	1	82	16	32	12	11	12	24	25	15	17	16	14	15
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	0.68	0.68	<0.50	0.59	0.61	0.7	0.63	0.56	0.63	0.6	0.63	0.7
Vanadium	µg/g	2	86	26.2	36.7	23.4	24	24.9	33.9	32.8	21.6	27.5	26.3	27.1	28.4
Zinc	µg/g	5	290	196	71	168	190	203	129	105	193	140	143	286	214
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.249	0.162	0.174	0.122	0.18	0.221	0.284	0.184	0.194	0.13	0.204	0.142
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.542	1.16	0.271	0.144	0.118	0.876	1.07	1.14	0.621	0.341	0.17	0.164
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.73	7.94	7.58	7.37	7.42	6.51	7.67	7.47	7.69	7.74	7.48	7.51
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		65	65	65	65	70	65	70	70	65	65	60	65
Acridine-d9	%	1		70	65	65	70	65	100	85	125	125	130	115	105
Terphenyl-d14	%	1		115	115	115	110	125	115	120	135	130	120	115	110
Moisture Content	%	0.1		11.5	9.7	16.3	11.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		100	102	103	102	106	101	105	105	98	100	103	102
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	56	<50	<50	<50	<50	<50	130	<50	<50	<50	<50	<50

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
F3 (C16 to C34) minus PAHs	µg/g	50	240	56	<50	<50	<50	<50	<50	130	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	92	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		11.5	9.7	16.3	11.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5
Terphenyl	%	1		68	81	79	92	85	71	76	68	86	90	75	69
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
				25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10	25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		100	102	103	102	106	101	105	105	98	100	103	102
4-Bromofluorobenzene	% Recovery	1		94	94	86	86	90	93	92	94	90	95	87	95
Moisture Content	%	0.1		11.5	9.7	16.3	11.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5

Exceeds Guideline	Within Guideline													
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
Parameter Name	**Unit**	**RDL**	**G / S**	**6472679**	**6472680**	**6472681**	**6472682**	**6472683**	**6472684**	**6472685**	**6472686**	**6472687**	**6472688**	**6472689**	**6472719**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	6	4	6	5	3	6	2	10	5	9	5	6
Barium	µg/g	2	220	56.2	34.4	59	51	23.9	46.1	15.3	81.3	72.3	55.1	53.3	46.1
Beryllium	µg/g	0.5	2.5	0.5	<0.5	0.6	0.5	<0.5	0.7	<0.5	0.8	1	1.2	0.6	0.6
Boron	µg/g	5	36	9	8	12	14	9	12	<5	19	27	25	8	10
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.57	0.31	0.62	0.75	0.18	0.76	0.54	0.41	0.32	1.88	0.34	0.31
Cadmium	µg/g	0.5	1.2	0.6	<0.5	0.6	0.5	<0.5	0.8	<0.5	0.7	<0.5	<0.5	0.6	0.6
Chromium	µg/g	5	70	16	11	17	16	9	15	8	19	25	30	16	15
Cobalt	µg/g	0.8	21	6.7	4.7	8	7.7	4.1	7.5	2.7	9.7	12.3	18.5	7.5	6.5
Copper	µg/g	1	92	19.2	16.2	21.5	22.1	16.1	24.6	5.9	36.2	17.4	30	18.8	18.9
Lead	µg/g	1	120	54	36	49	42	25	44	7	130	22	5	42	43
Molybdenum	µg/g	0.5	2	0.6	<0.5	0.6	0.6	0.6	0.5	<0.5	1.3	1	<0.5	0.5	0.7
Nickel	µg/g	1	82	14	9	17	15	7	15	5	19	27	37	14	13
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	0.64	0.53	0.64	0.54	<0.50	0.59	<0.50	0.63	0.56	0.6	0.5	0.56
Vanadium	µg/g	2	86	26.9	19.2	27.3	24.8	16.3	24.4	18.4	28.4	33	37.5	26	25.1
Zinc	µg/g	5	290	239	202	226	192	235	252	25	349	109	81	245	276
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.18	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.22	0.132	0.294	0.369	0.179	0.377	0.232	0.225	0.386	0.222	0.126	0.2
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.181	0.134	0.506	0.598	0.431	0.495	0.631	0.588	0.423	1.09	0.149	0.152
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.34	7.63	7.56	7.78	7.87	7.7	8.58	9.27	11.7	8.24	7.99	7.43
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		70	70	70	70	70	75	65	70	75	70	65	65
Acridine-d9	%	1		90	110	85	90	115	85	75	85	85	85	90	75
Terphenyl-d14	%	1		120	125	120	95	130	130	130	125	125	120	130	105
Moisture Content	%	0.1		13.9	15.8	15	15.5	7.5	16.8	12.6	12.6	14.2	8.1	15.5	16.6
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		108	102	99	105	103	110	105	102	100	102	105	97
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	103	<50	<50	59	<50	<50	<50	<50	<50

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	102	<50	<50	59	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	113	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		13.9	15.8	15	15.5	7.5	16.8	12.6	12.6	14.2	8.1	15.5	16.6
Terphenyl	%	1		76	84	77	76	70	77	83	81	83	76	76	73
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-20	2025-01-20
				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5	25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		108	102	99	105	103	110	105	102	100	102	105	97
4-Bromofluorobenzene	% Recovery	1		92	93	92	94	93	93	93	83	91	88	88	91
Moisture Content	%	0.1		13.9	15.8	15	15.5	7.5	16.8	12.6	12.6	14.2	8.1	15.5	16.6

Exceeds Guideline	Within Guideline													
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
Parameter Name	**Unit**	**RDL**	**G / S**	**6472724**	**6472725**	**6472726**	**6472727**	**6472728**	**6472729**	**6472780**	**6472781**	**6472782**	**6472783**	**6472784**	**6472785**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	5	6	7	6	5	6	7	5	6	6	6	7
Barium	µg/g	2	220	42	55.4	58	51.8	62.3	51.6	60.4	64.4	79.2	17.2	54	71.2
Beryllium	µg/g	0.5	2.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.9	0.7	<0.5	0.6	<0.5
Boron	µg/g	5	36	9	8	8	7	7	8	9	17	17	17	18	7
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.26	0.35	0.49	0.75	0.49	0.46	0.48	0.63	0.29	0.12	0.44	0.5
Cadmium	µg/g	0.5	1.2	<0.5	0.6	0.8	0.7	0.6	0.6	1	<0.5	<0.5	<0.5	0.7	1
Chromium	µg/g	5	70	14	16	15	15	17	15	16	22	19	6	15	16
Cobalt	µg/g	0.8	21	6.3	7.1	6.9	6.4	6.8	7	6.7	12.4	8	2.9	7.1	6.2
Copper	µg/g	1	92	18.6	21.8	21.7	18.1	20.7	19.2	19.9	42.2	32.5	13.5	22	23.3
Lead	µg/g	1	120	34	43	61	55	42	47	70	24	44	39	55	94
Molybdenum	µg/g	0.5	2	0.6	0.6	0.7	0.6	<0.5	0.6	0.8	0.6	0.8	<0.5	0.6	0.8
Nickel	µg/g	1	82	12	14	14	13	15	14	14	25	15	3	14	13
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	<0.50	0.53	0.5	0.57	0.56	0.57	0.62	0.67	0.54	<0.50	0.58	0.71
Vanadium	µg/g	2	86	24.1	26.9	25	25.4	26.1	24.7	26.2	29.8	23.8	8.8	23.9	26.6
Zinc	µg/g	5	290	223	241	336	266	229	258	341	109	92	279	292	350
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.145	0.234	0.216	0.244	0.429	0.27	0.128	0.722	0.398	0.243	0.154	0.226
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.231	0.159	0.374	0.161	0.14	0.249	0.102	3.07	1.18	0.379	0.19	0.114
pH, 2:1 CaCl2 Extraction	pH Units	NA		6.41	7.46	6.99	7.34	7.15	7.33	7.27	7.79	9.67	8.06	7.87	7.53
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1													
Naphthalene-d8	%	1		65	97	97	97	71	97	71	97	71	97	71	97
Acridine-d9	%	1		70	71	85	85	74	85	74	85	74	85	85	85
Terphenyl-d14	%	1		105	74	77	71	85	99	88	77	88	77	77	99
Moisture Content	%	0.1		9.4	16.8	19.3	16	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		100	102	108	102	103	103	103	98	107	106	104	105
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		9.4	16.8	19.3	16	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8
Terphenyl	%	1		78	69	72	68	89	96	79	91	71	67	96	95
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04

Exceeds Guideline	Within Guideline														
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
				25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10	25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		100	102	108	102	103	103	103	98	107	106	104	105
4-Bromofluorobenzene	% Recovery	1		90	93	94	93	95	89	89	94	93	88	86	89
Moisture Content	%	0.1		9.4	16.8	19.3	16	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
Parameter Name	**Unit**	**RDL**	**G / S**	**6472786**	**6472787**	**6472788**	**6472789**	**6472790**	**6472791**	**6472792**	**6472824**	**6472829**	**6472835**	**6472840**	**6472845**	**6472848**	**6472849**
Antimony	µg/g	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	7	6	6	6	6	6	7	7	4	5	4	6	8	5
Barium	µg/g	2	220	71.8	58.1	52.8	74.2	75	61.2	58.5	62.4	44.7	44.5	38.3	57.4	68.2	72.2
Beryllium	µg/g	0.5	2.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	5	36	7	7	6	5	5	6	6	6	6	6	<5	6	6	8
Boron (Hot Water Soluble)	µg/g	0.1	NA	0.45	0.51	0.8	0.6	0.65	0.5	0.49	0.43	0.47	0.42	0.48	0.43	0.56	0.67
Cadmium	µg/g	0.5	1.2	0.8	0.7	0.8	0.6	0.7	0.7	0.9	0.9	<0.5	0.5	<0.5	0.8	0.9	<0.5
Chromium	µg/g	5	70	17	13	12	14	15	15	14	15	13	12	10	13	15	15
Cobalt	µg/g	0.8	21	7.3	5.8	5.4	6.5	6.7	6	6.2	6.6	5.4	5.5	4.5	5.5	6.4	5
Copper	µg/g	1	92	25.6	20.3	18.4	22.1	20.8	19.1	20.3	21.1	17.3	22.9	14.7	16.8	17.4	15.6
Lead	µg/g	1	120	77	64	66	58	57	61	74	68	38	39	34	78	100	50
Molybdenum	µg/g	0.5	2	0.8	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.8	1.2
Nickel	µg/g	1	82	15	12	11	13	13	13	12	13	11	11	9	12	12	11
Selenium	µg/g	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	0.5	2.5	0.71	0.64	0.54	0.57	0.61	0.6	0.61	0.62	0.5	<0.50	<0.50	0.63	0.66	0.62
Vanadium	µg/g	2	86	28.2	22.8	21	25.6	26.5	23.9	25.5	26.6	21.4	20.1	18.2	22.7	26.4	24.2
Zinc	µg/g	5	290	340	289	280	259	258	260	342	329	184	211	132	315	335	264

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
Chromium, Hexavalent	µg/g	0.2	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.005	0.57	0.311	0.176	0.44	0.916	0.173	0.159	0.199	0.138	0.211	0.399	0.26	0.138	0.192	0.232
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	2.4	0.72	0.16	0.511	0.629	0.244	0.145	0.102	0.093	0.226	0.643	0.352	0.132	0.14	0.388
pH, 2:1 CaCl2 Extraction	pH Units	NA		7.49	7.41	7.33	7.53	7.18	7.26	7.28	6.13	7.54	7.38	7.54	7.22	7.37	7.8
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
Benzo(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8		1															
Naphthalene-d8	%	1		75	75	75	75	70	65	65	70	70	70	70	70	88	70
Acridine-d9	%	1		70	95	90	115	115	80	110	65	60	85	85	85	74	90
Terphenyl-d14	%	1		90	105	85	100	70	75	90	85	80	70	65	85	88	70
Moisture Content	%	0.1		19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7	16.3	16.8	16.1	17.3	17.1	11.3
F1 (C6 to C10)	µg/g	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T24063	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
F1 (C6 to C10) minus BTEX	µg/g	5	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene-d8	%	1		104	100	102	102	104	104	104	105	103	103	101	105	103	105
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	91	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	91	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1		19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7	16.3	16.8	16.1	17.3	17.1	11.3
Terphenyl	%	1		73	84	81	67	82	81	90	65	70	66	92	73	70	74
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T24063	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
1,2-Dichloropropane	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Exceeds Guideline	Within Guideline															
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1		104	100	102	102	104	104	104	105	103	103	101	105	103	105
4-Bromofluorobenzene	% Recovery	1		89	86	91	90	90	90	93	94	91	93	94	95	92	90

Exceeds Guideline	Within Guideline																
				25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863	25T24063	25T240863	25T240863	25T240863	25T240863	25T240863	25T240863
				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10	25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
Moisture Content	%	0.1		19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7	16.3	16.8	16.1	17.3	17.1	11.3

Table 6 – Summary of Analysis for SPLP Samples

Sample Description					BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55	BH25-62	BH25-70	BH25-79	BH25-86
Parameter Name	Unit	RDL	Guideline	G / S	6509219	6509220	6509221	6509222	6509223	6509224	6509225	6509226	6509227	6509228	6509229	6509230
O. Reg. 406/19 - SPLP BNA																
Bis(2-chloroethyl)ether Leachate	µg/L	0.5	406 T1 RPIC	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether Leachate	µg/L	0.5	406 T1 RPIC	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Chloroaniline Leachate	µg/L	1	406 T1 RPIC	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3,3'-Dichlorobenzidine Leachate	µg/L	0.5	406 T1 RPIC	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diethyl phthalate Leachate	µg/L	0.5	406 T1 RPIC	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethylphthalate Leachate	µg/L	0.5	406 T1 RPIC	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dinitrophenol Leachate	µg/L	10	406 T1 RPIC	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene Leachate	µg/L	0.5	406 T1 RPIC		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene Leachate	µg/L	0.5	406 T1 RPIC		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dinitrotoluene (2,4 & 2,6) Leachate	µg/L	0.5	406 T1 RPIC	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol Leachate	µg/L	0.2	406 T1 RPIC	0.75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Fluorophenol	%	1	406 T1 RPIC		62	65	69	67	70	61	63	61	70	71	76	80
phenol-d6 surrogate	%	1	406 T1 RPIC		81	90	80	81	90	79	71	64	80	74	79	104
2,4,6-Tribromophenol	%	1	406 T1 RPIC		72	62	76	62	60	65	68	64	103	61	92	62
Chrysene-d12	%	1	406 T1 RPIC		110	94	94	67	110	91	100	77	64	107	78	78
O. Reg. 406/19 SPLP Metals																
Antimony Leachate	µg/L	0.6	406 T1 RPIC	-	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6

Sample Description					BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55	BH25-62	BH25-70	BH25-79	BH25-86
Parameter Name	**Unit**	**RDL**	**Guideline**	**G / S**	**6509219**	**6509220**	**6509221**	**6509222**	**6509223**	**6509224**	**6509225**	**6509226**	**6509227**	**6509228**	**6509229**	**6509230**
Arsenic Leachate	µg/L	5	406 T1 RPIC	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium Leachate	µg/L	100	406 T1 RPIC	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Beryllium Leachate	µg/L	0.8	406 T1 RPIC	-	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Boron Leachate	µg/L	500	406 T1 RPIC	-	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Cadmium Leachate	µg/L	0.2	406 T1 RPIC	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium Leachate	µg/L	10	406 T1 RPIC	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt Leachate	µg/L	0.3	406 T1 RPIC	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper Leachate	µg/L	6.9	406 T1 RPIC	-	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9
Lead Leachate	µg/L	1	406 T1 RPIC	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Molybdenum Leachate	µg/L	1.5	406 T1 RPIC	**23**	<1.5	<1.5	2.6	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	2.8	<1.5	3.5
Nickel Leachate	µg/L	10	406 T1 RPIC	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Selenium Leachate	µg/L	5	406 T1 RPIC	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver Leachate	µg/L	0.1	406 T1 RPIC	**0.3**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium Leachate	µg/L	0.5	406 T1 RPIC	**2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium Leachate	µg/L	2	406 T1 RPIC	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vanadium Leachate	µg/L	0.6	406 T1 RPIC	-	<0.6	8.9	9.6	2.6	0.8	6.4	2.2	0.6	1.3	10.2	0.9	3.4
Zinc Leachate	µg/L	20	406 T1 RPIC	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
O. Reg. 406/19 - SPLP VOCs																
Bromomethane Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20									

Sample Description					BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55	BH25-62	BH25-70	BH25-79	BH25-86
Parameter Name	**Unit**	**RDL**	**Guideline**	**G / S**	**6509219**	**6509220**	**6509221**	**6509222**	**6509223**	**6509224**	**6509225**	**6509226**	**6509227**	**6509228**	**6509229**	**6509230**
1,1-Dichloroethylene Leachate	µg/L	0.3	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trans 1,2-Dichloroethylene Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1-Dichloroethane Leachate	µg/L	0.3	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cis 1,2-Dichloroethylene Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chloroform Leachate	µg/L	0.2	406 T1 RPIC	**1**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride Leachate	µg/L	0.2	406 T1 RPIC	**0.2**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide Leachate	µg/L	0.1	406 T1 RPIC	**0.2**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethylene Leachate	µg/L	0.2	406 T1 RPIC	**0.5**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,1,2-Tetrachloroethane Leachate	µg/L	0.1	406 T1 RPIC	**0.5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane Leachate	µg/L	0.1	406 T1 RPIC	**0.5**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene Leachate	µg/L	0.1	406 T1 RPIC	**0.5**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene Leachate	µg/L	0.1	406 T1 RPIC	**0.55**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene Total Leachate	µg/L	0.3	406 T1 RPIC	**0.5**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene-d8	% Recovery	1	406 T1 RPIC		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Sample Description					BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55	BH25-62	BH25-70	BH25-79	BH25-86
Parameter Name	**Unit**	**RDL**	**Guideline**	**G / S**	**6509219**	**6509220**	**6509221**	**6509222**	**6509223**	**6509224**	**6509225**	**6509226**	**6509227**	**6509228**	**6509229**	**6509230**
Guideline Legend:	Exceeds Guideline			Within Guideline		Below RDL										

APPENDIX B – Figures

Figure 1 – Site Location Map

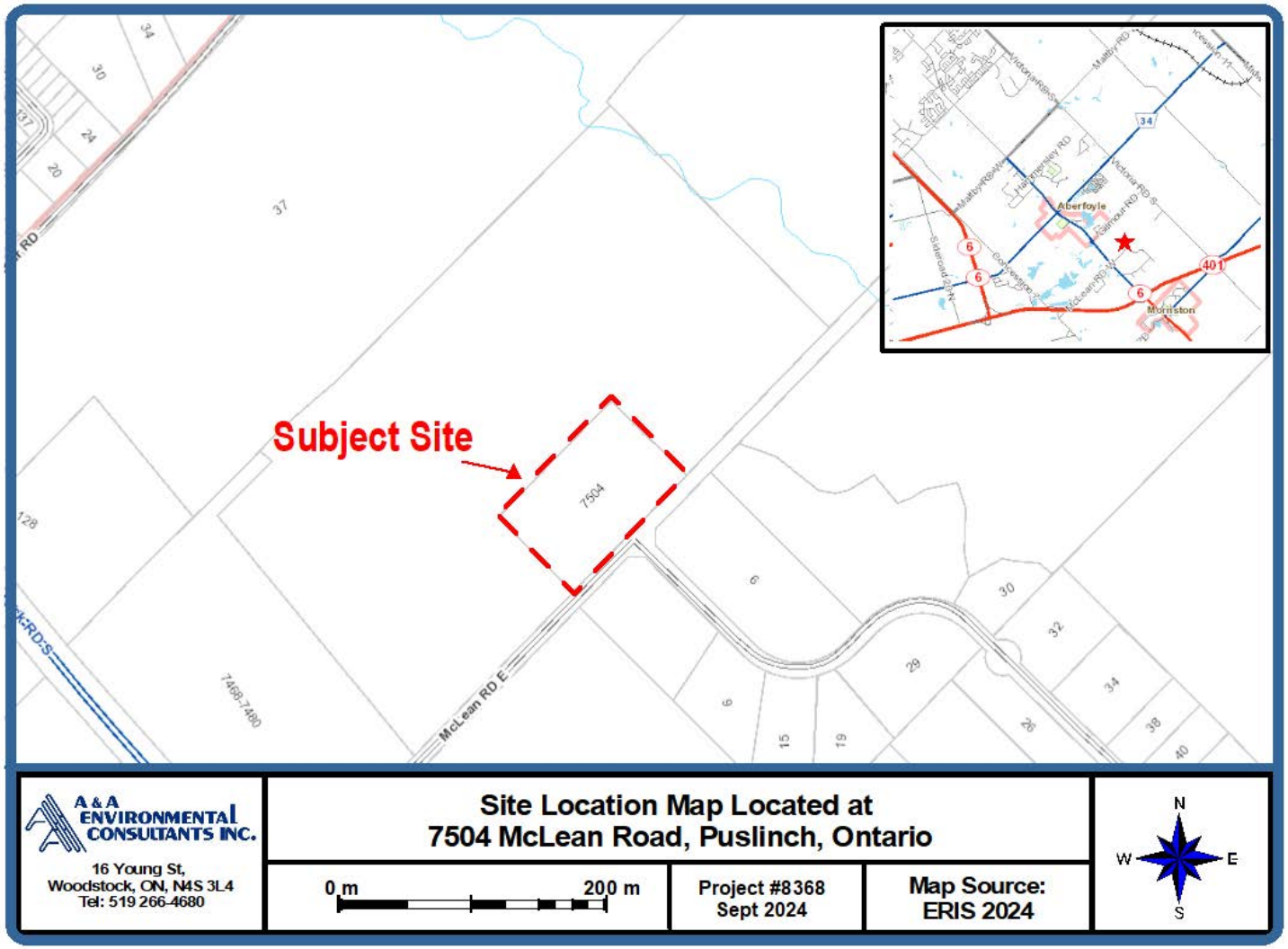


Figure 2 – Satellite Image Indicating the Project area

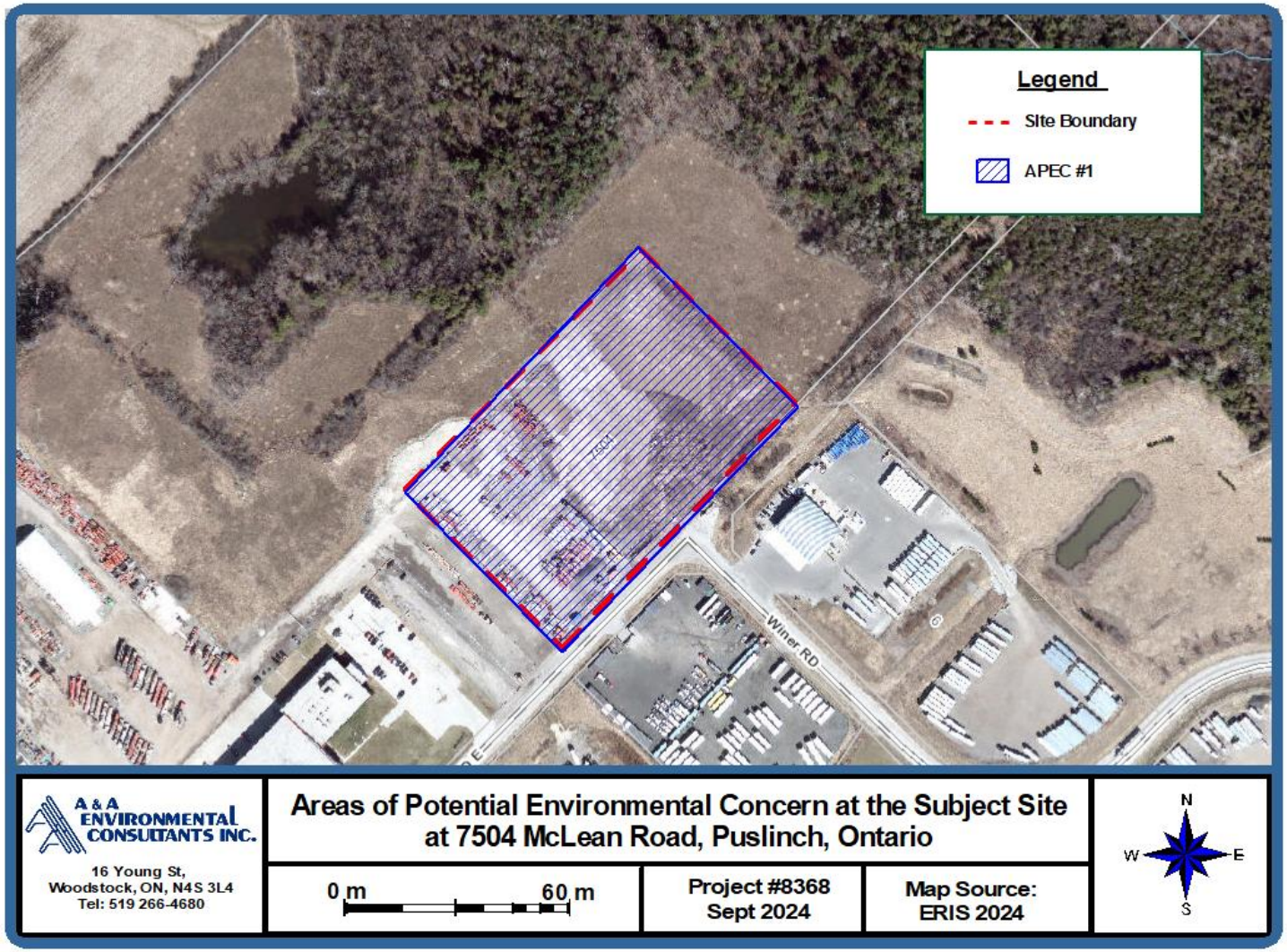


Figure 3 – Topographic Map

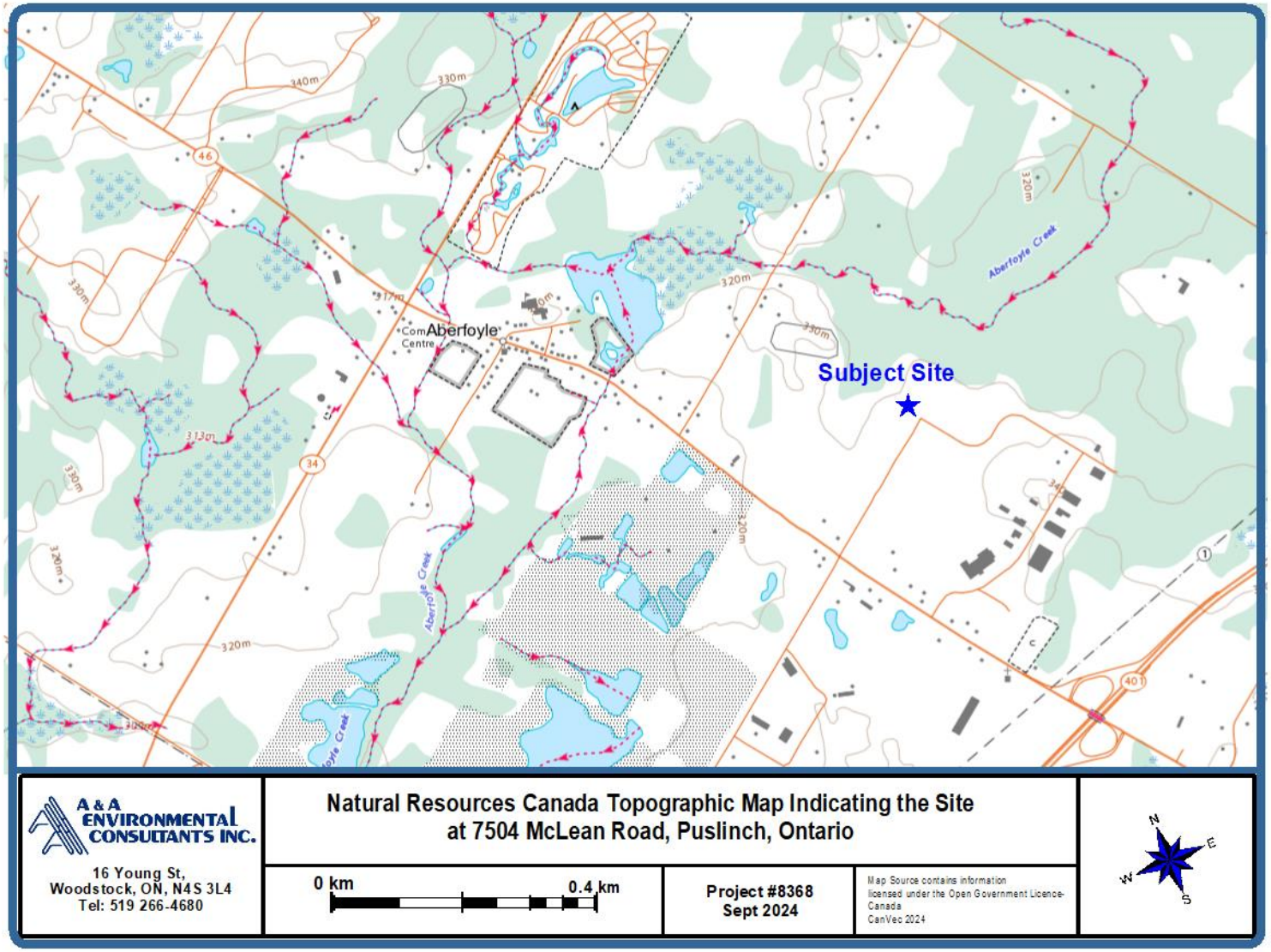


Figure 4 – Plan View Showing Borehole Locations within APEC

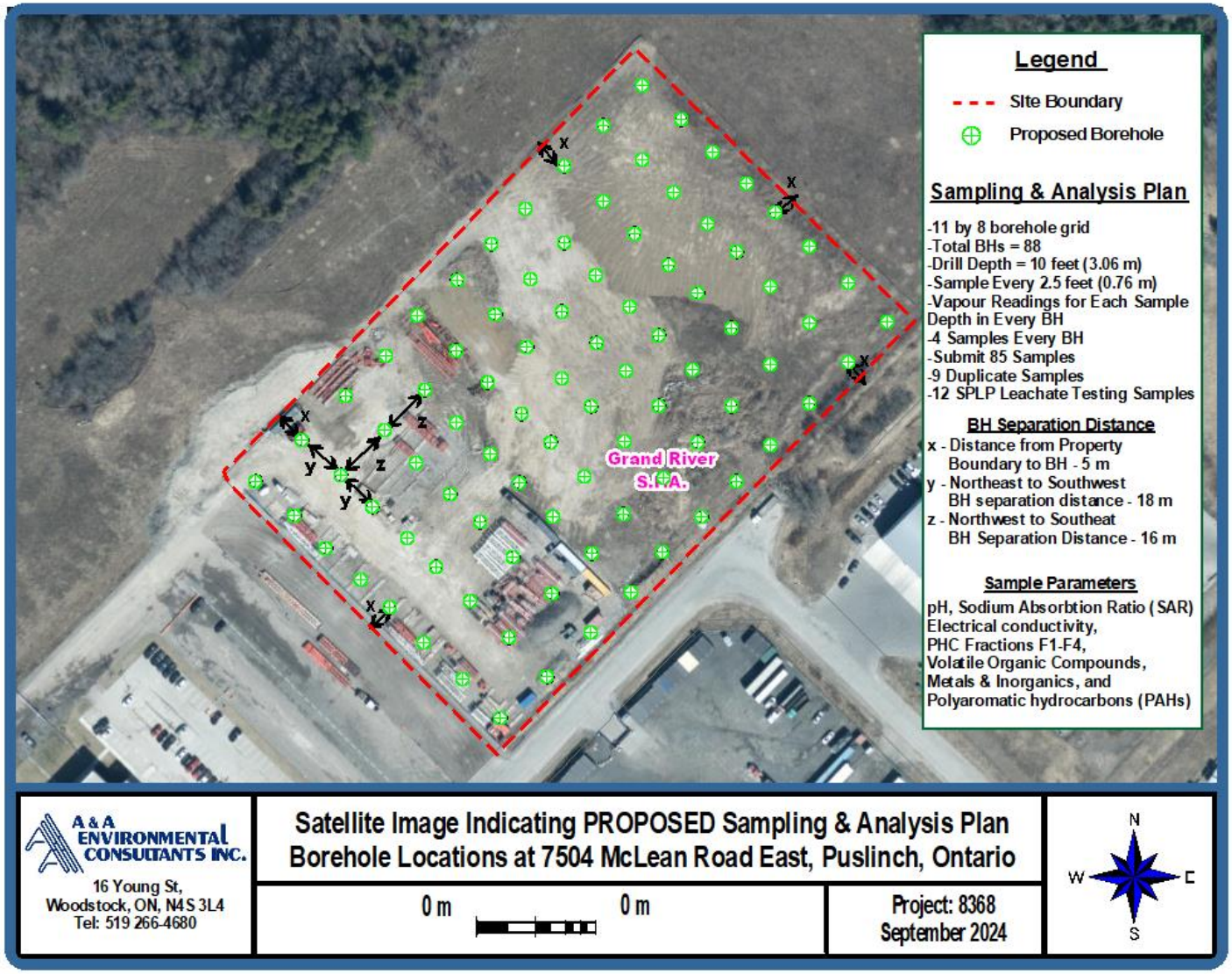


Figure 5 – Borehole Grid with BH Labels

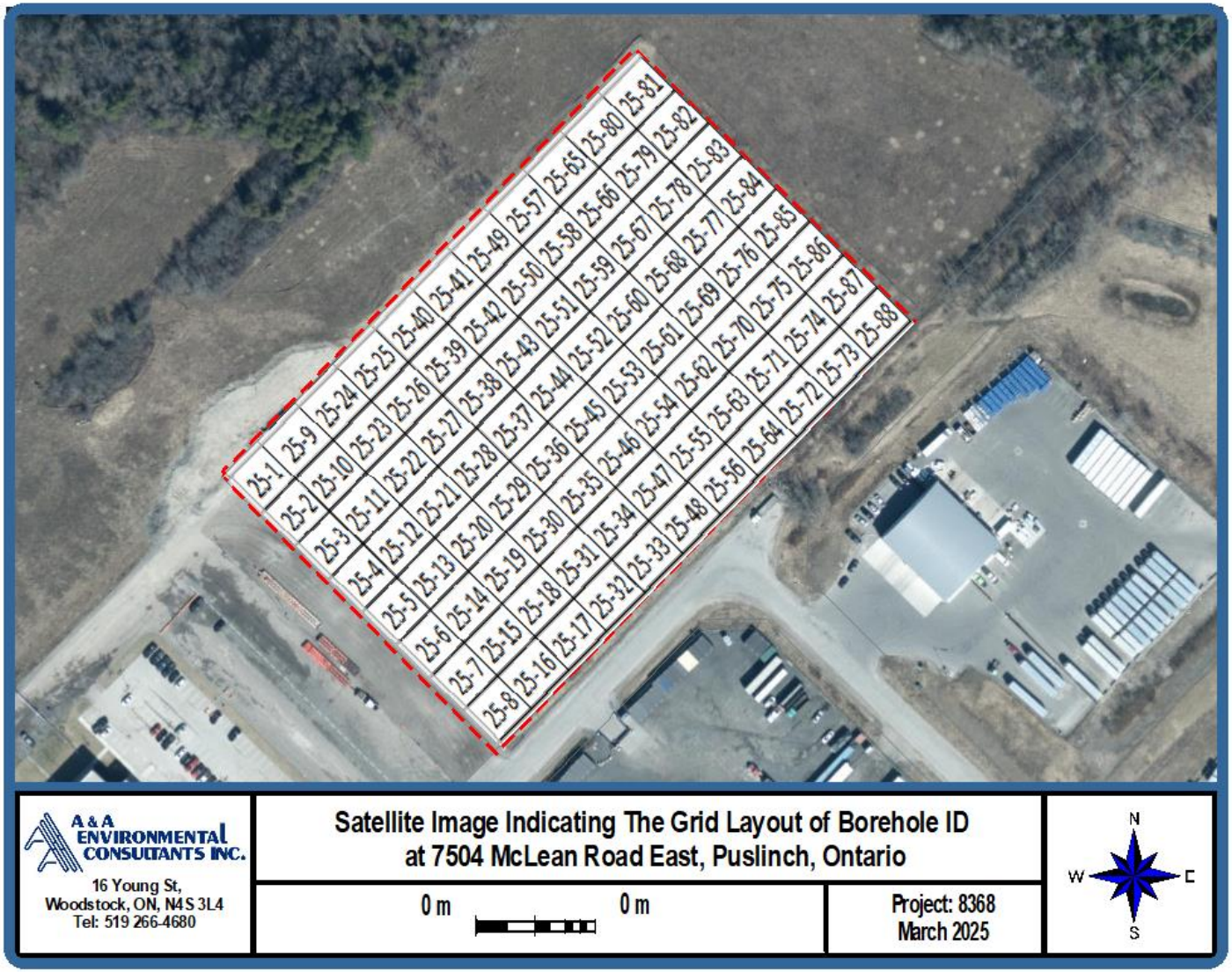


Figure 6 – Boreholes with Exceedances

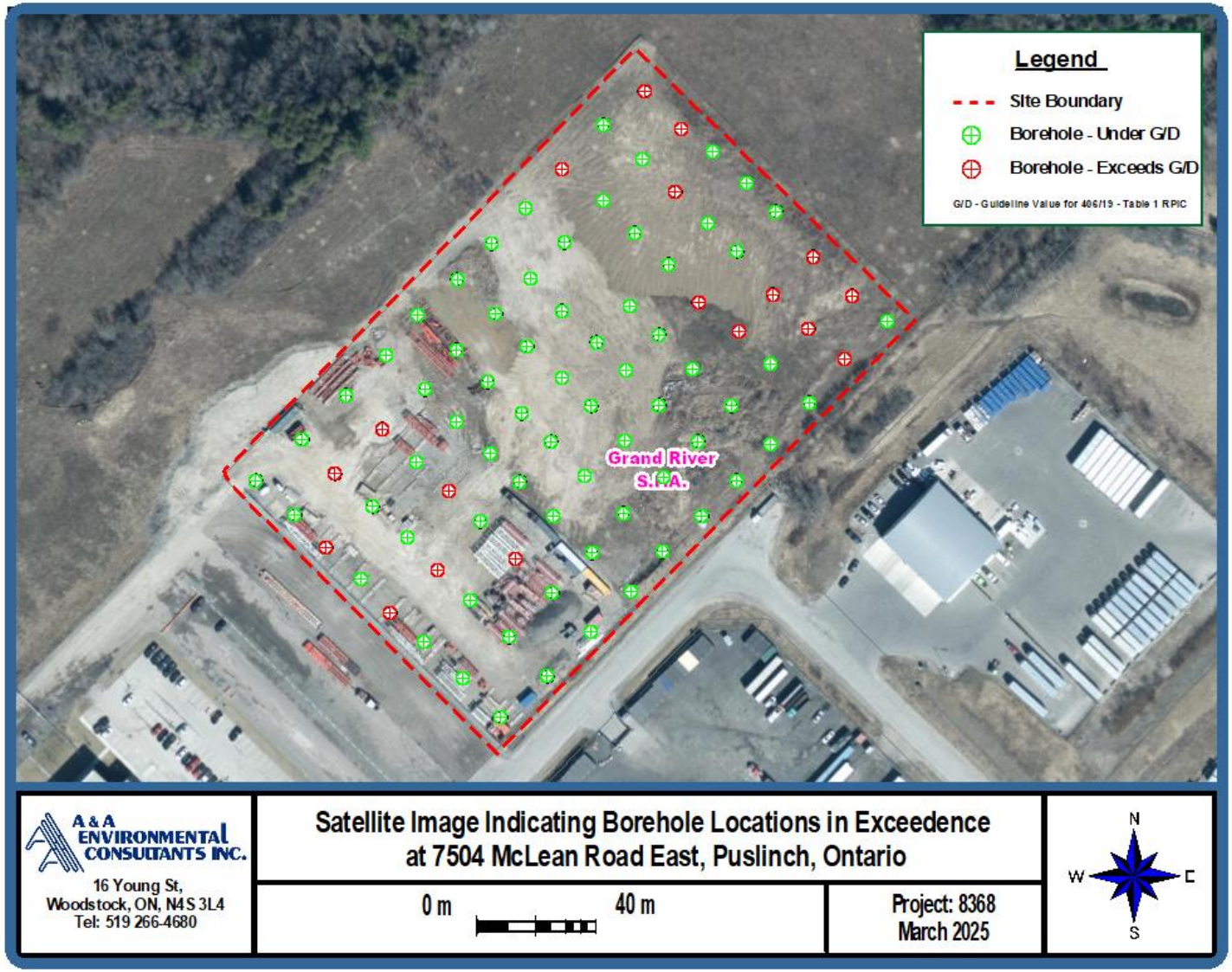


Figure 7 – Geotechnical Investigation Borehole Map

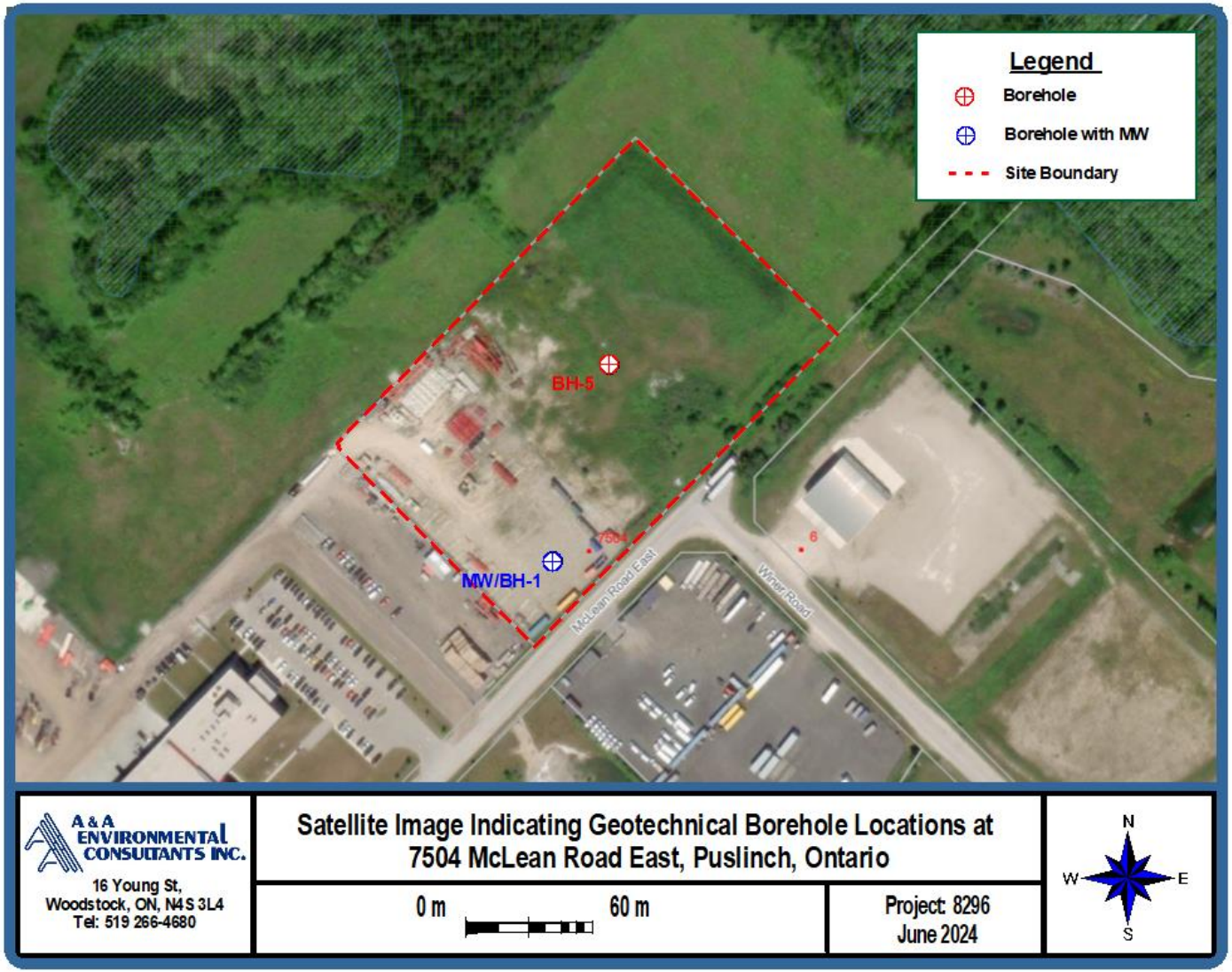
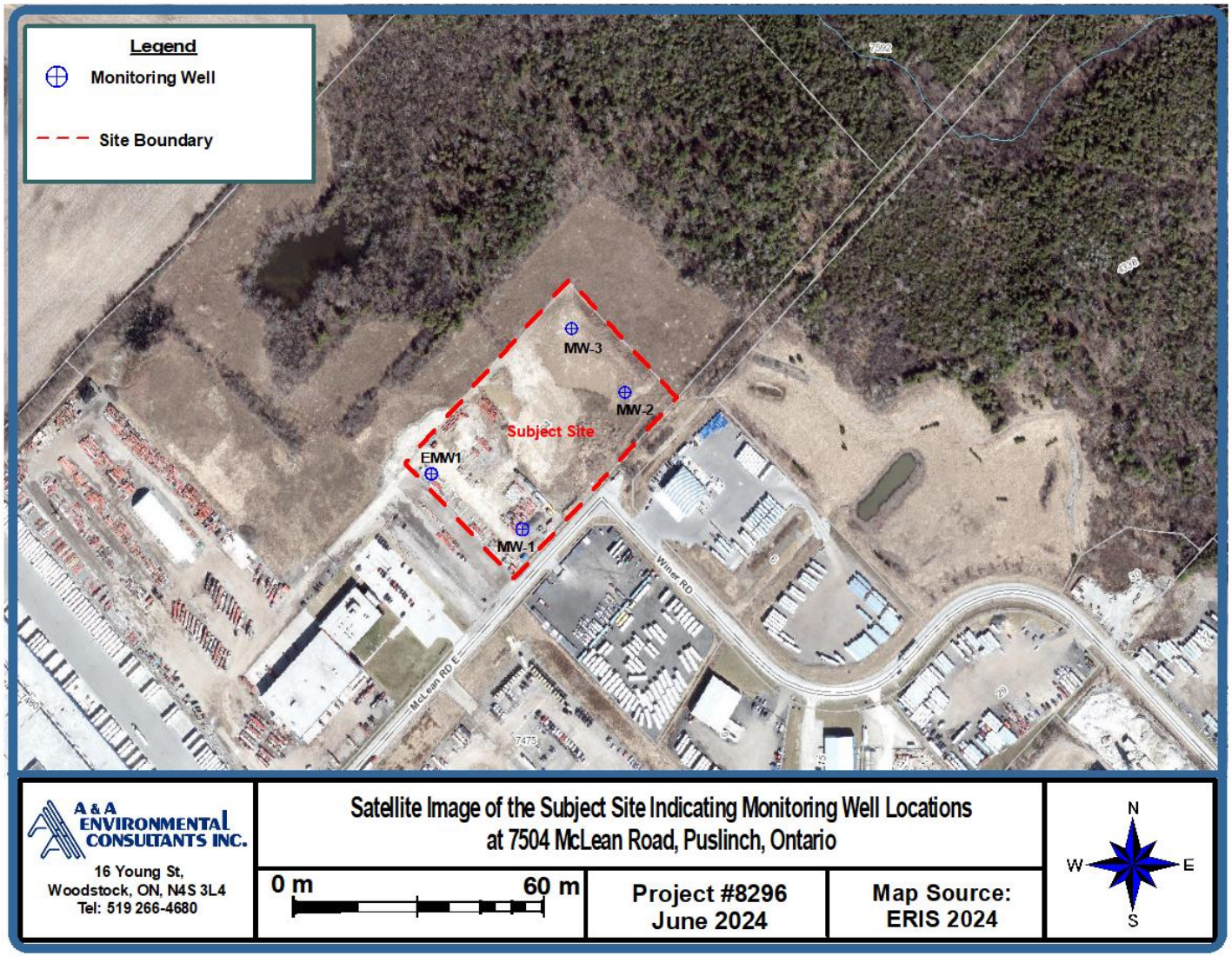
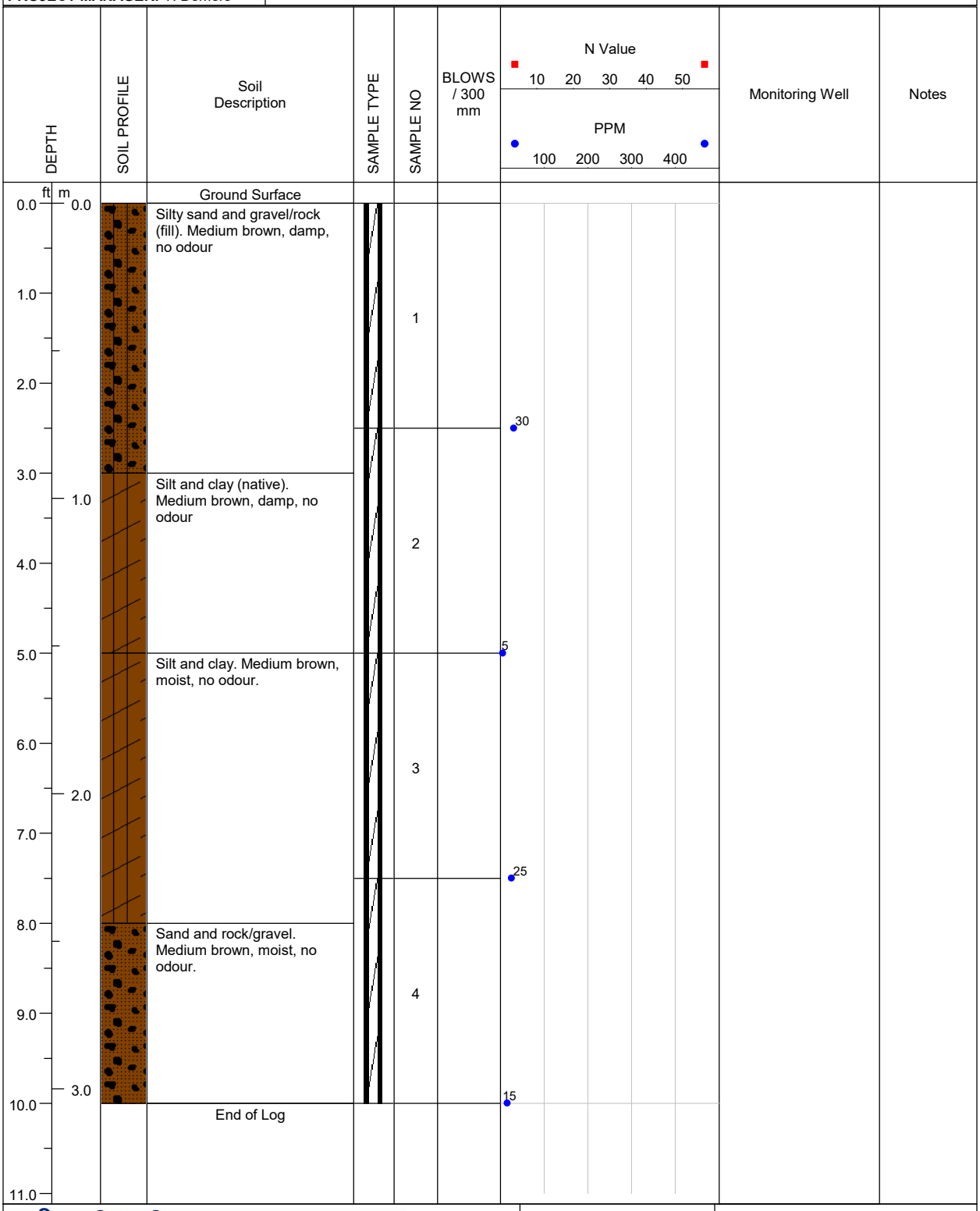


Figure 8 – Hydrogeological Investigation Monitoring Well Map



APPENDIX C – Borehole Logs

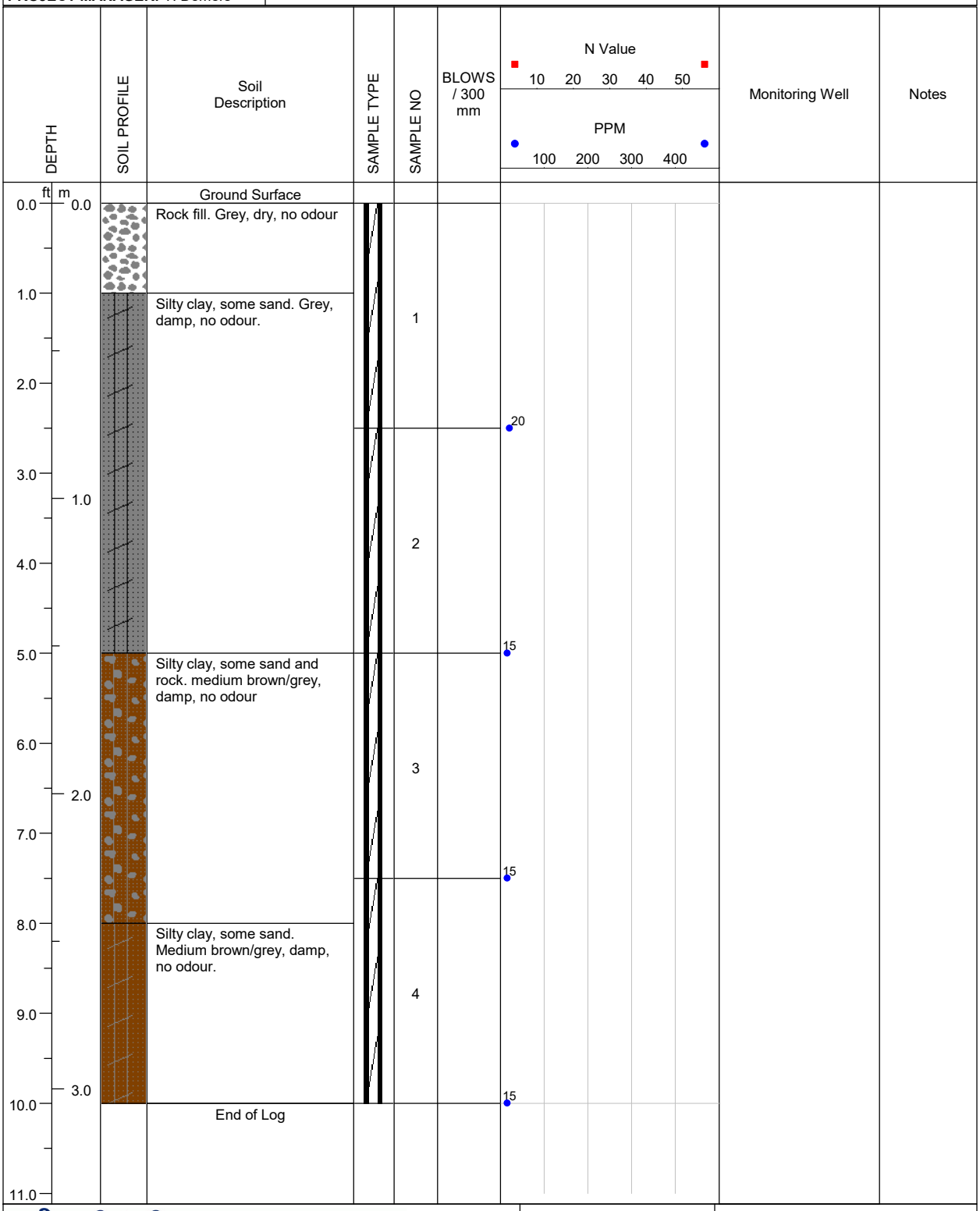
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of NW site corner	**BOREHOLE NO: 25-1**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-1	**BOREHOLE NO: 25-2**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-2	**BOREHOLE NO: 25-3**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0	0.0	Rock fill. Dark grey, dry, no odour					
1.0		Silty sand (fill). Medium brown/grey, moist, no odour.	1				
2.0					10		
3.0	1.0	Clayey silty sand and some rock. Light brown/light grey, damp, no odour.	2				
5.0					15		
6.0		Sandy silty clay. grey, damp, no odour.	3				
7.0	2.0				20		
8.0		Sandy silty clay. Medium brown, damp, no odour.	4				
9.0		Concrete					
		Silty clay. Meidum brown, damp, no odour.					
10.0	3.0				15		
		End of Log					
11.0							

N Value: 10 20 30 40 50

PPM: 100 200 300 400

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LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-3	**BOREHOLE NO: 25-4**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0	0.0	Rock fill. Dark grey, dry, no odour					
		Silty sand (fill). Medium brown, moist, no odour.	1				
2.5					10		
		Clayey silty sand. Medium brown, damp, no odour.	2				
5.0	1.0				15		
			3				
7.5	2.0				10		
			4				
10.0	3.0				10		
		End of Log					
11.0							

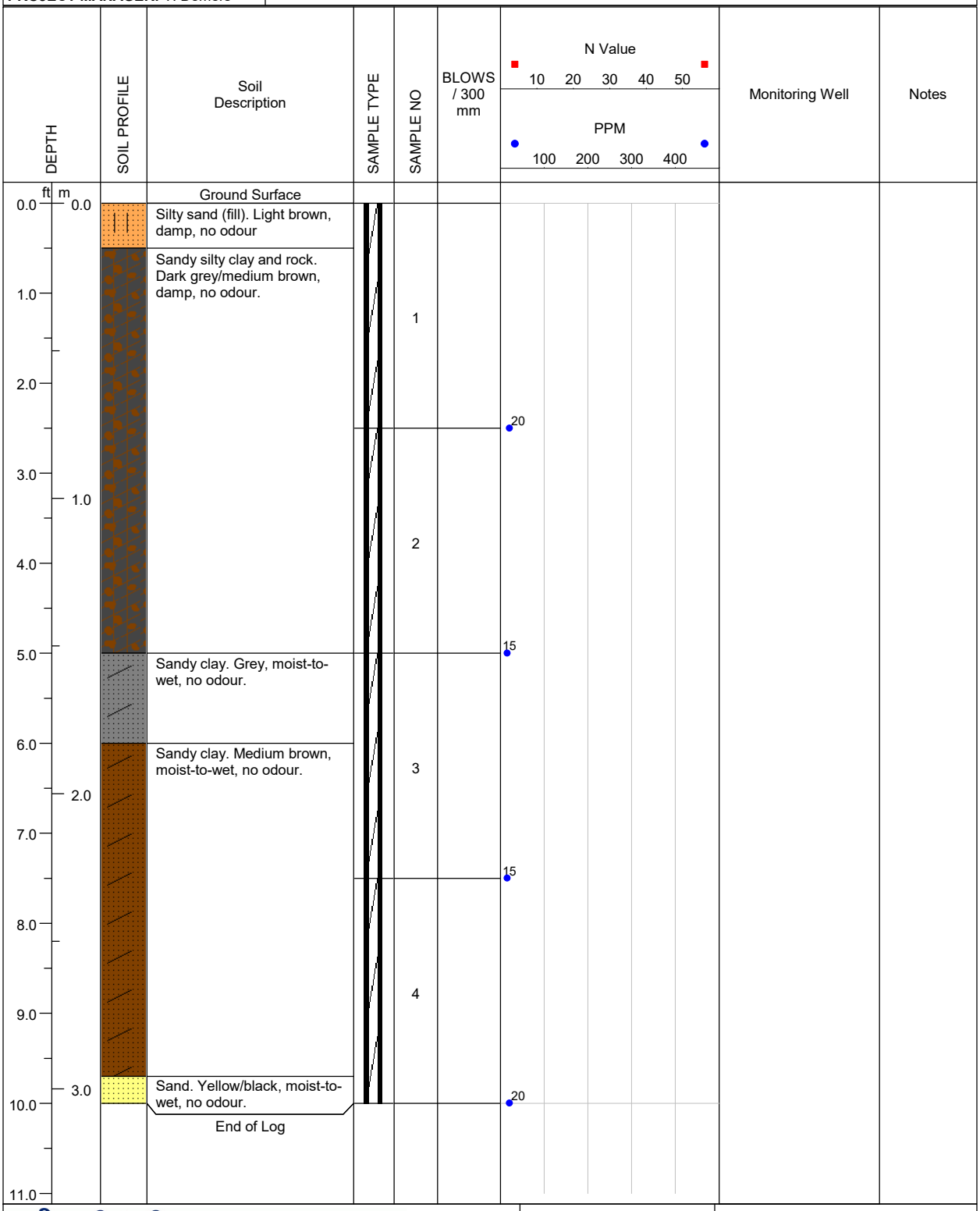
N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

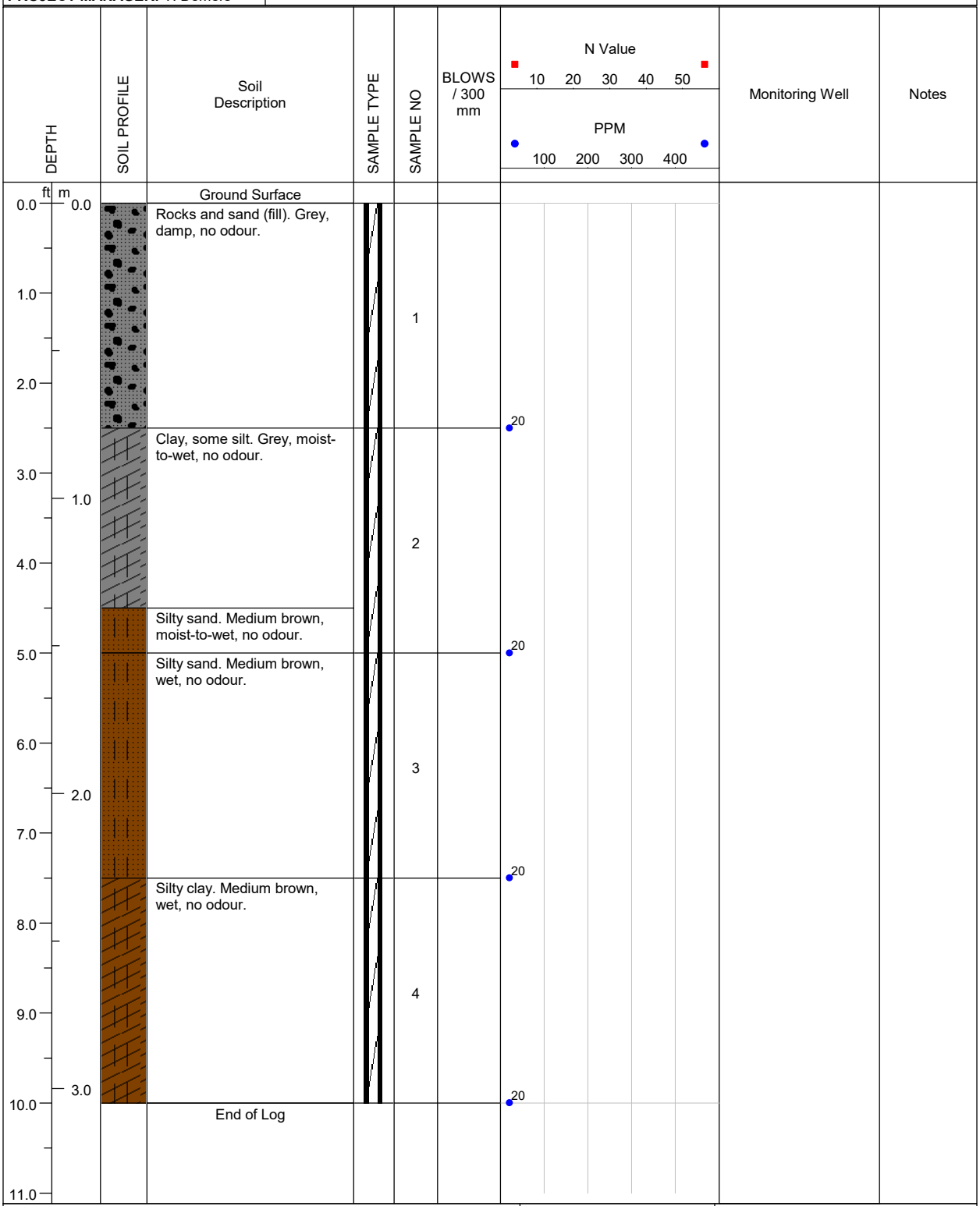
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-4	**BOREHOLE NO: 25-5**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

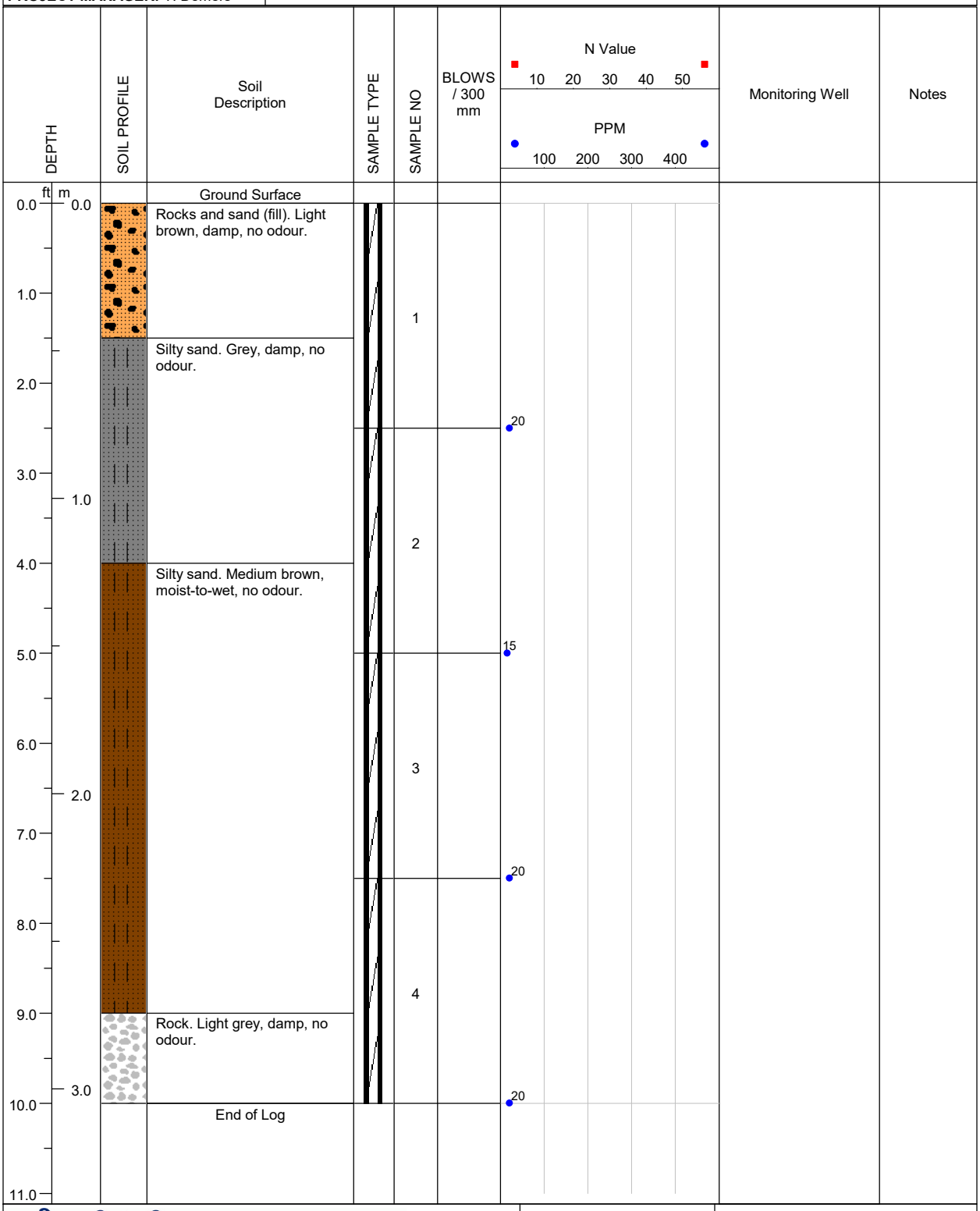
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-5	**BOREHOLE NO: 25-6**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



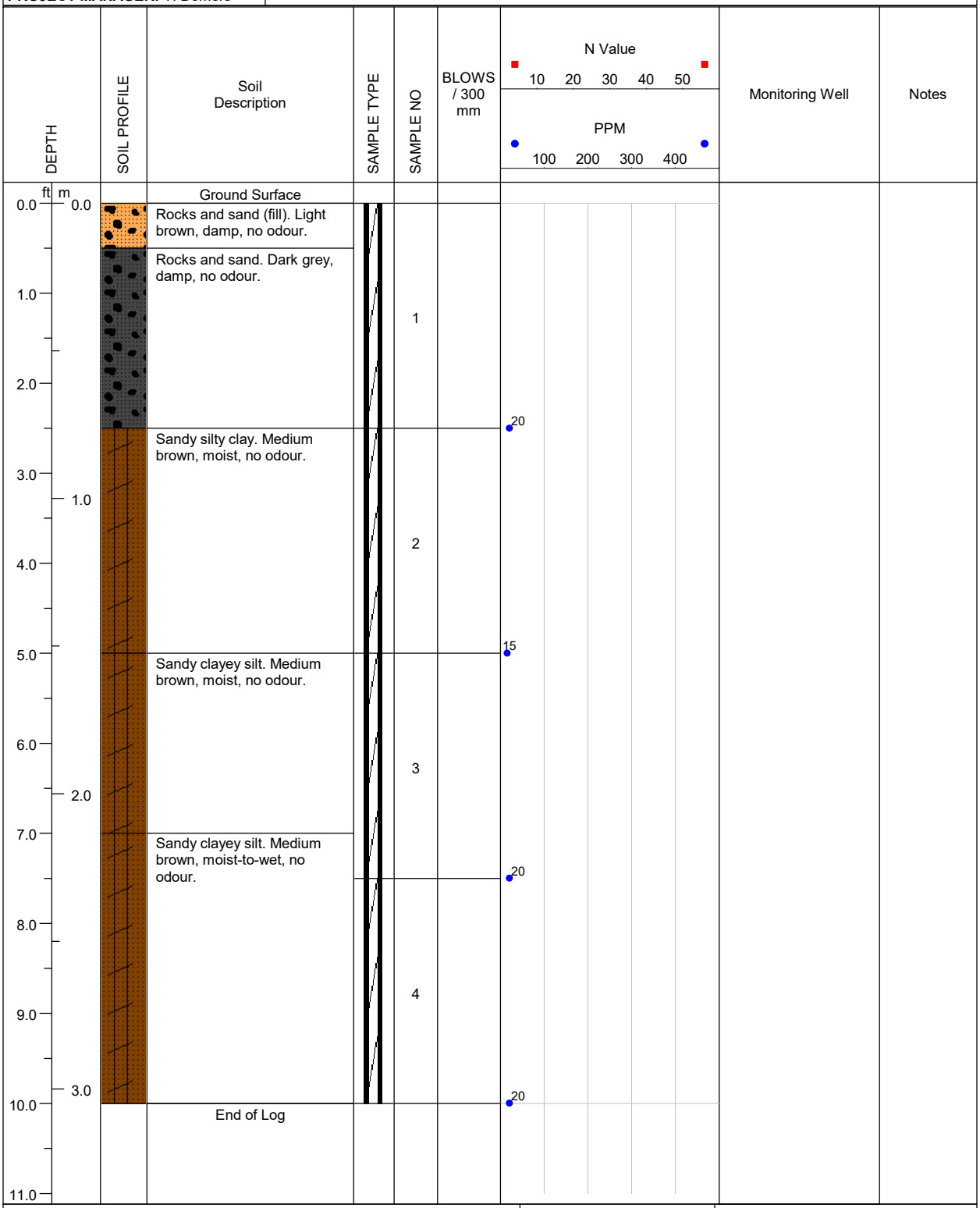
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline	**BOREHOLE NO: 25-7**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

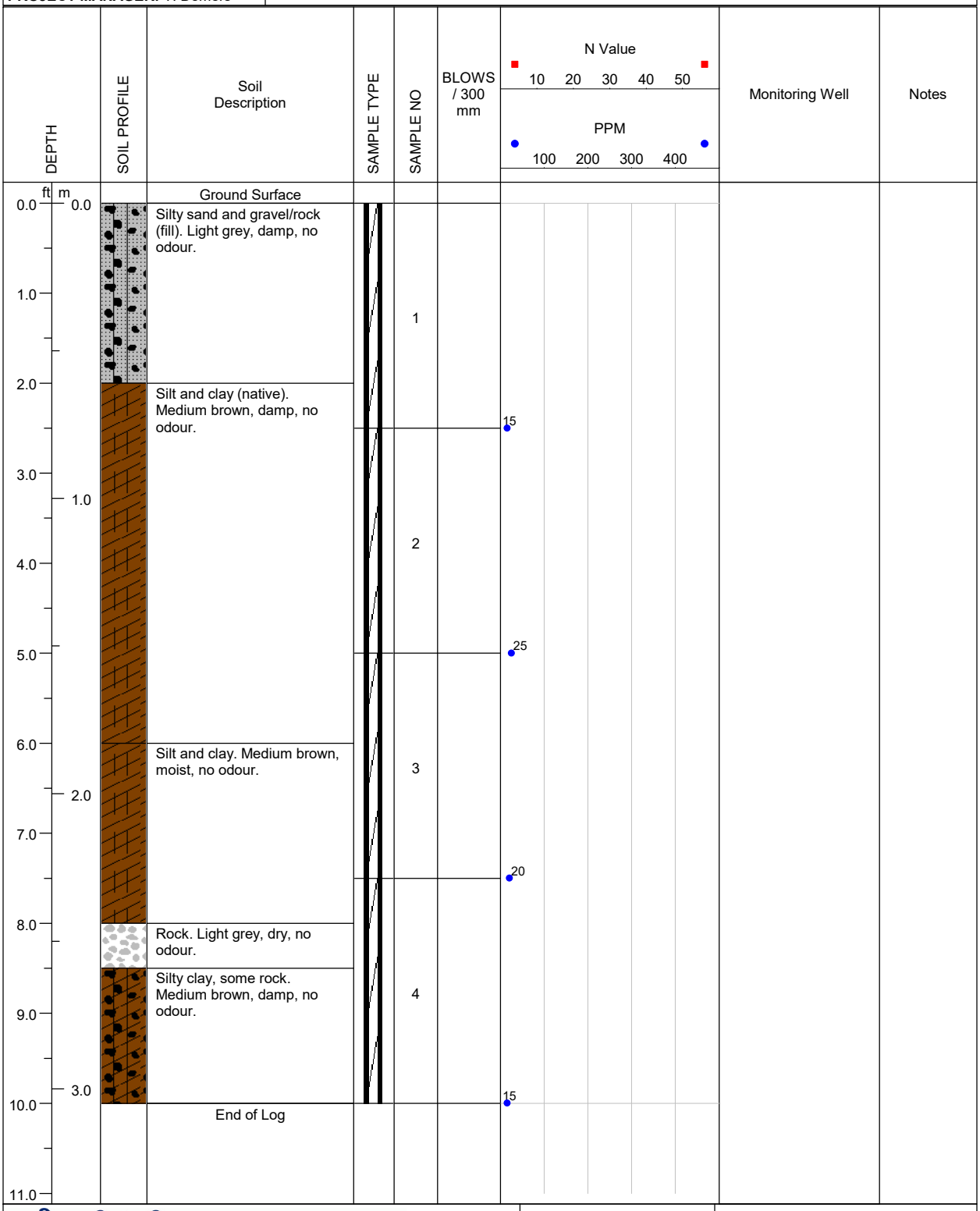
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline	**BOREHOLE NO: 25-8**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

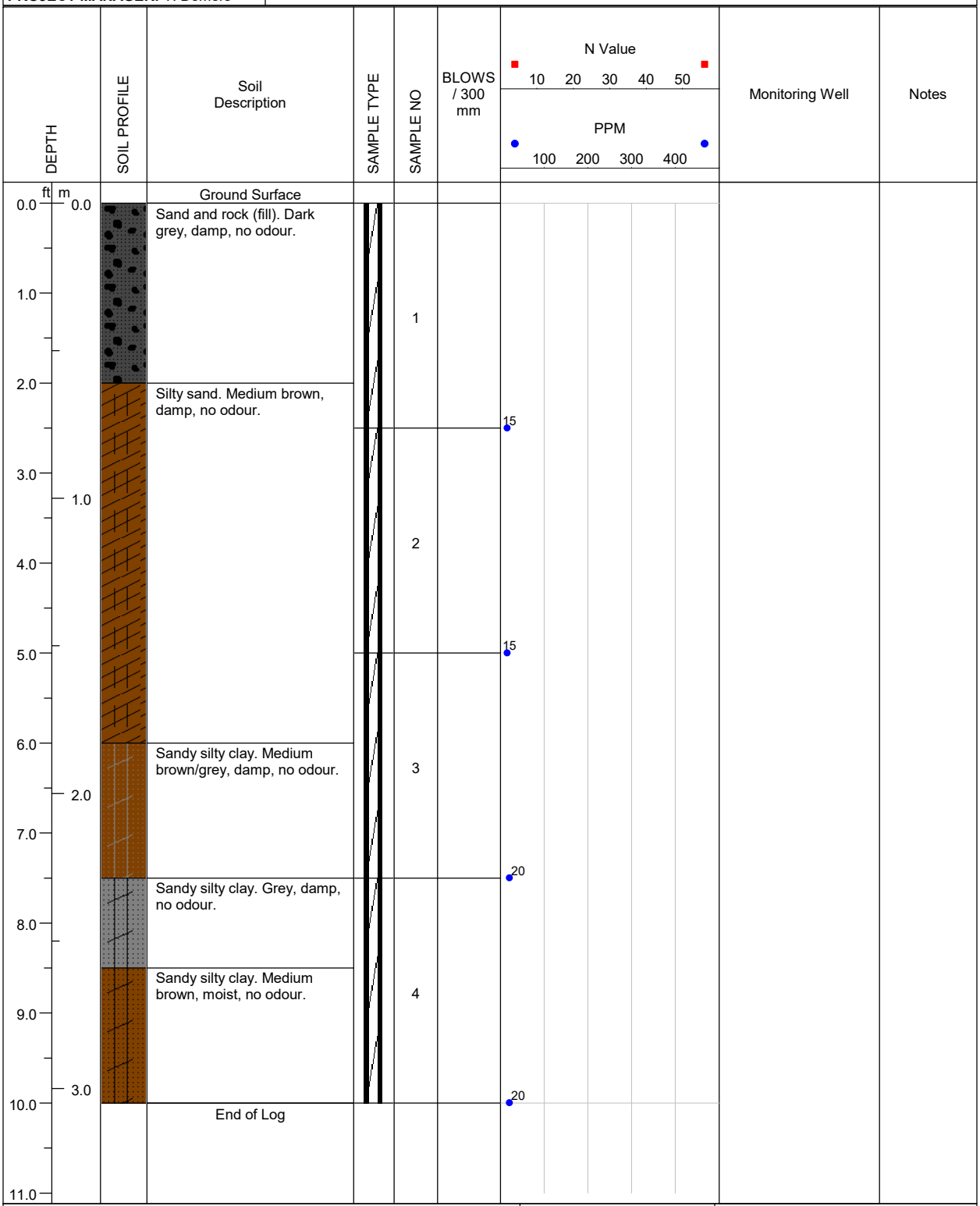
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N boundary, 13m E of 25-1	**BOREHOLE NO: 25-9**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/04/2025	**PAGE:** 1 of 1

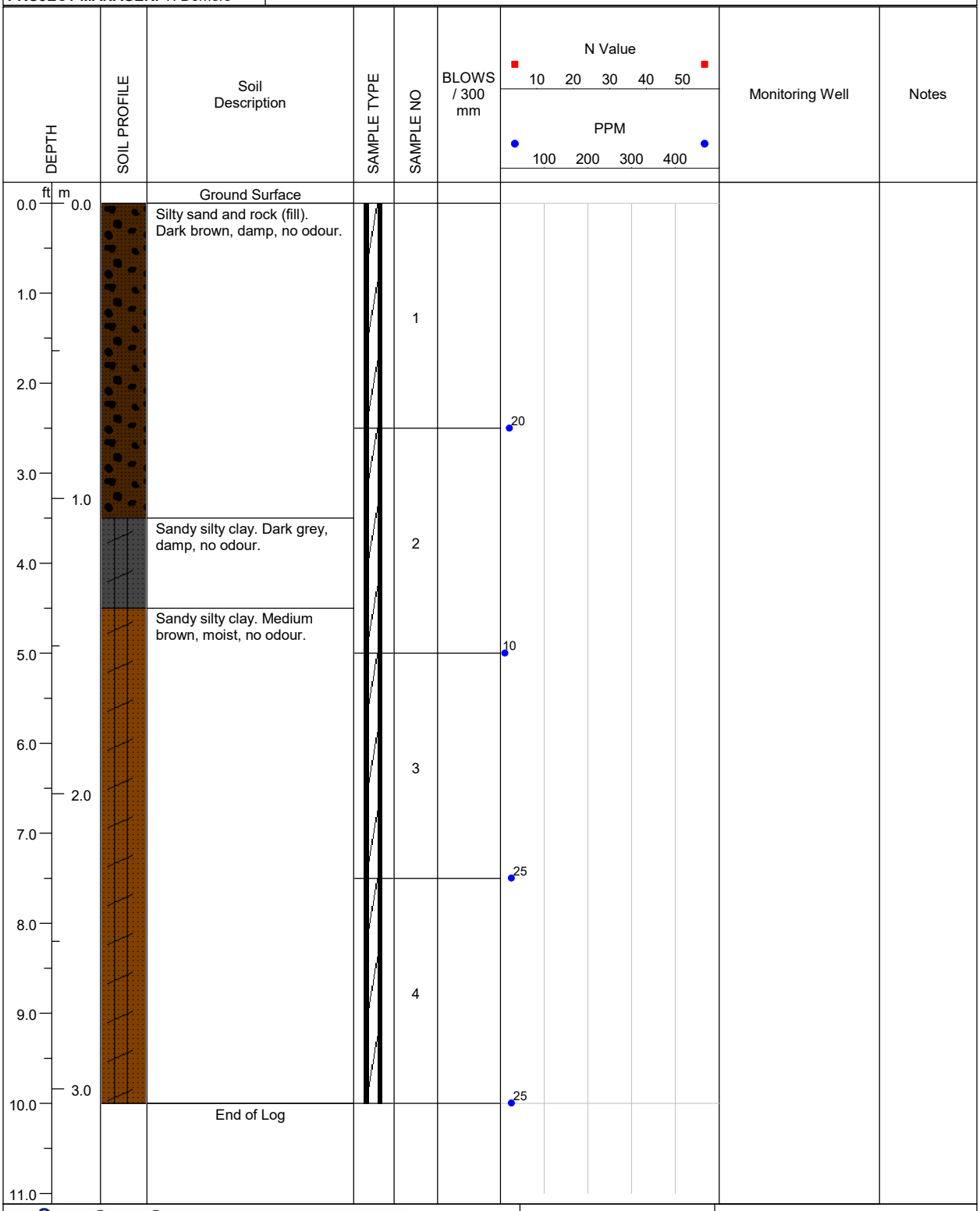
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-9, 13m E of 25-2	**BOREHOLE NO: 25-10**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/04/2025	**PAGE:** 1 of 1

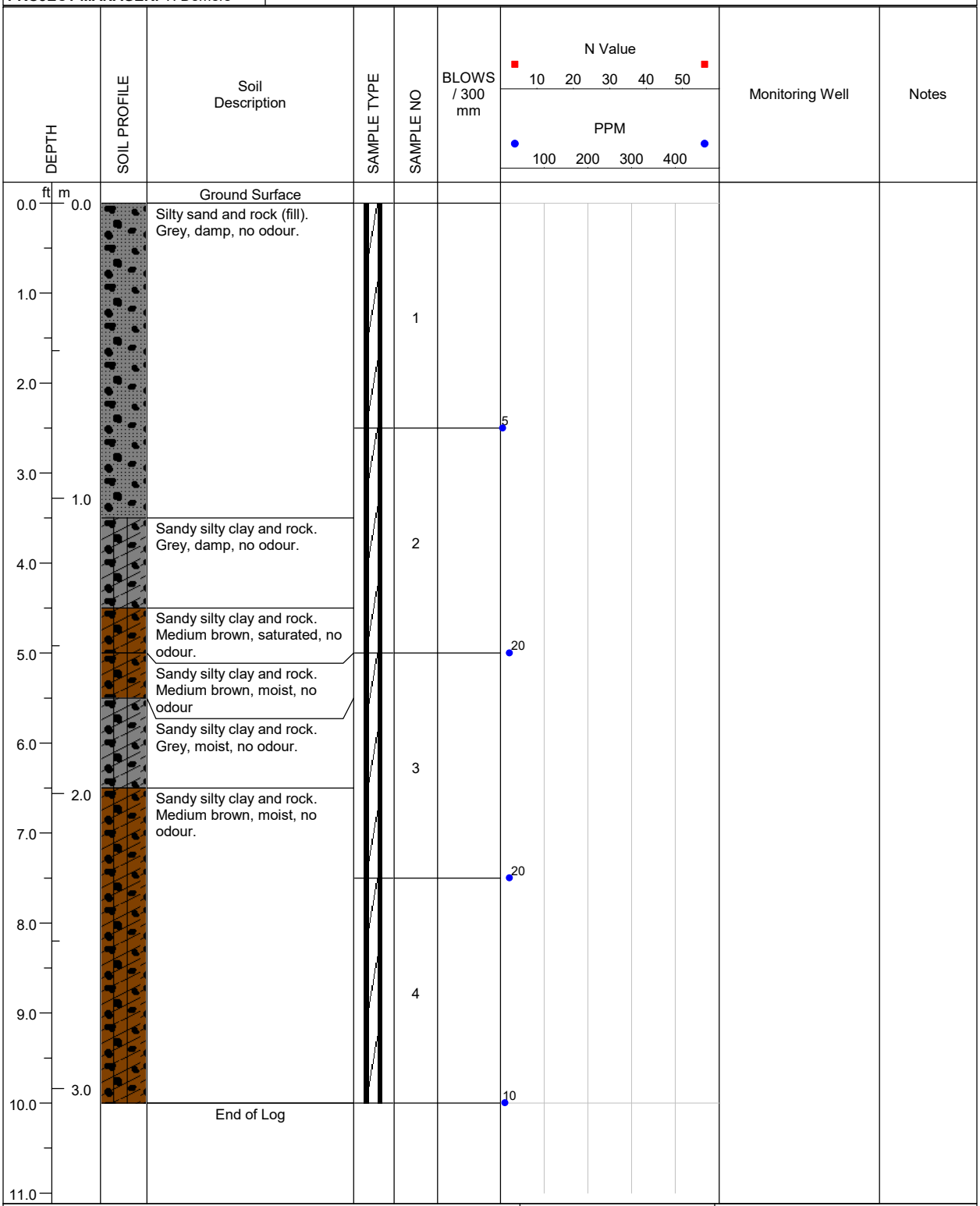
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-10, 13m E of 25-3	**BOREHOLE NO: 25-11**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/04/2025	**PAGE:** 1 of 1

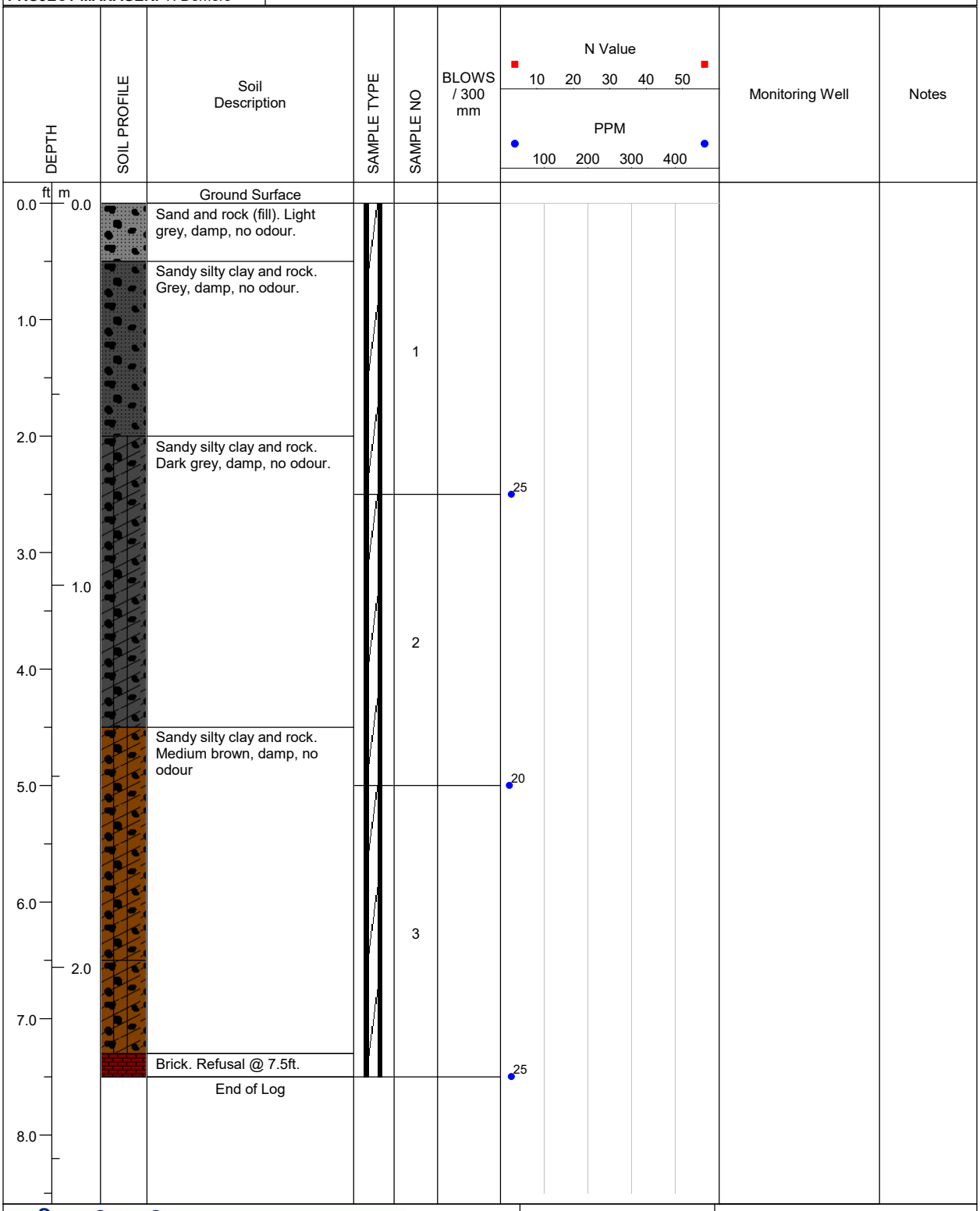
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-11, 13m E of 25-4	**BOREHOLE NO: 25-12**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

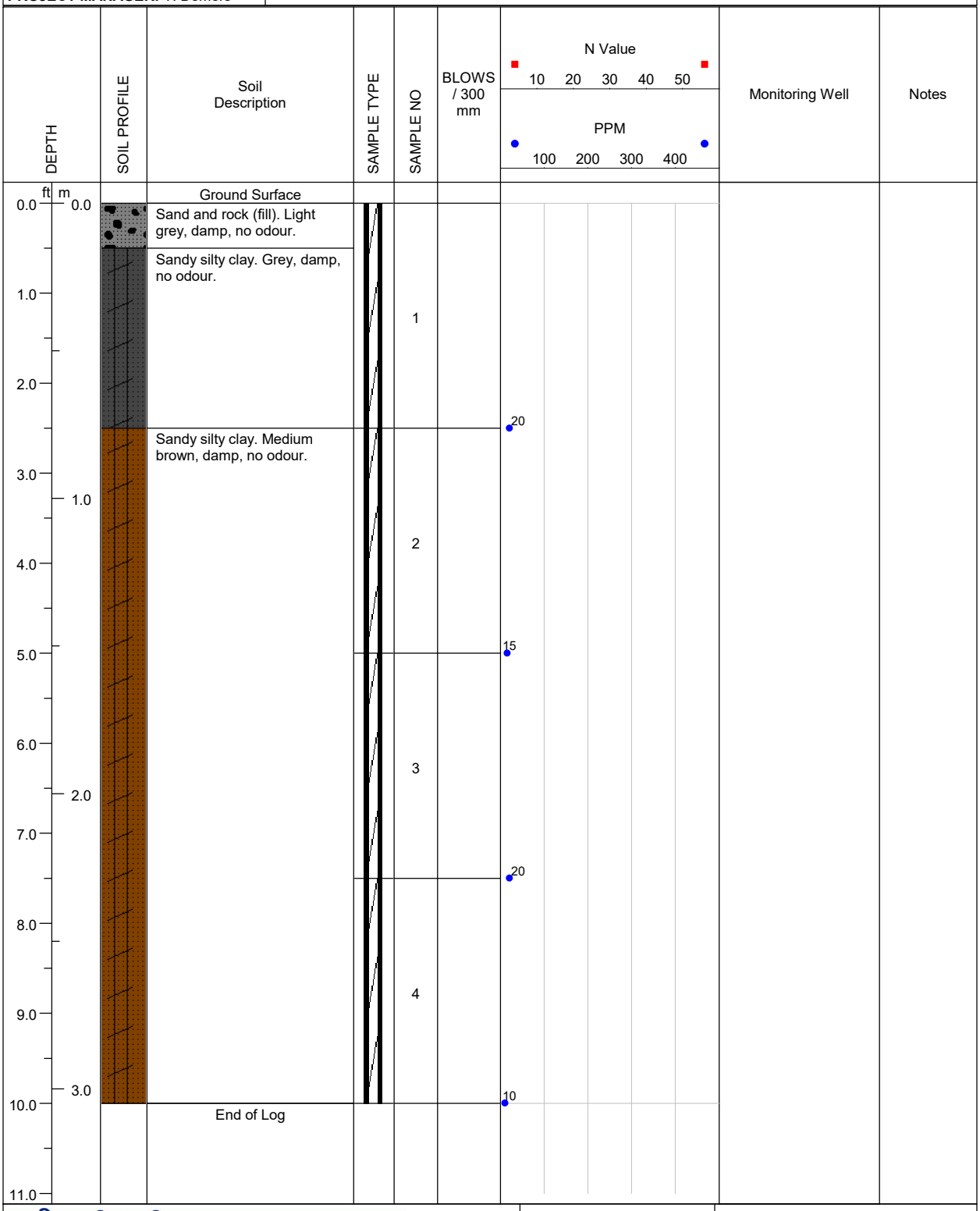
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-12, 13m E of 25-5	**BOREHOLE NO: 25-13**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 7.5ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-13, 13m E of 25-6	**BOREHOLE NO: 25-14**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

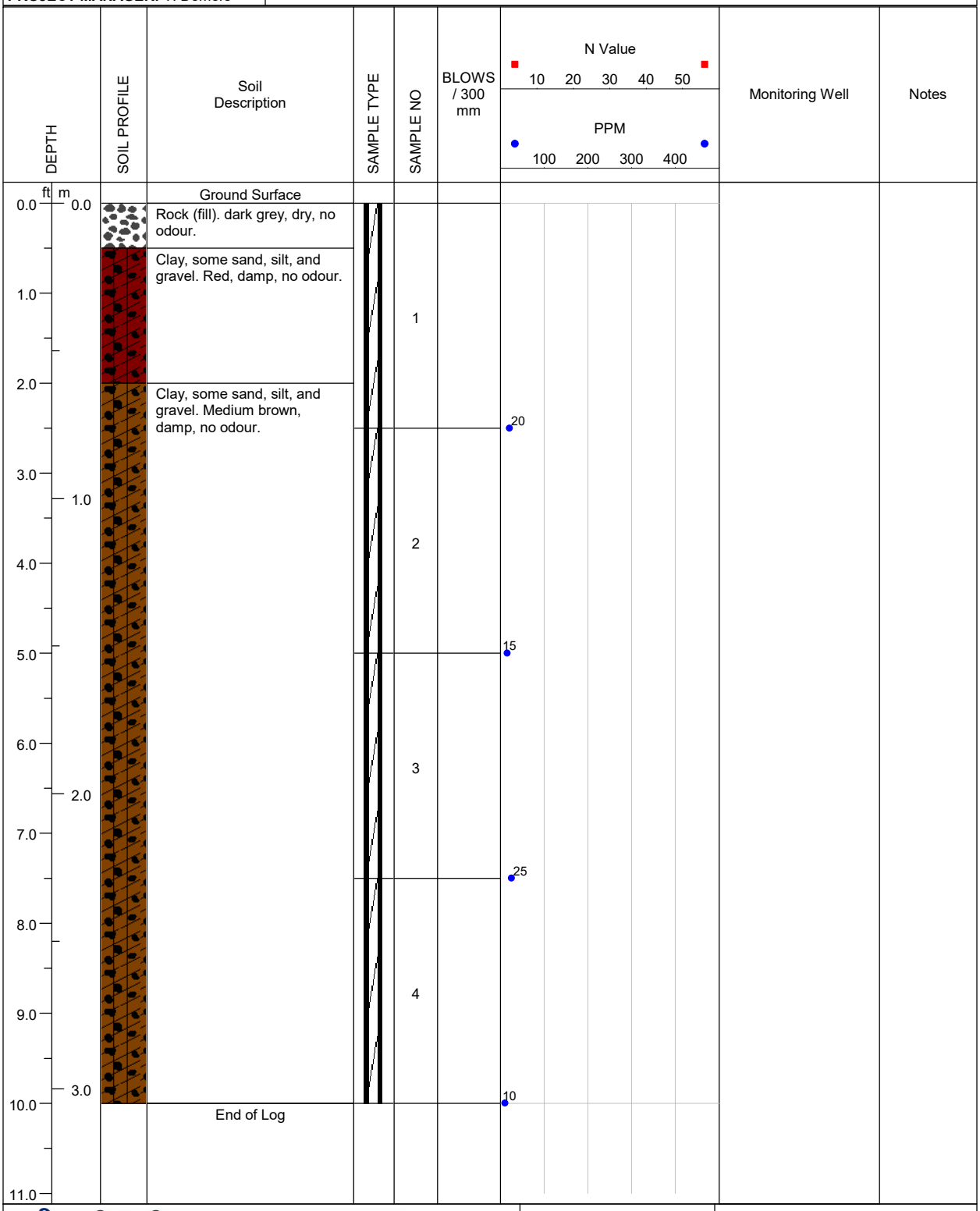
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-14, 13m E of 25-7	**BOREHOLE NO: 25-15**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value (10 20 30 40 50) / PPM (100 200 300 400)	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0	0.0	Sand and rock (fill). Light brown, damp, no odour.					
1.0		Rock. Light grey, dry, no odour.					
1.0		Sandy silty clay and gravel. Red, damp, no odour.	1		10		
2.0							
3.0	1.0		2				
4.0					20		
5.0							
6.0			3				
7.0	2.0				20		
8.0							
9.0			4				
10.0	3.0	End of Log			15		
11.0							

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

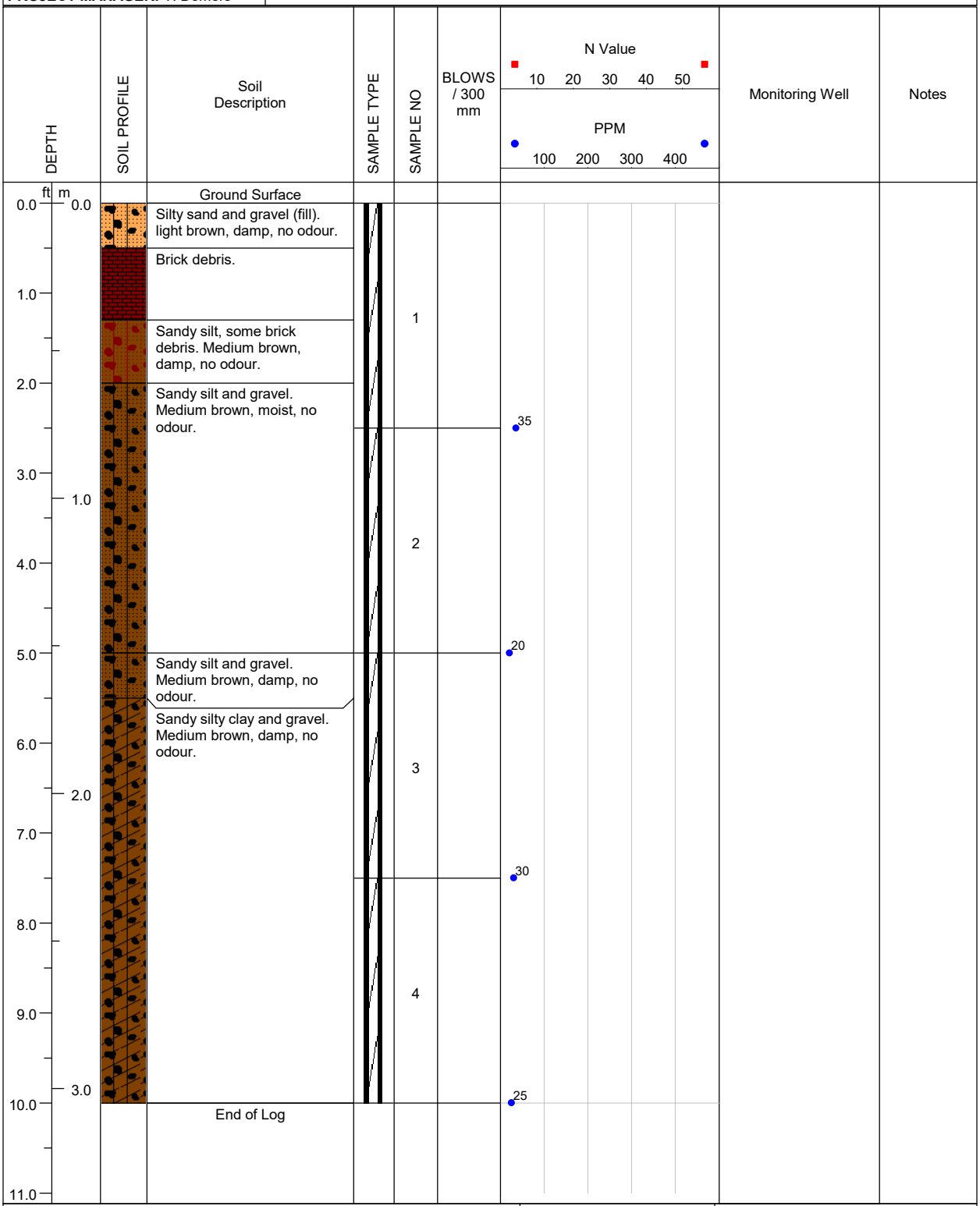
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NE of S fence line, 13m E of 25-8	**BOREHOLE NO: 25-16**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



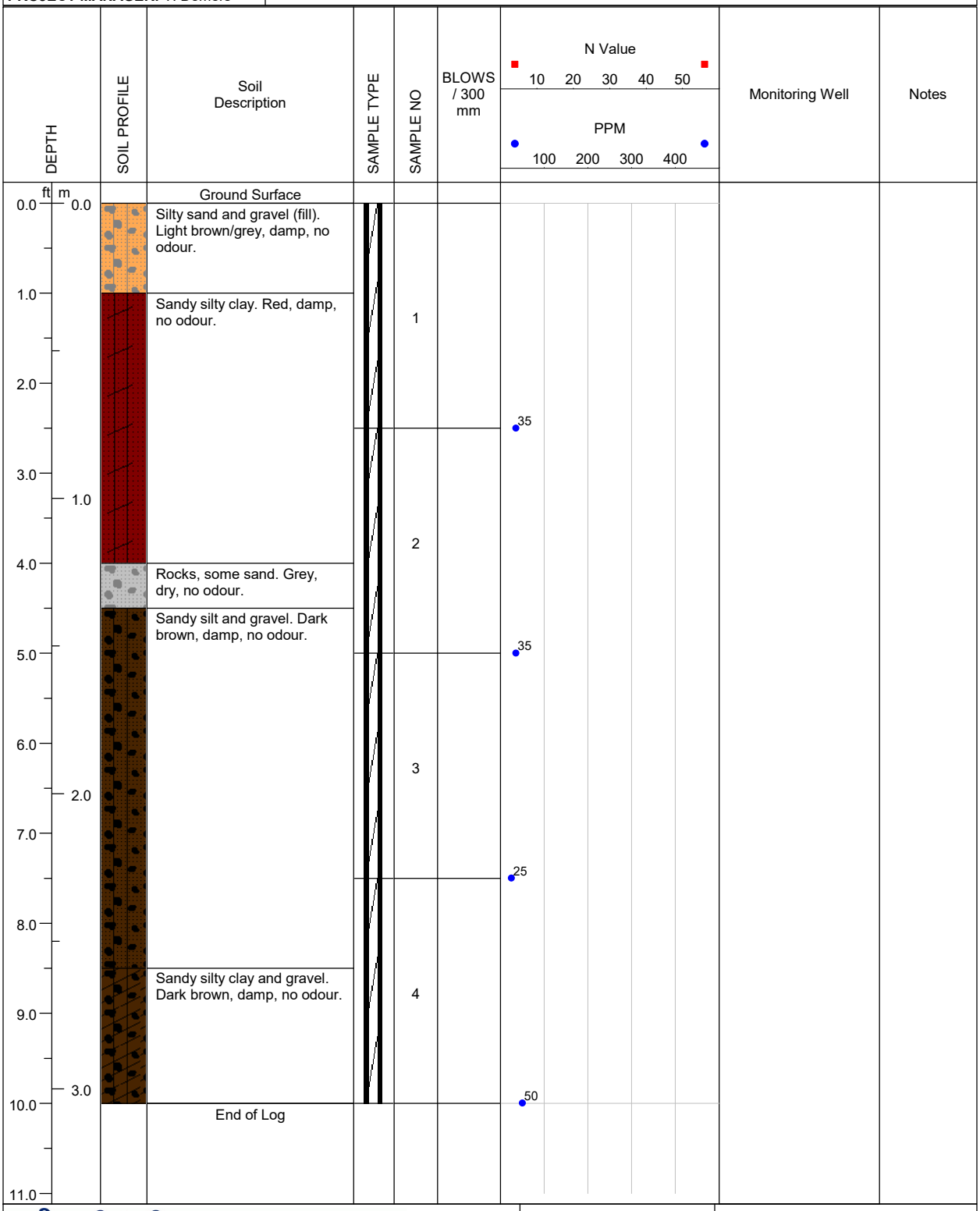
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/14/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S boundary, 13m E of 25-16	**BOREHOLE NO: 25-17**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

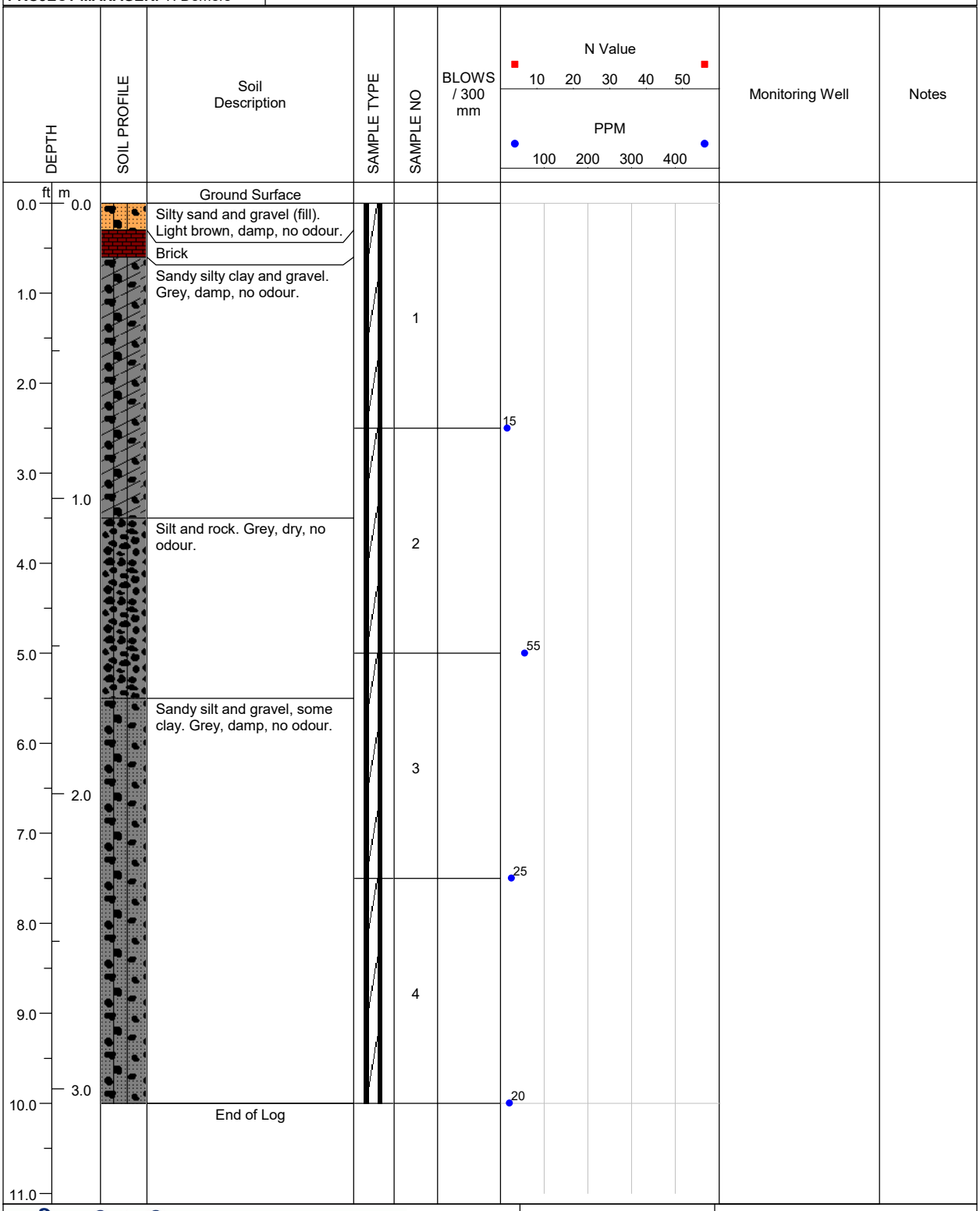
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-17	**BOREHOLE NO: 25-18**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

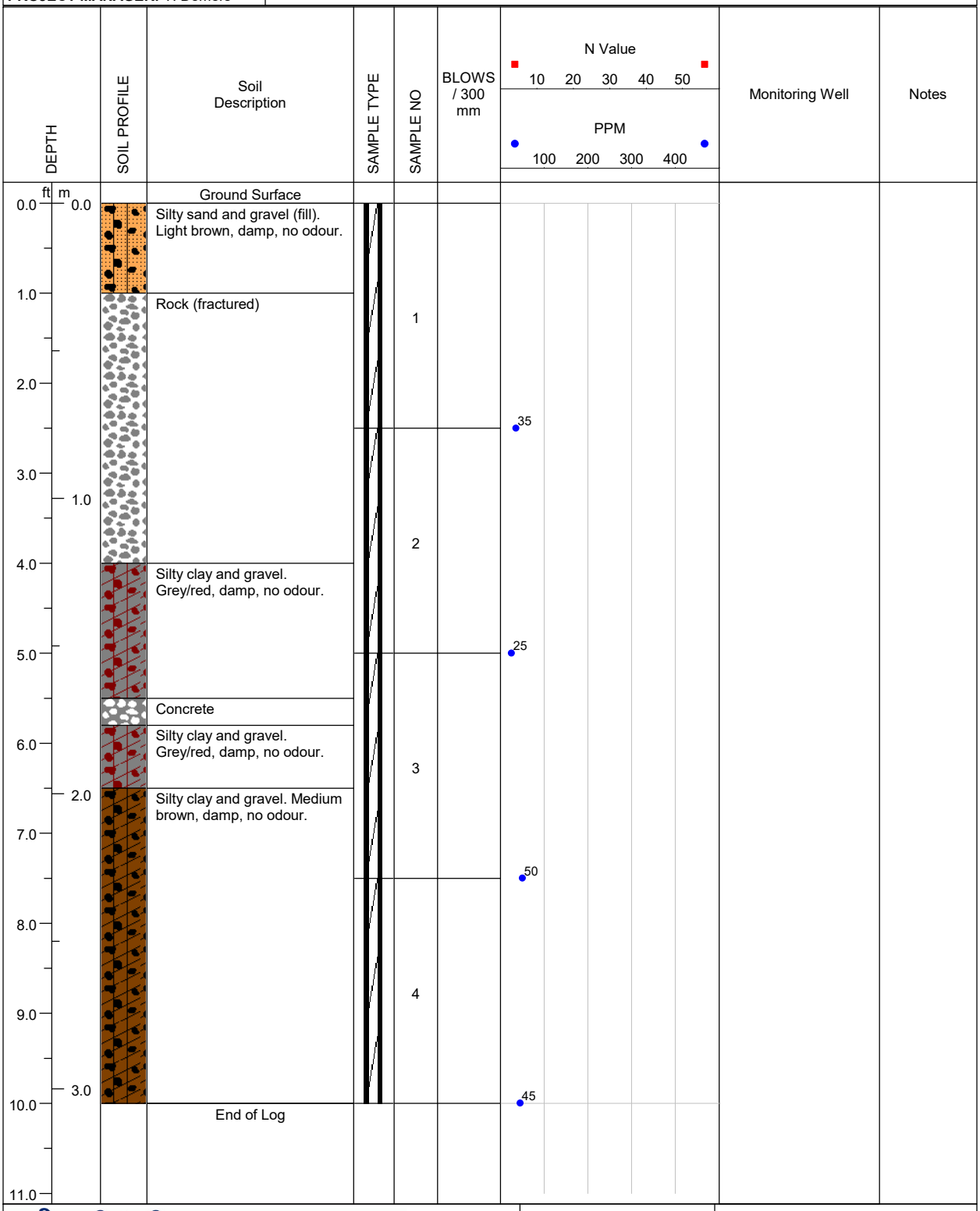
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-18	**BOREHOLE NO: 25-19**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

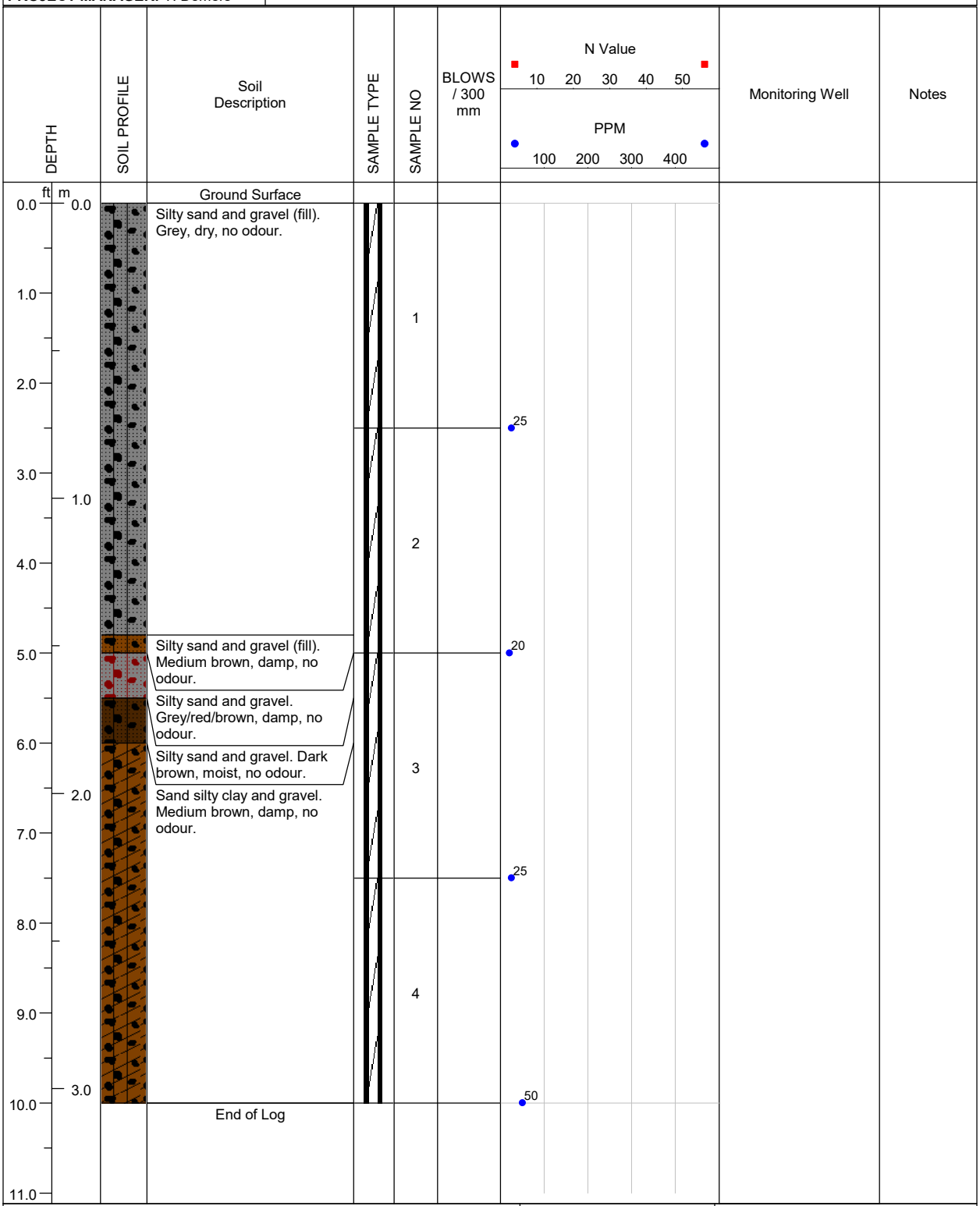
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-19	**BOREHOLE NO: 25-20**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-20	**BOREHOLE NO: 25-21**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-21	**BOREHOLE NO: 25-22**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
		Rock and silt. Grey, dry, no odour.	1		35		
		Silt, rock, and brick. Grey/red, dry, no odour.					
	1.0	Silt, rock and brick. Medium brown/red, dry, no odour.	2		35		
		Silt and rock. Grey, moist, no odour.					
		Sandy silty clay and gravel. Medium brown, damp, no odour.	3		30		
	2.0						
		Sandy silty clay. Medium brown, moist, no odour.	4		50		
	3.0						
10.0		End of Log					
11.0							

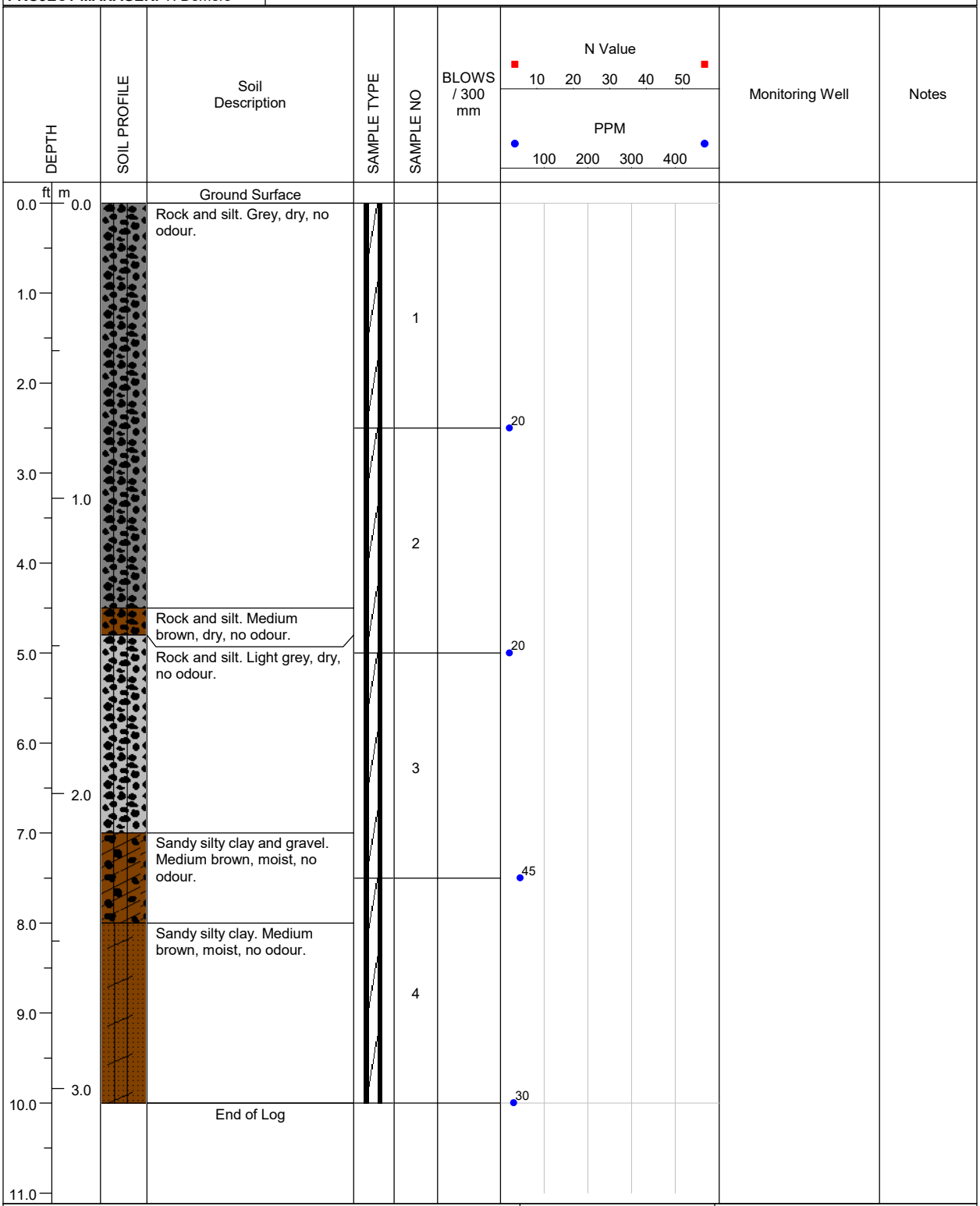
N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

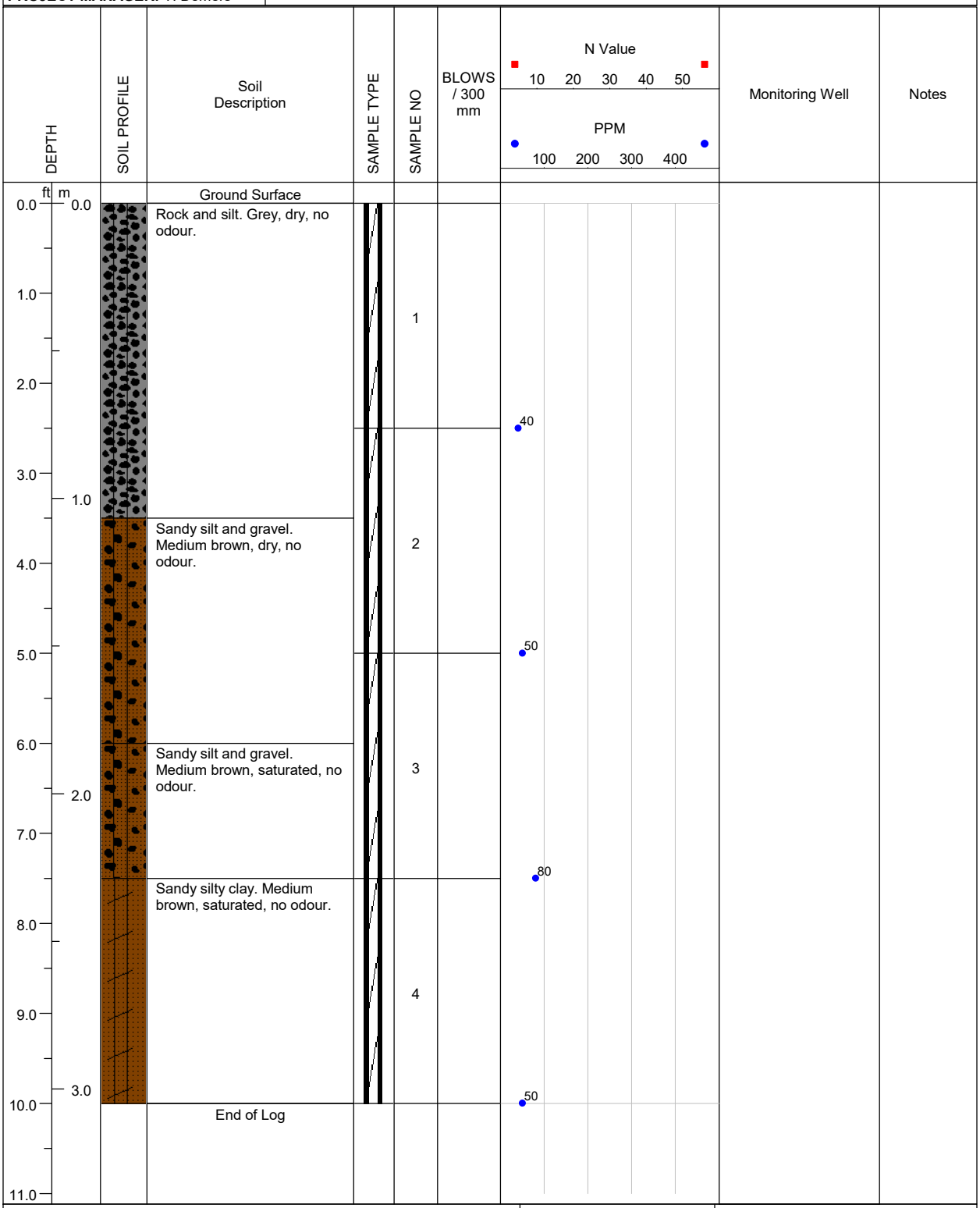
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of 25-22	**BOREHOLE NO: 25-23**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

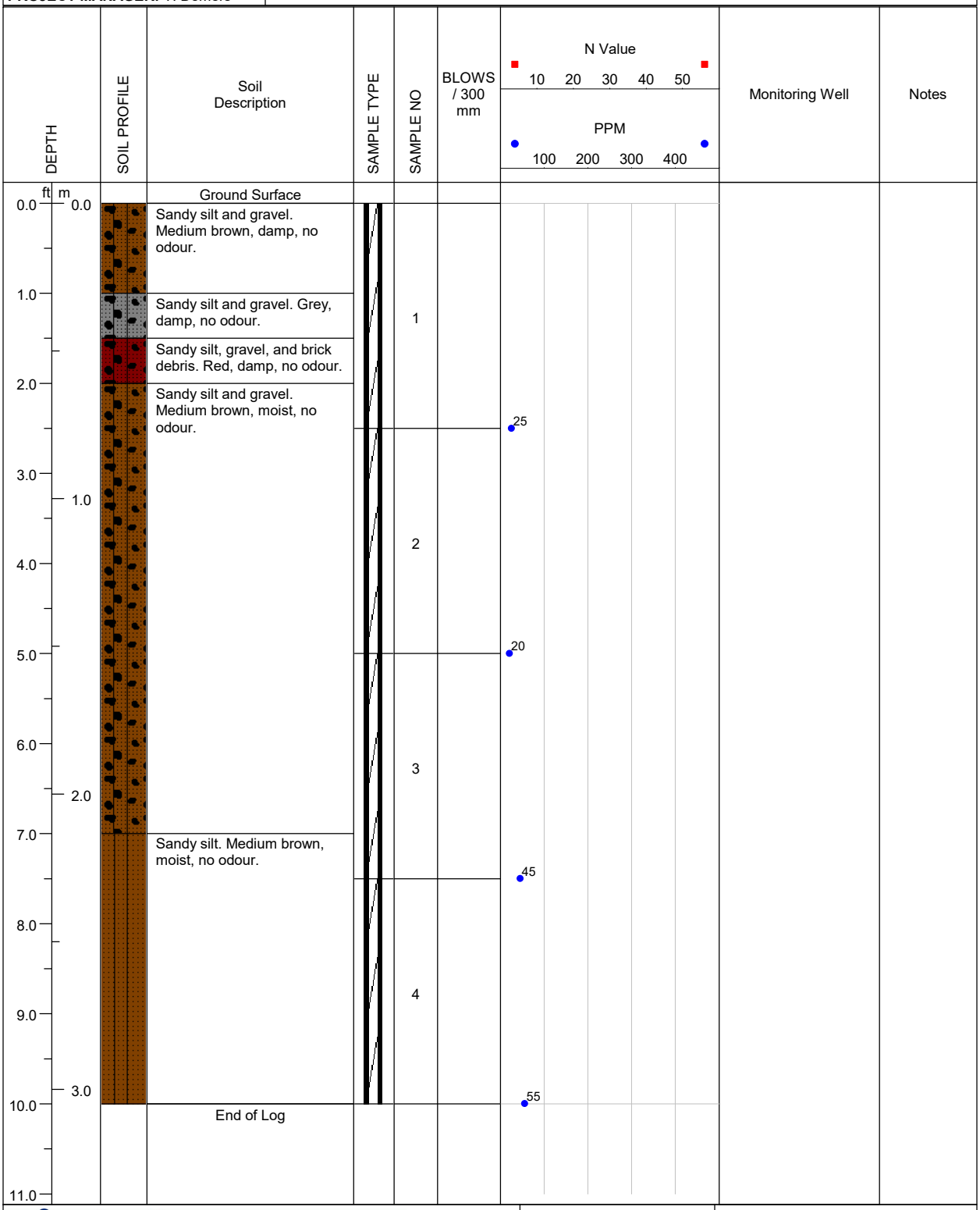
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N boundary, 13m E of 25-9	**BOREHOLE NO: 25-24**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

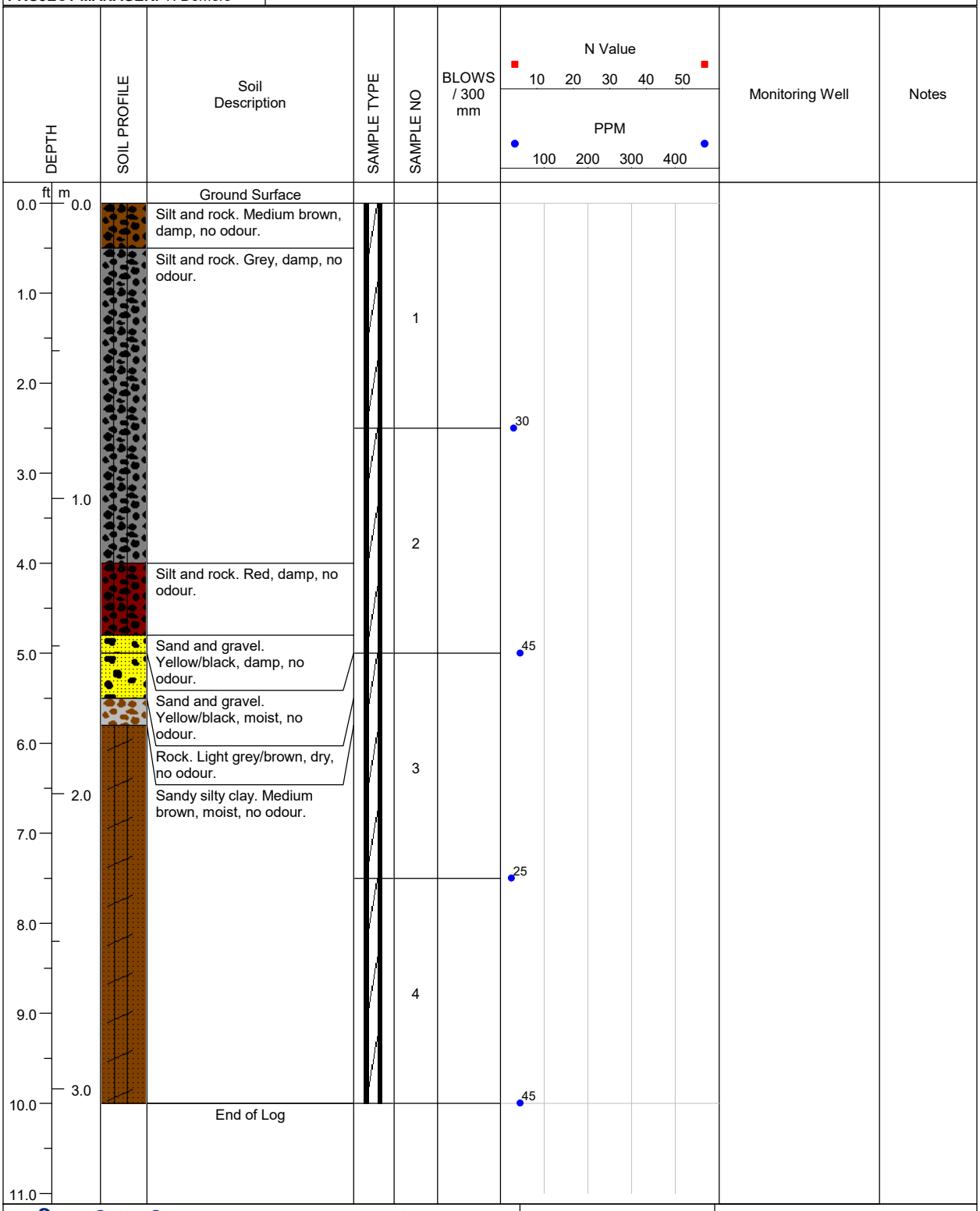
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-24	**BOREHOLE NO: 25-25**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

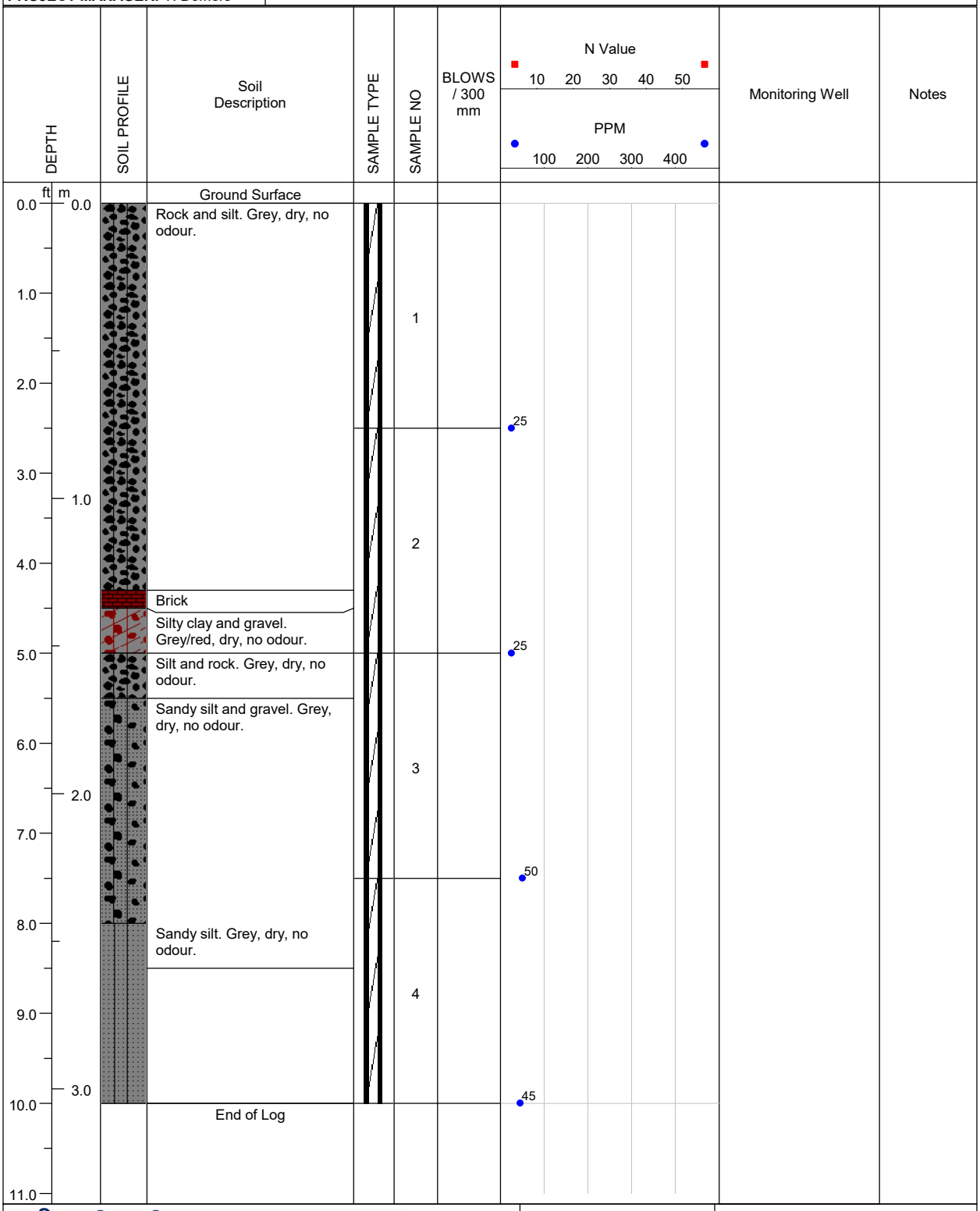
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-25	**BOREHOLE NO: 25-26**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

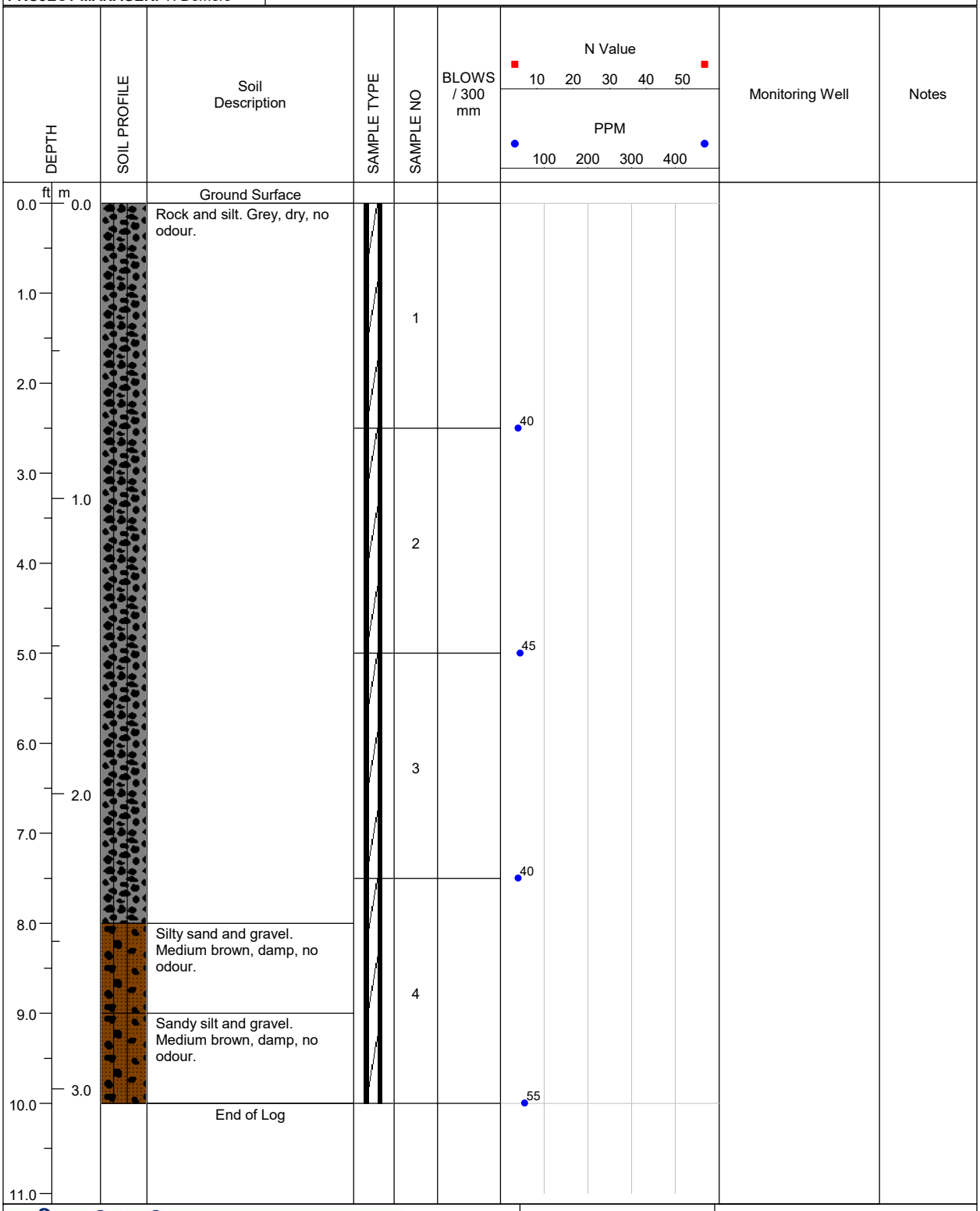
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-26	**BOREHOLE NO: 25-27**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

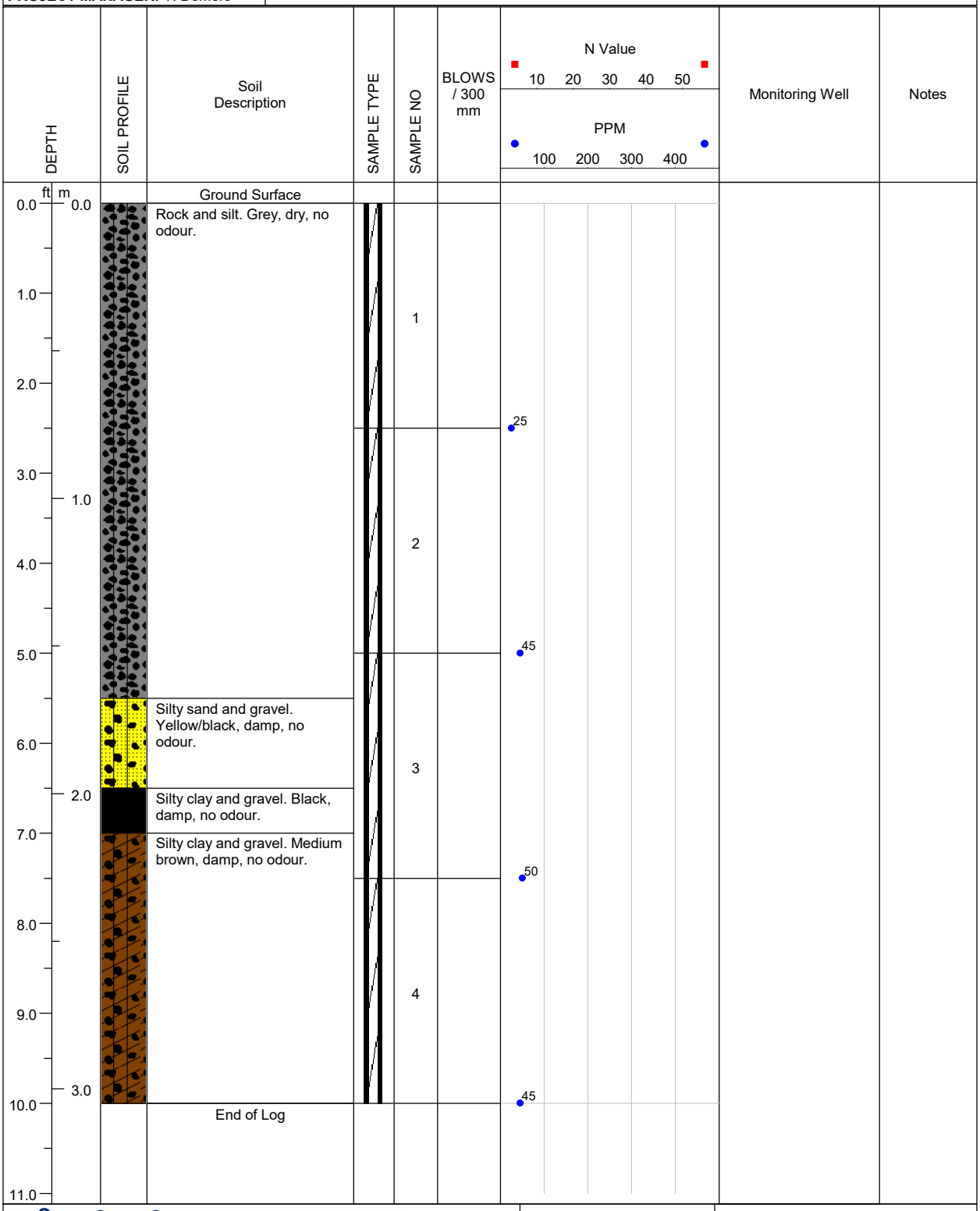
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-27	**BOREHOLE NO: 25-28**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

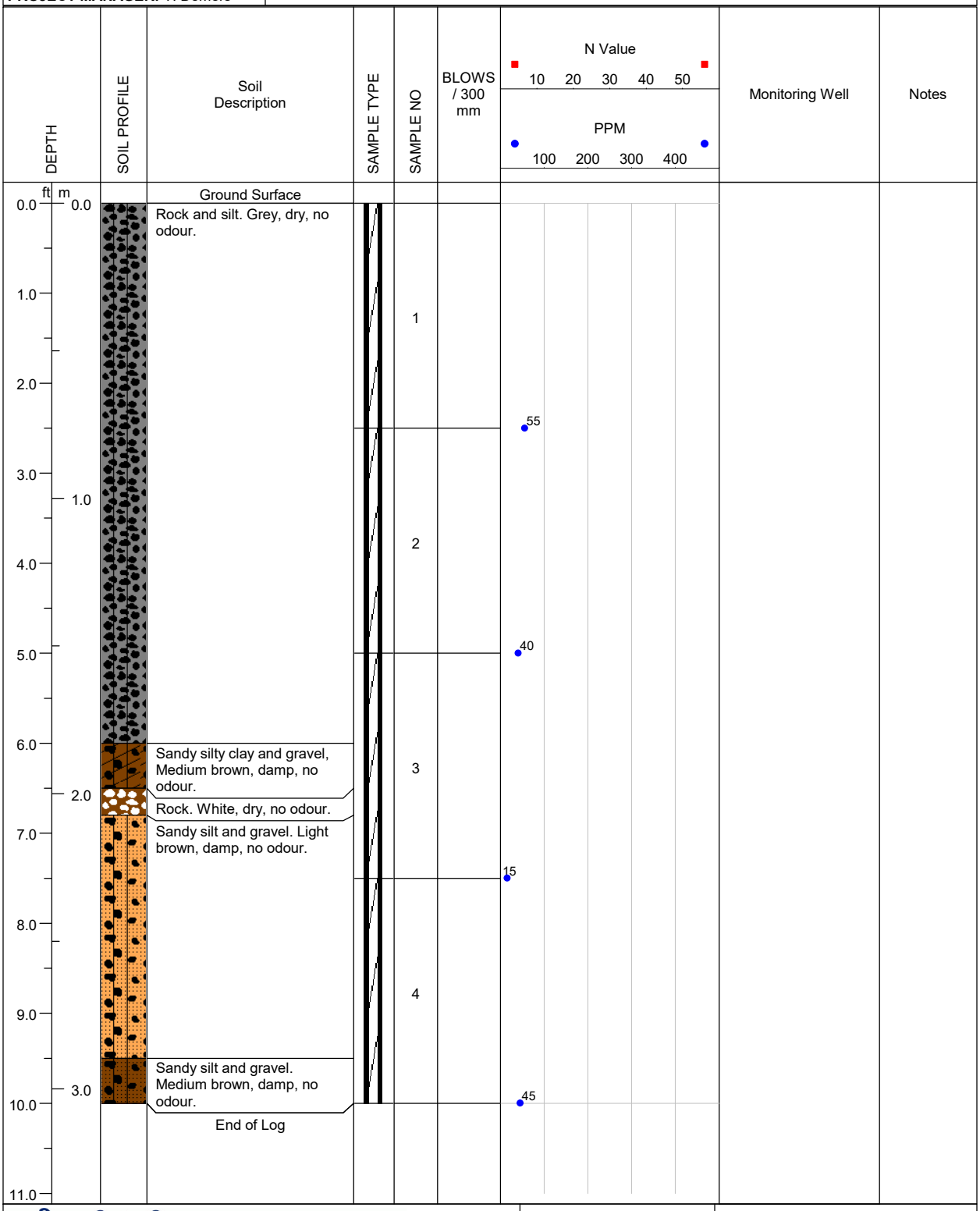
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-28	**BOREHOLE NO: 25-29**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-29	**BOREHOLE NO: 25-30**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m SE of 25-30	**BOREHOLE NO: 25-31**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0	0.0	Silty sand and rock. Light brown, dry, no odour.					
1.0		Sandy silt and gravel, Medium brown/red, damp, no odour.	1				
2.0		Sandy silt and gravel. Grey, damp, no odour.			30		
3.0	1.0		2				
4.0							
5.0		Sandy silt and gravel. Medium brown, damp, no odour.			35		
6.0			3				
7.0	2.0	Sandy silt and gravel. Medium brown, moist, no odour.			35		
8.0							
9.0			4				
10.0	3.0	Concrete. White, dry, no odour.			50		
		End of Log					
11.0							

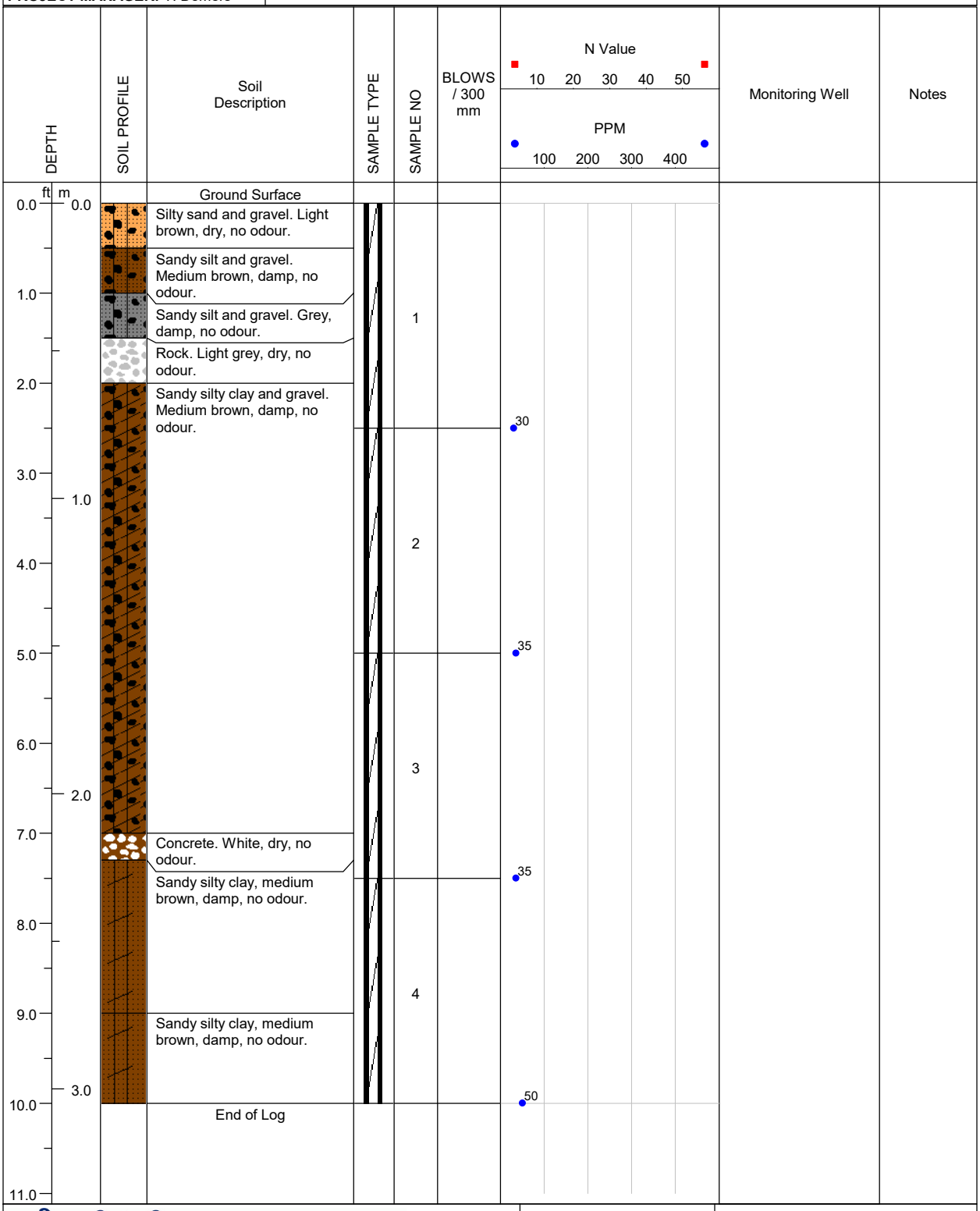
N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

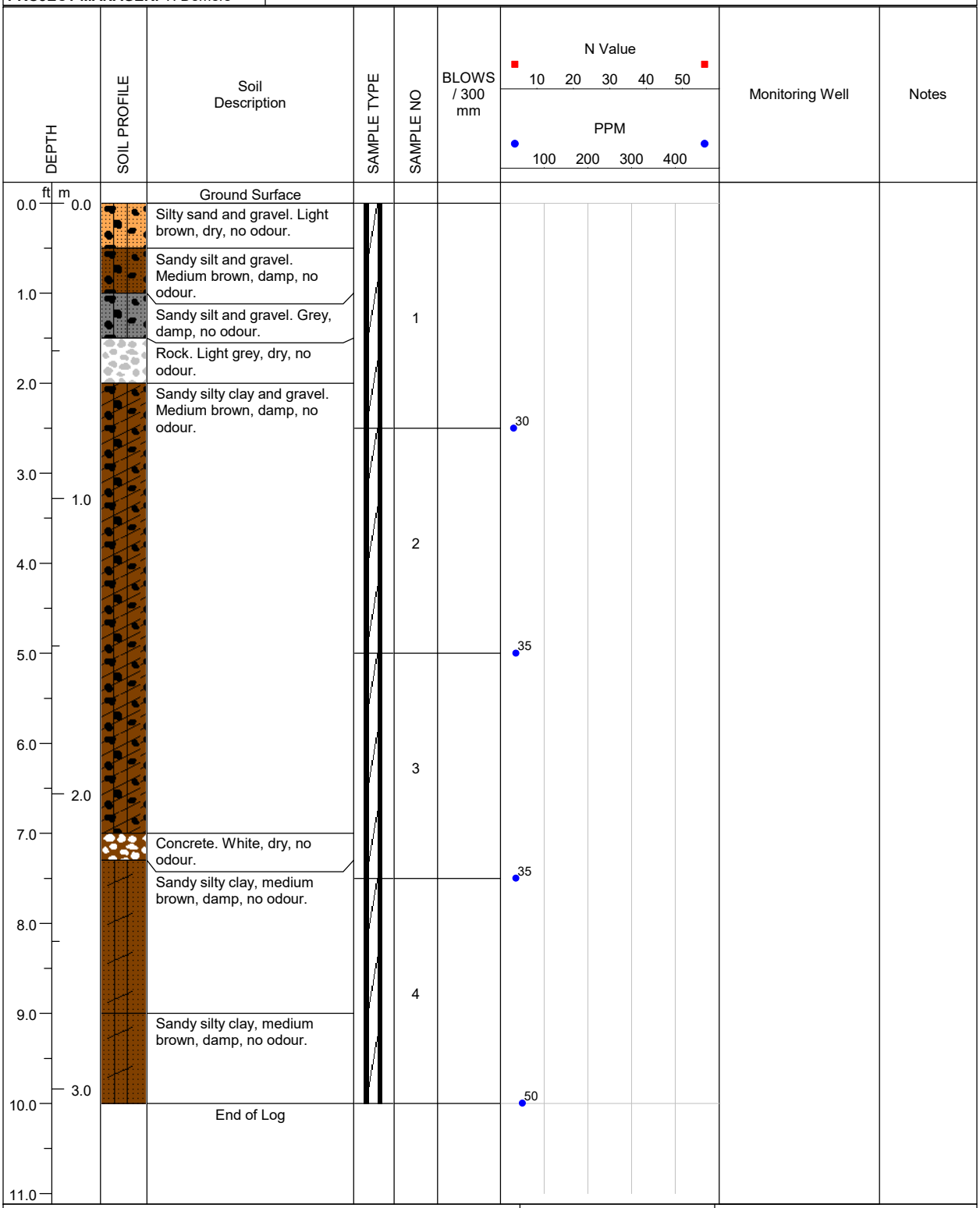
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-17	**BOREHOLE NO: 25-32**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

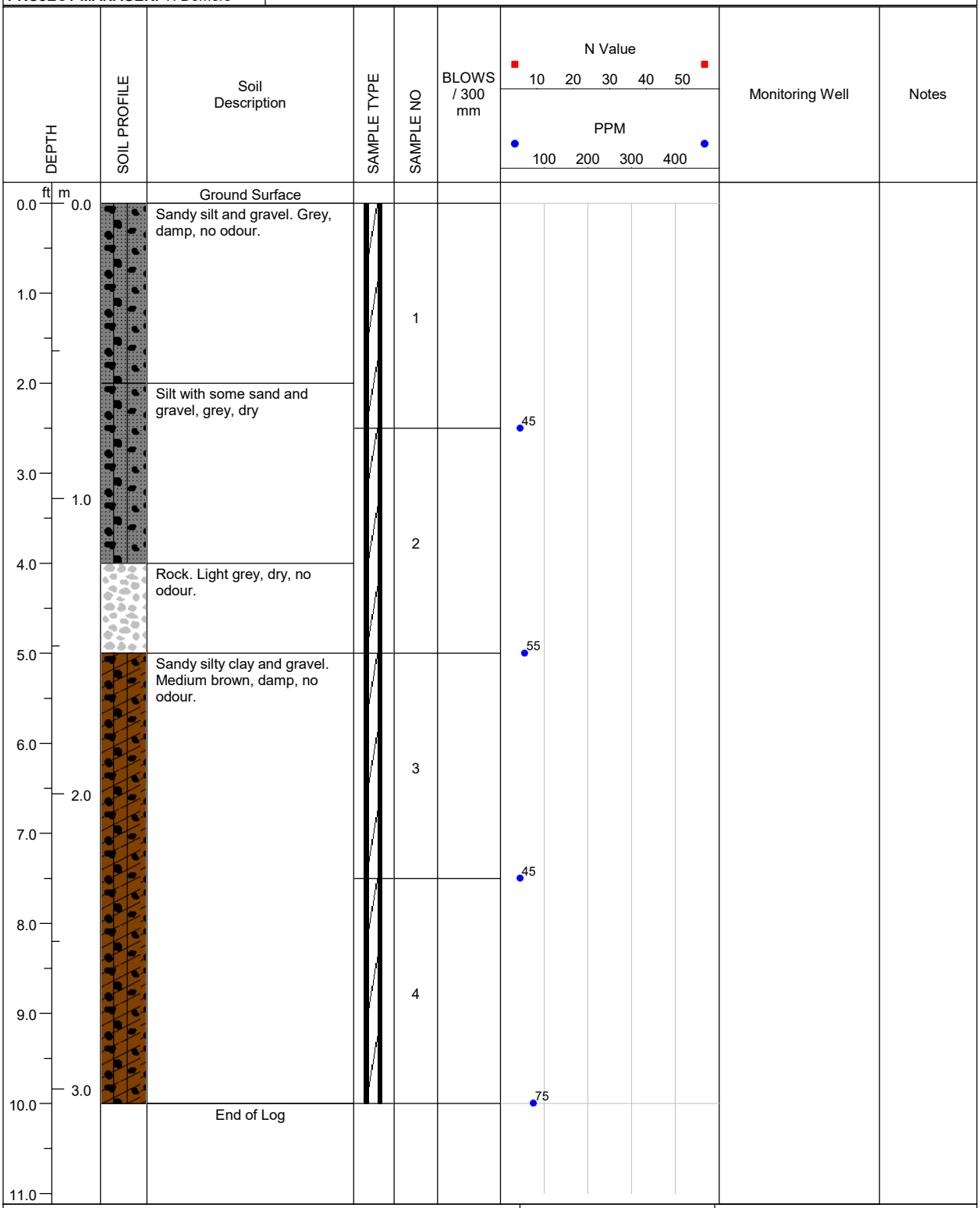
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-32	**BOREHOLE NO: 25-33**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

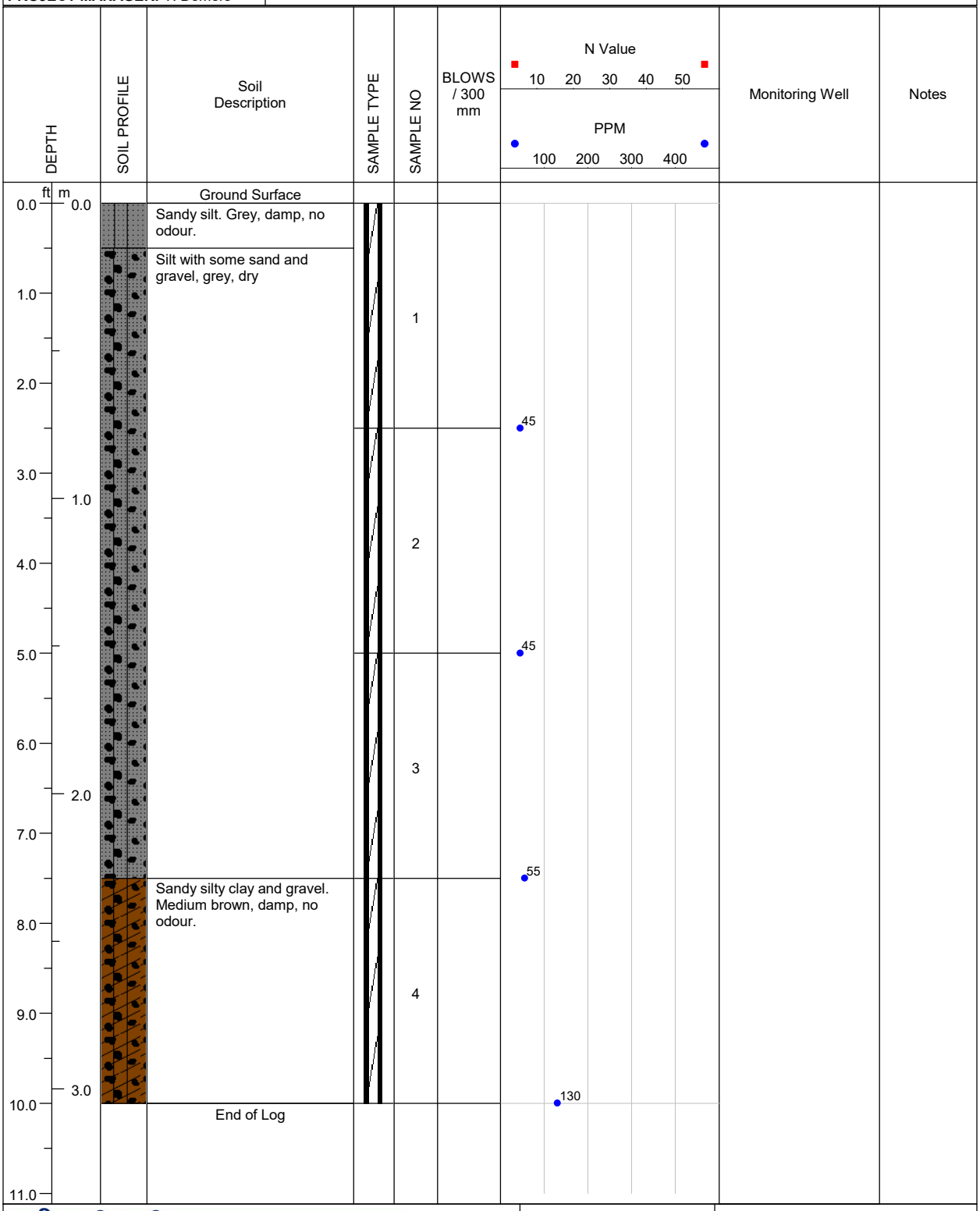
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-31	**BOREHOLE NO: 25-34**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

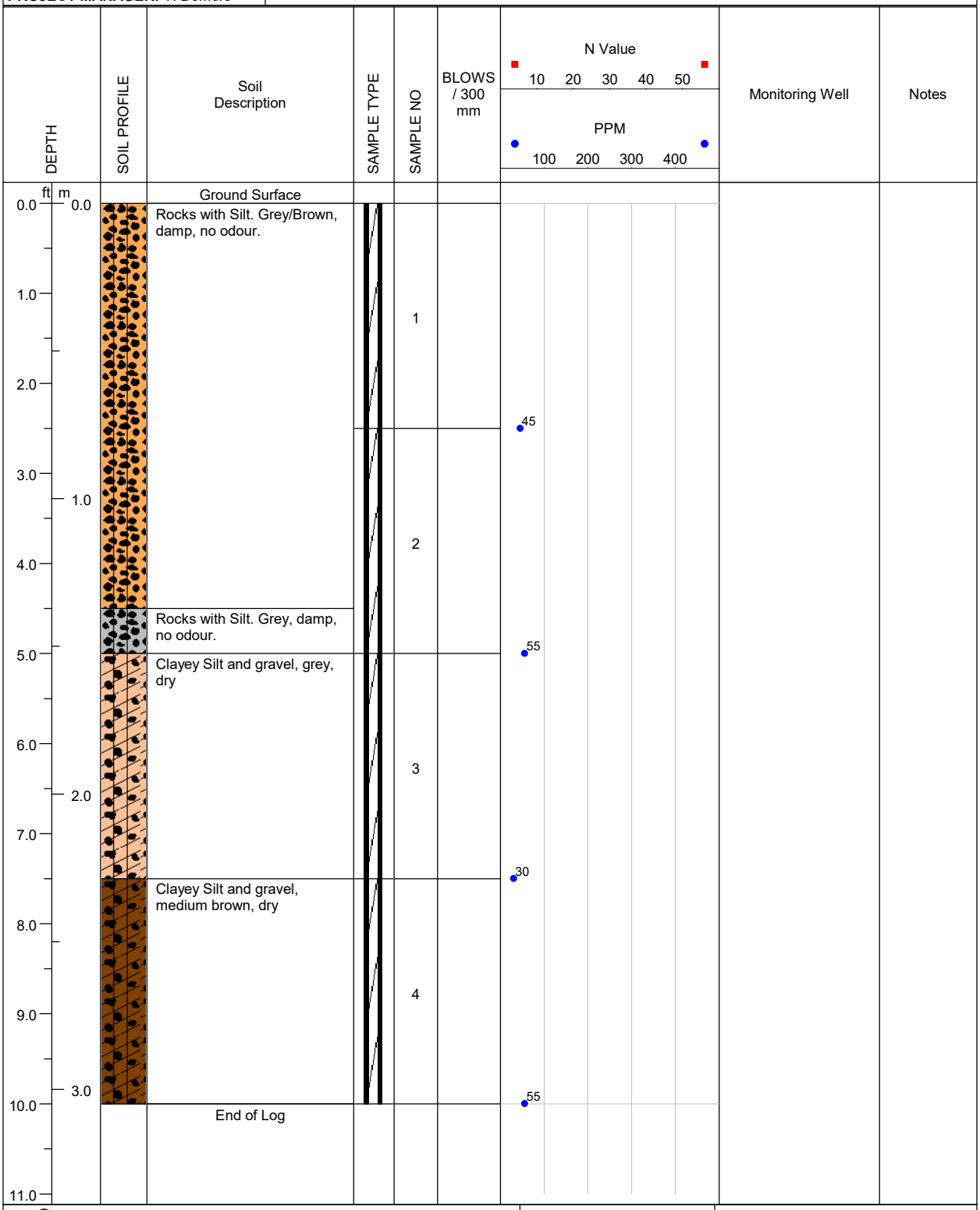
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-30	**BOREHOLE NO: 25-35**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

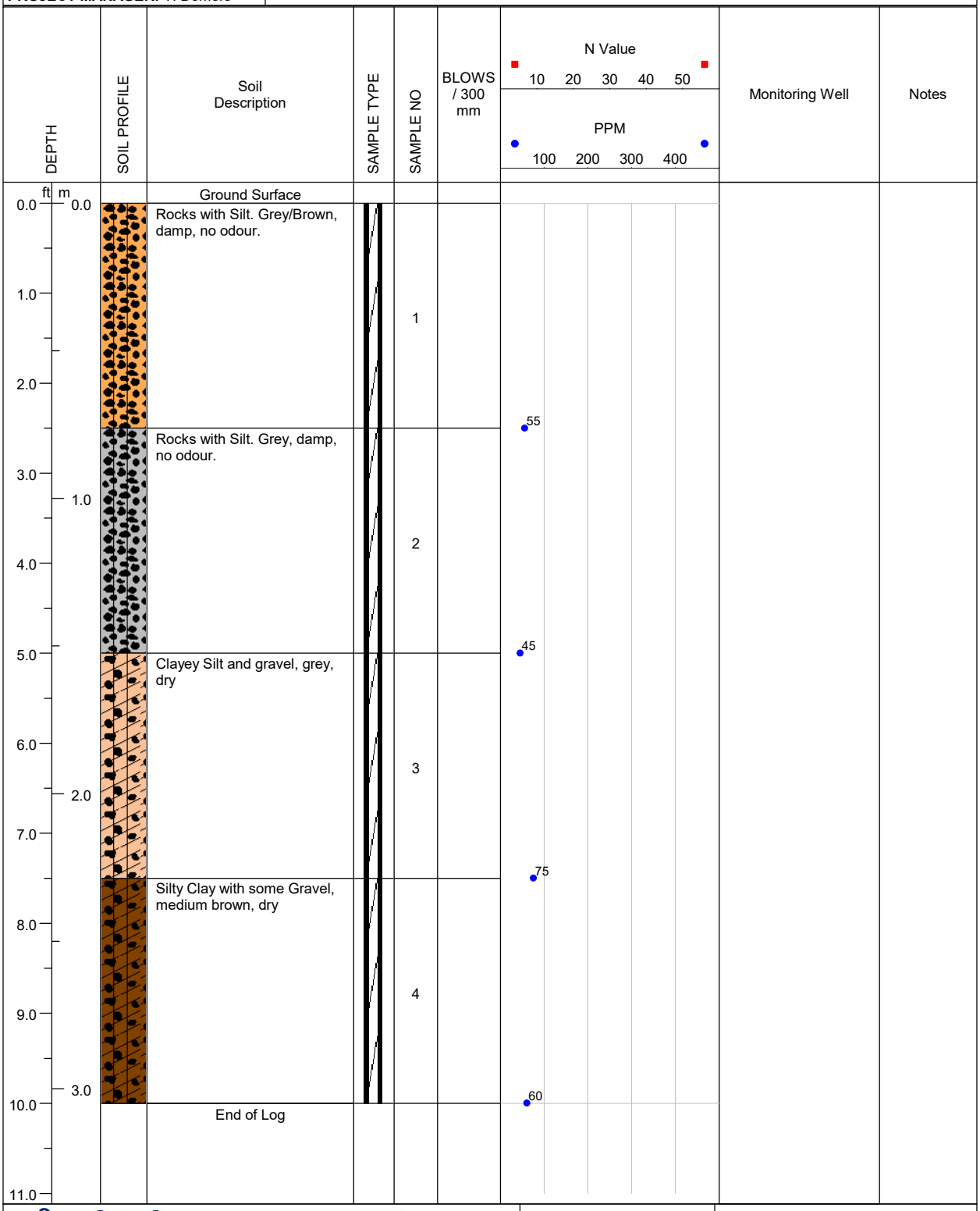
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-29	**BOREHOLE NO: 25-36**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



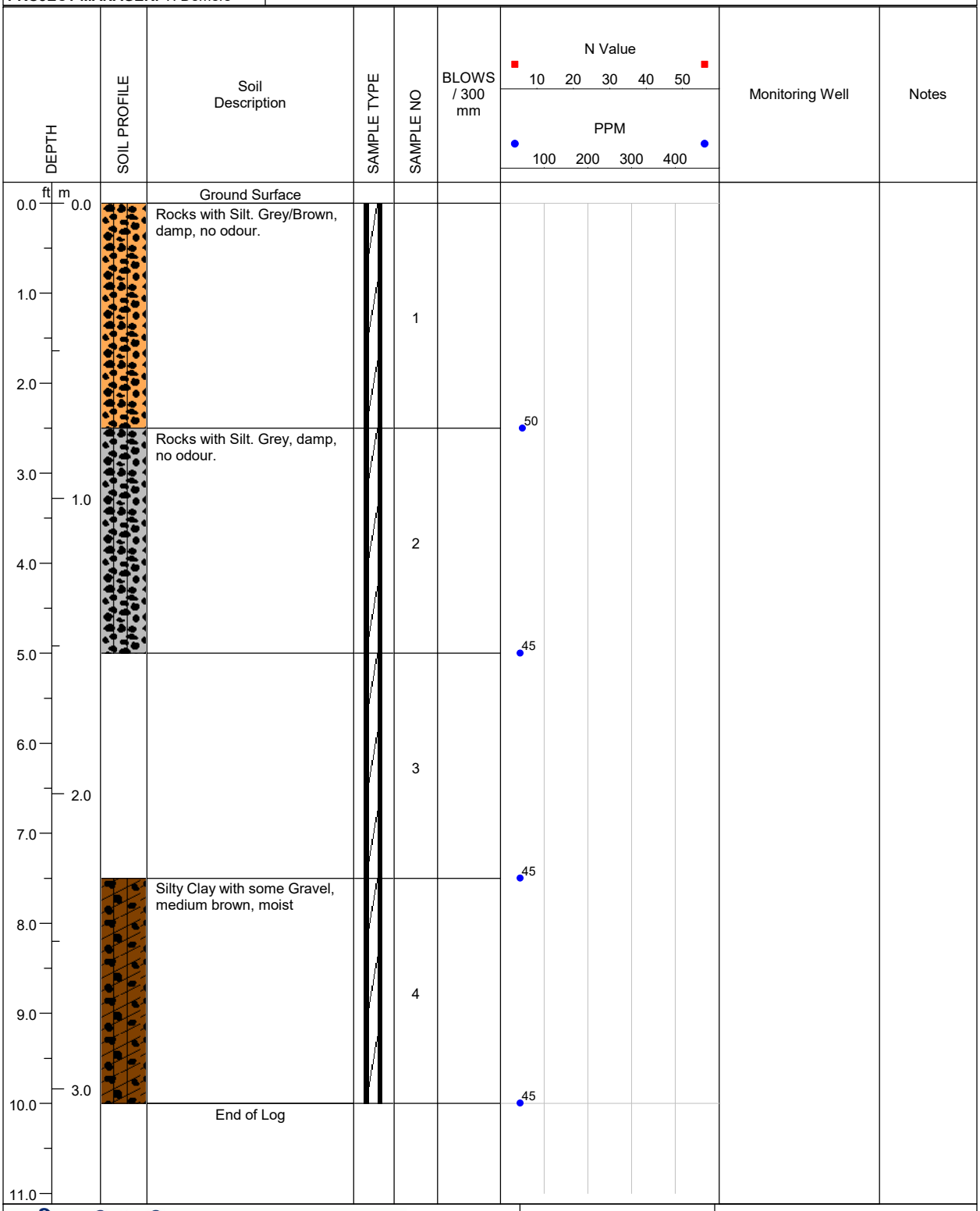
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 57m NW of S fenceline, 13m E of 25-28	**BOREHOLE NO: 25-37**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

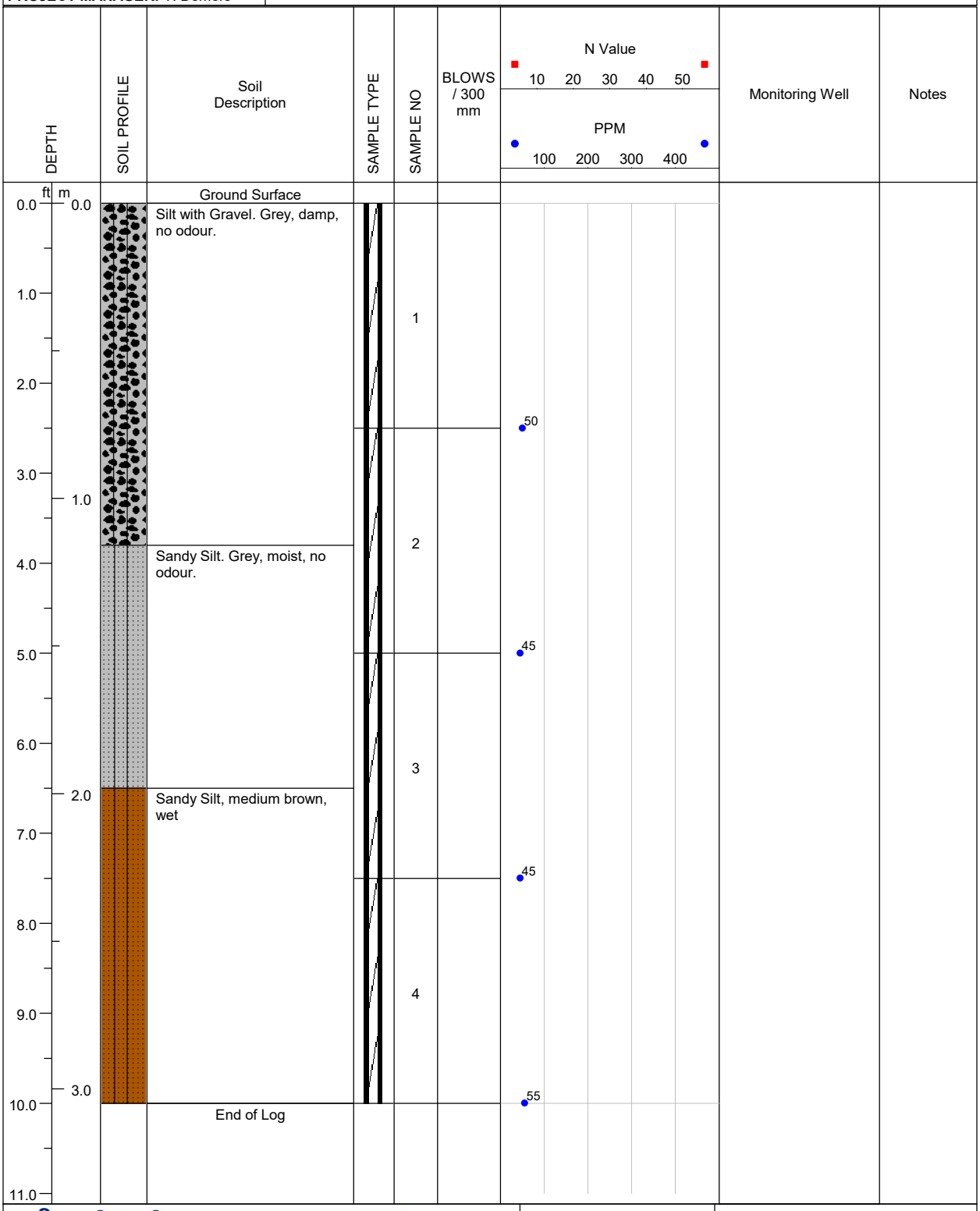
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 70m NW of S fenceline, 13m E of 25-27	**BOREHOLE NO: 25-38**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

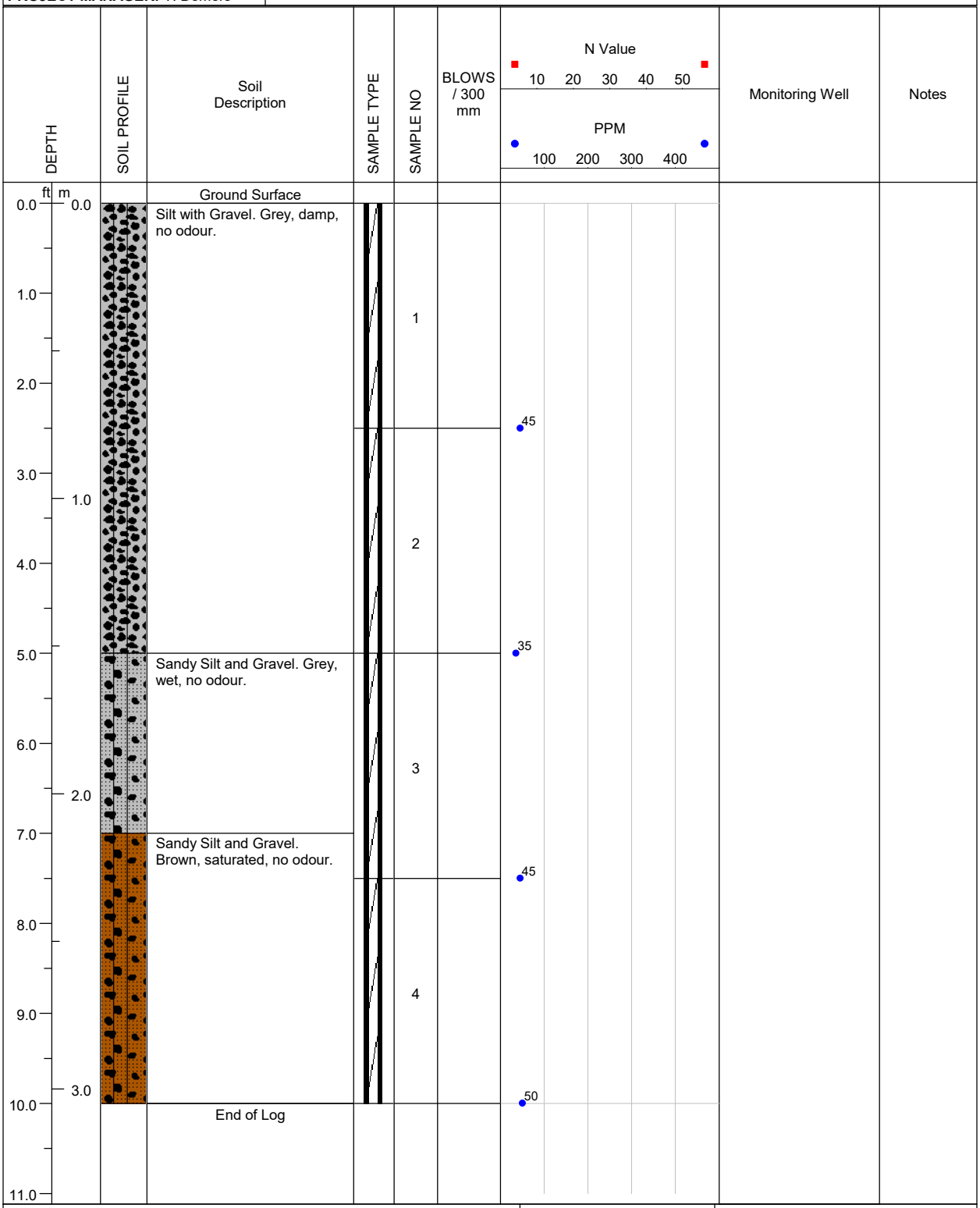
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-26	**BOREHOLE NO: 25-39**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/15/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

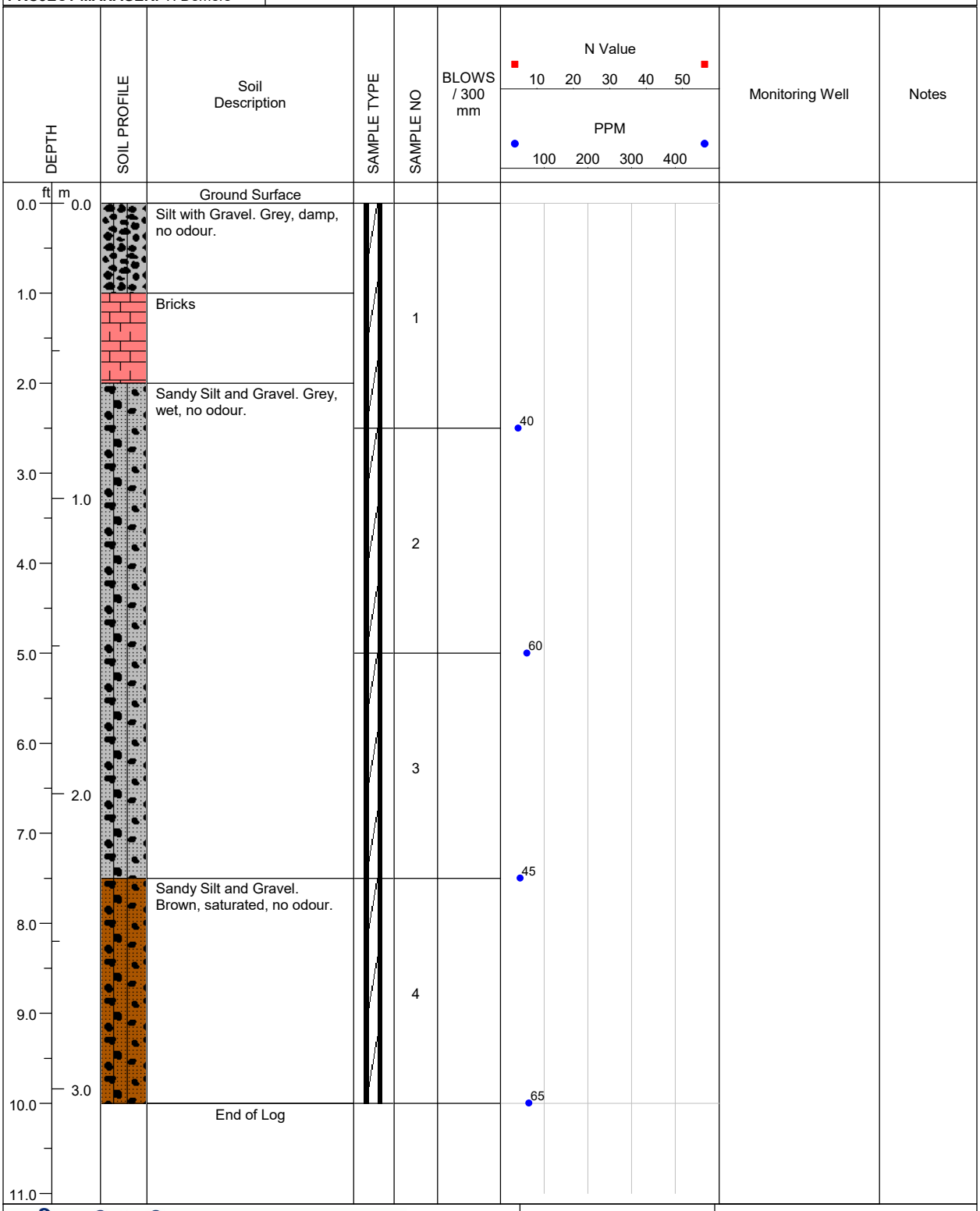
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-25	**BOREHOLE NO: 25-40**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

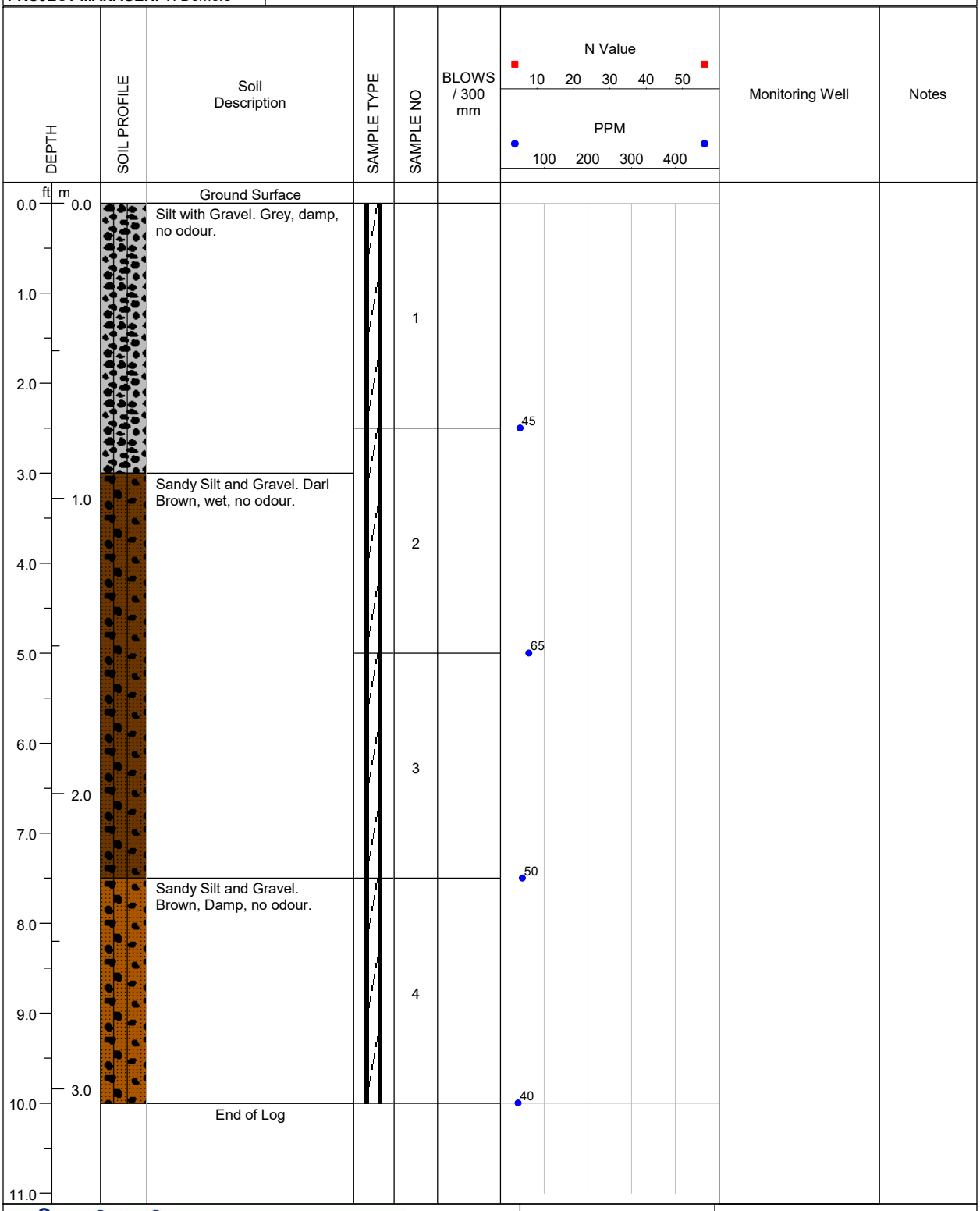
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-40	**BOREHOLE NO: 25-41**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

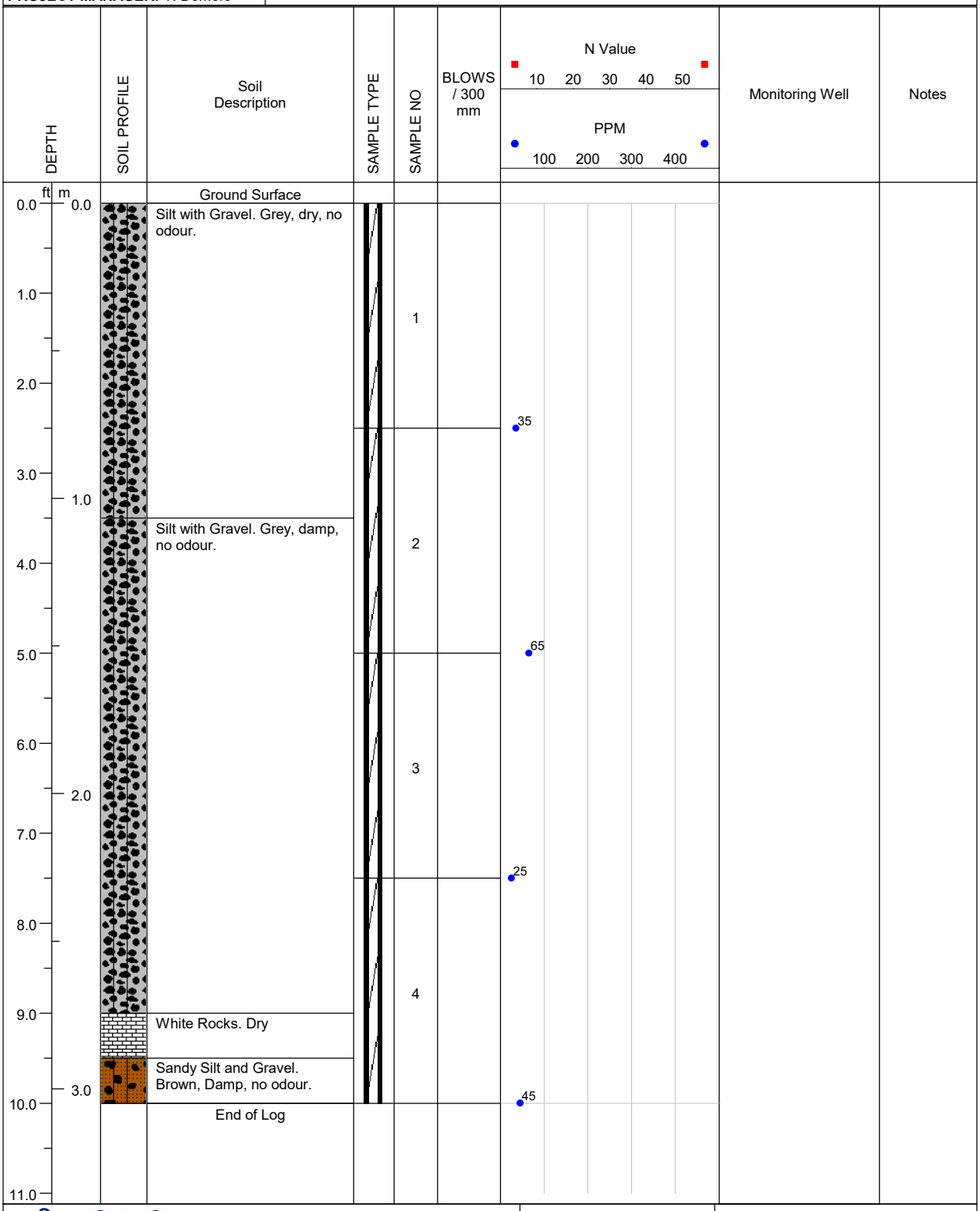
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-39	**BOREHOLE NO: 25-42**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-38	**BOREHOLE NO: 25-43**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
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PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-37	**BOREHOLE NO: 25-44**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
		Silt with Gravel. Grey, dry, no odour.	1				
		Silt with Sand and Gravel. red, damp, no odour.			40		
	1.0	Silt with Sand and Gravel. Grey, damp, no odour.	2		45		
	2.0	Sandy Silt and Gravel. Brown, Damp, no odour.	3		35		
	3.0		4		50		
10.0		End of Log					
11.0							

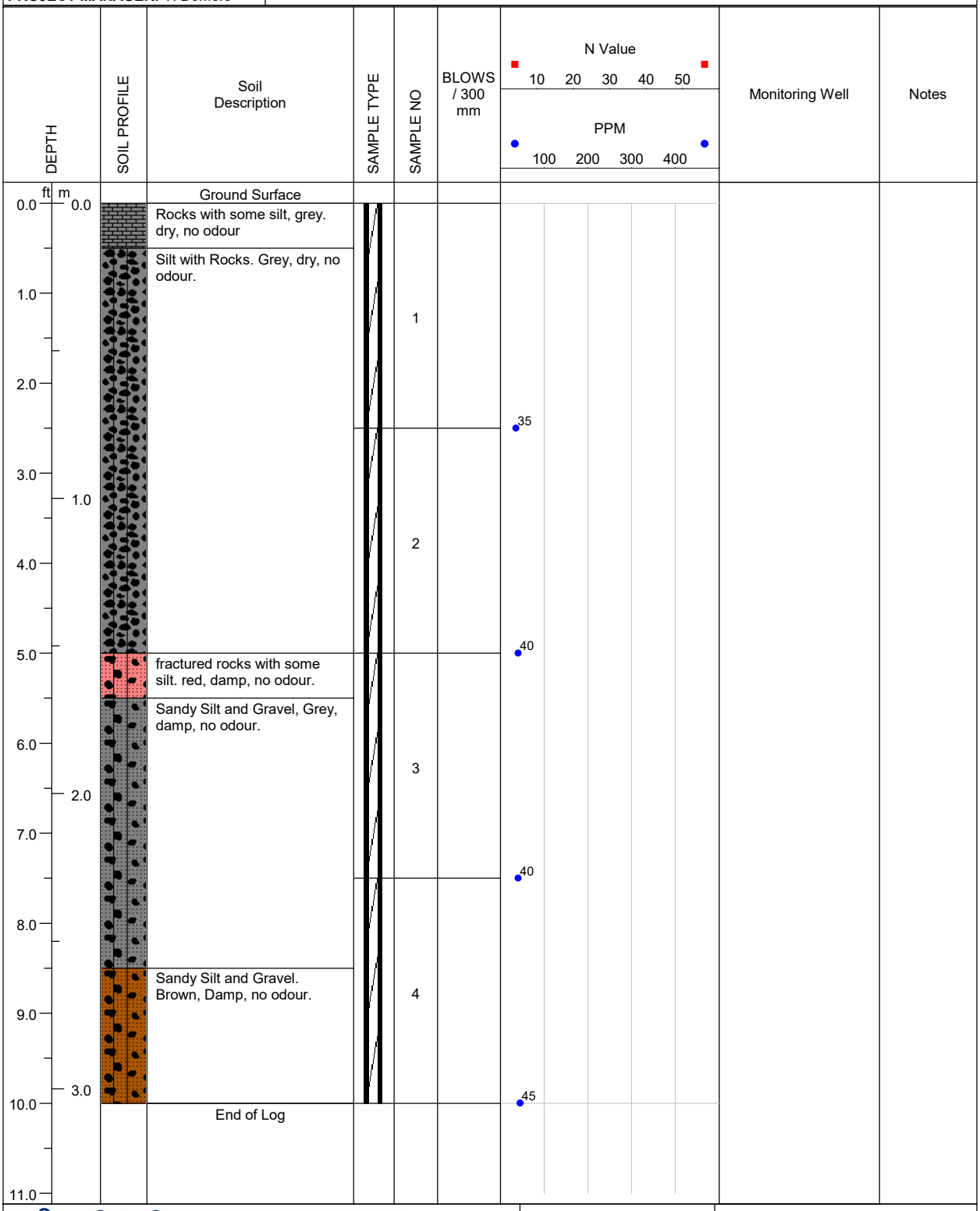
N Value: 10 20 30 40 50

PPM: 100 200 300 400

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LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

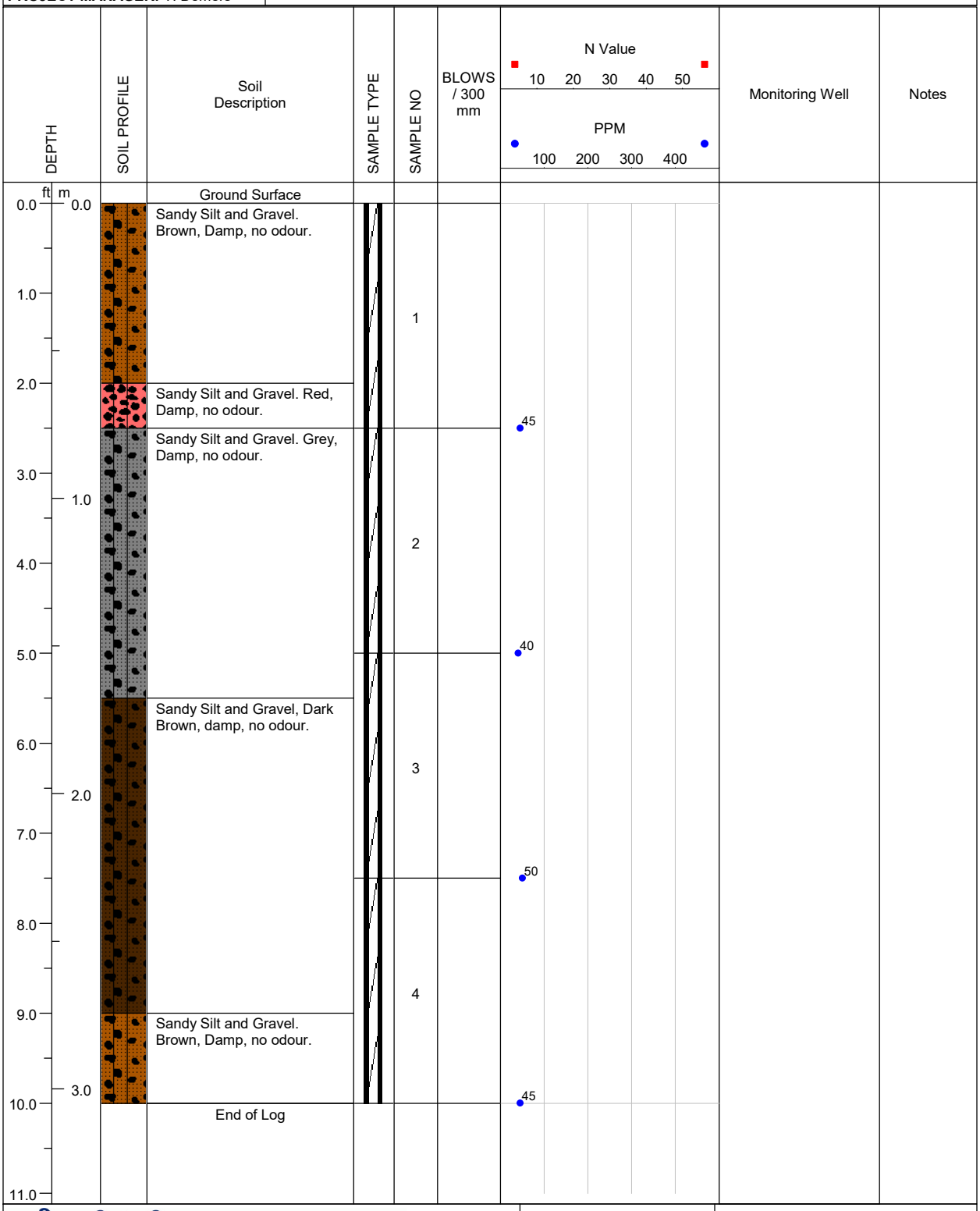
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-36	**BOREHOLE NO: 25-45**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

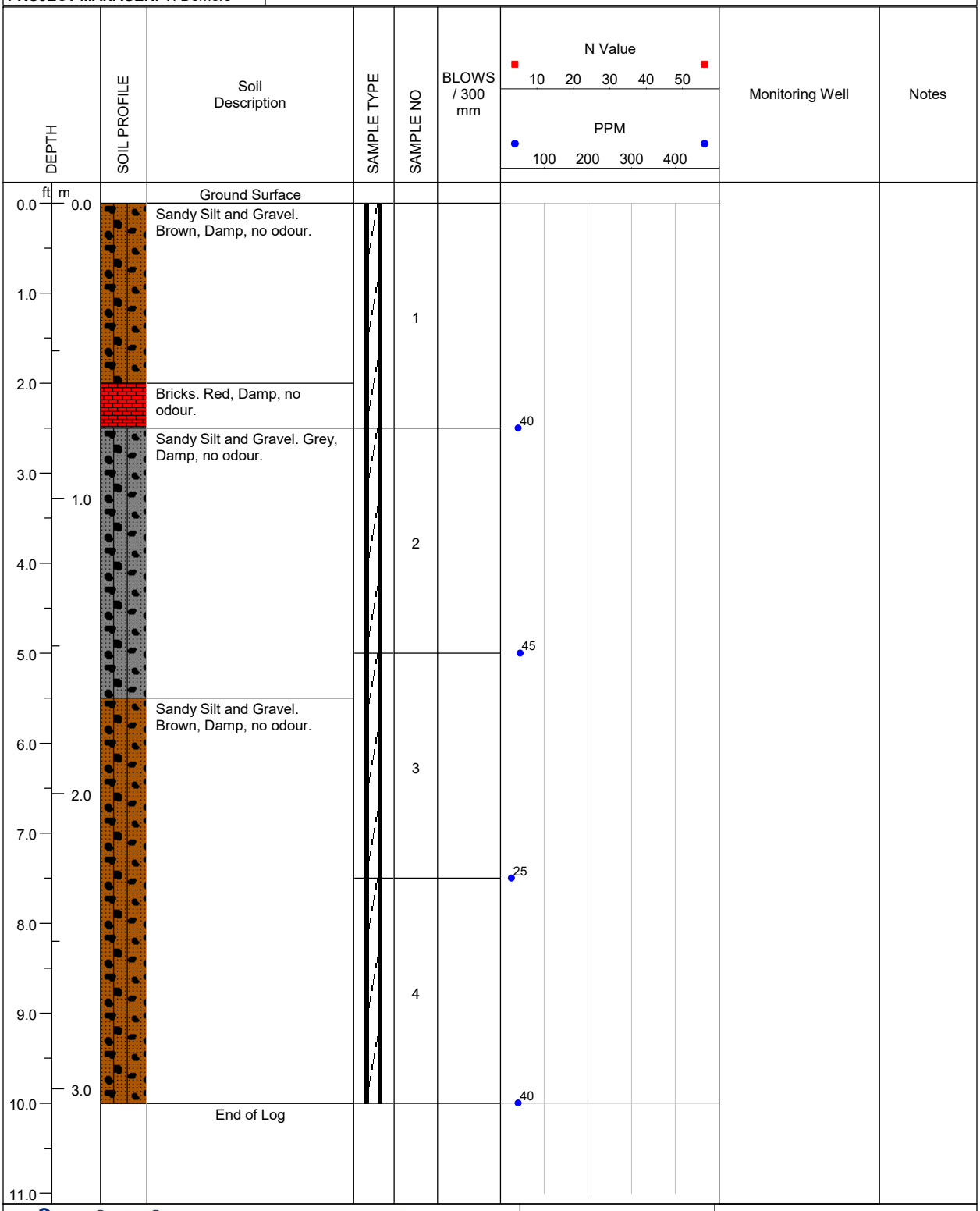
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-35	**BOREHOLE NO: 25-46**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



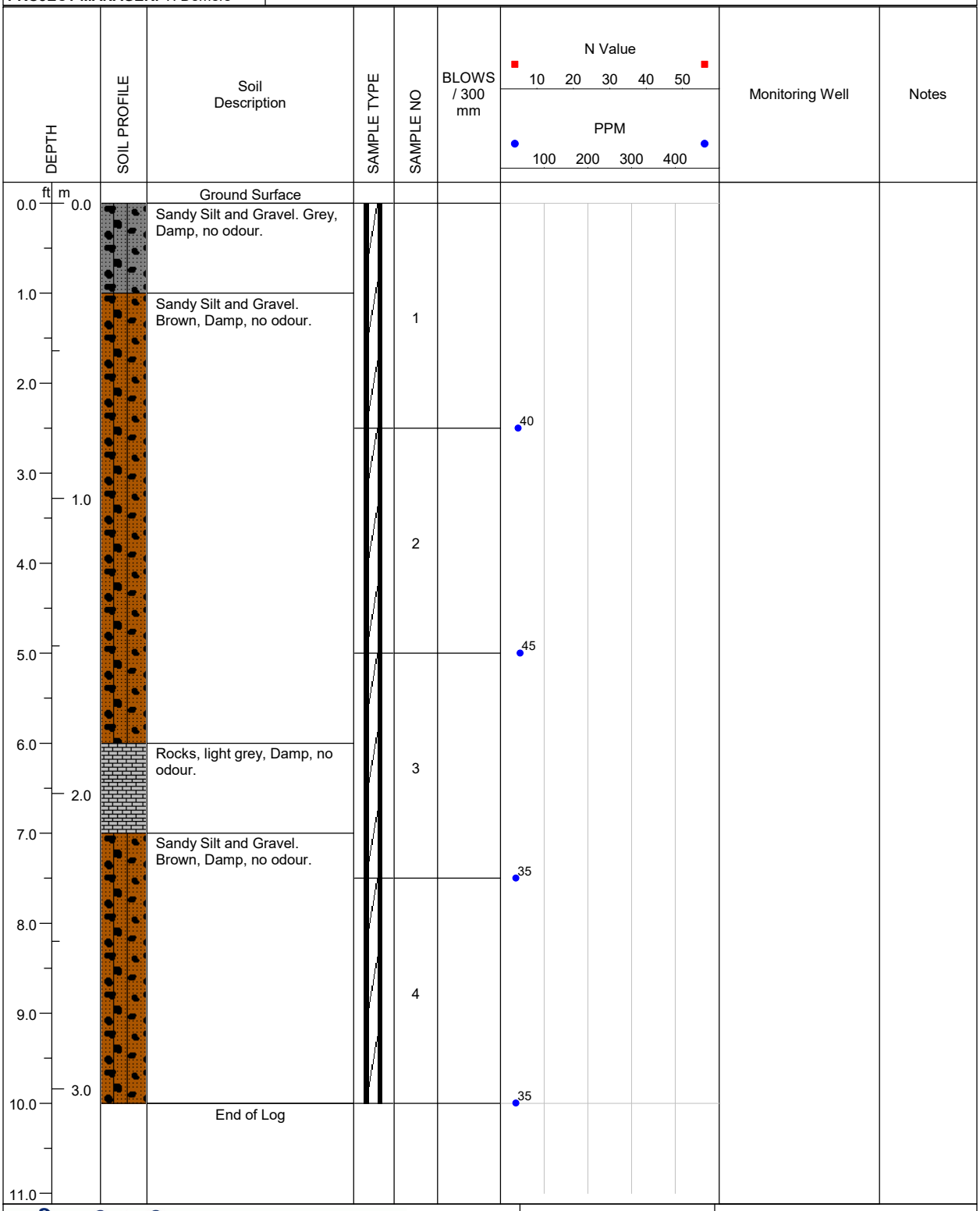
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-34	**BOREHOLE NO: 25-47**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



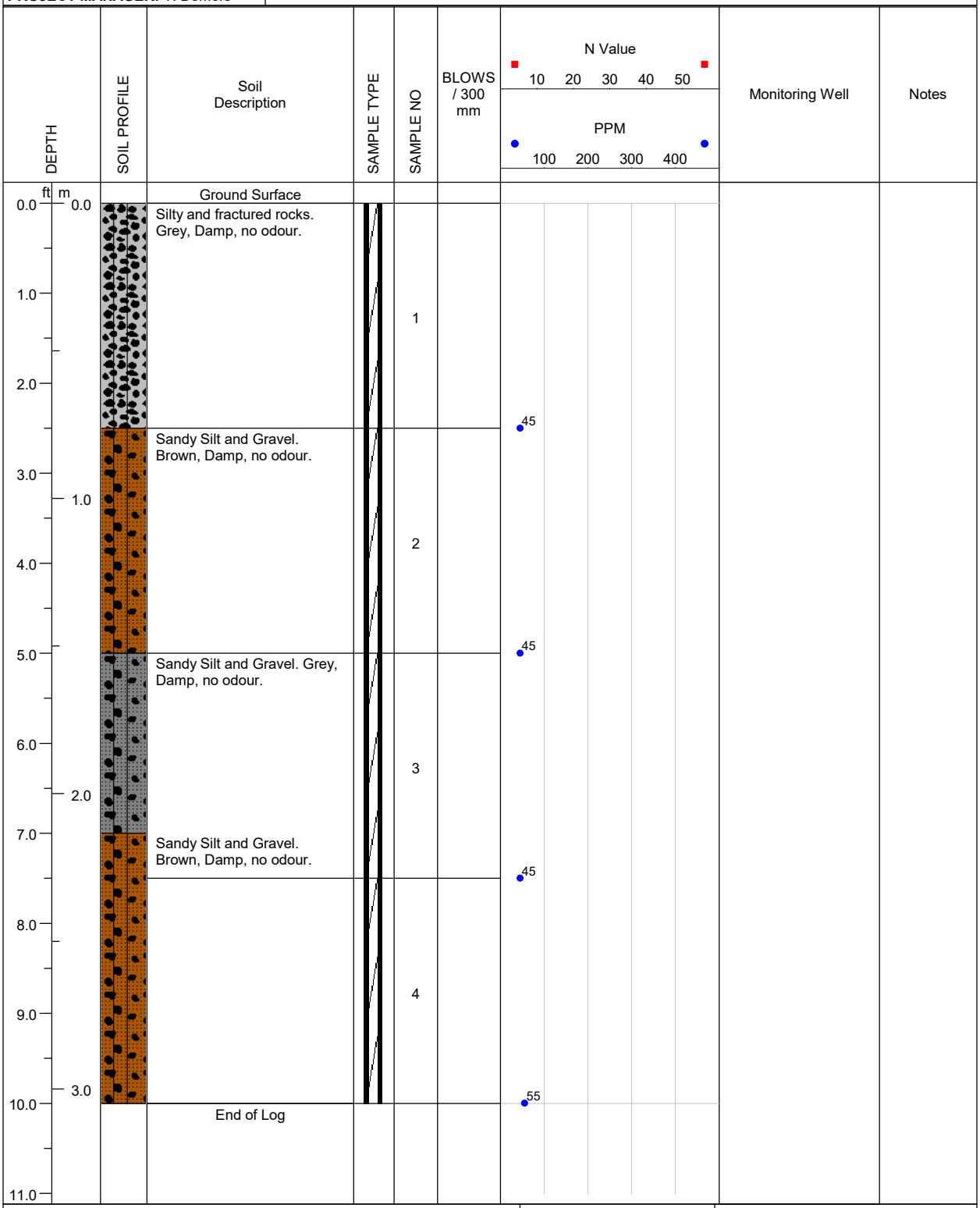
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-33	**BOREHOLE NO: 25-48**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

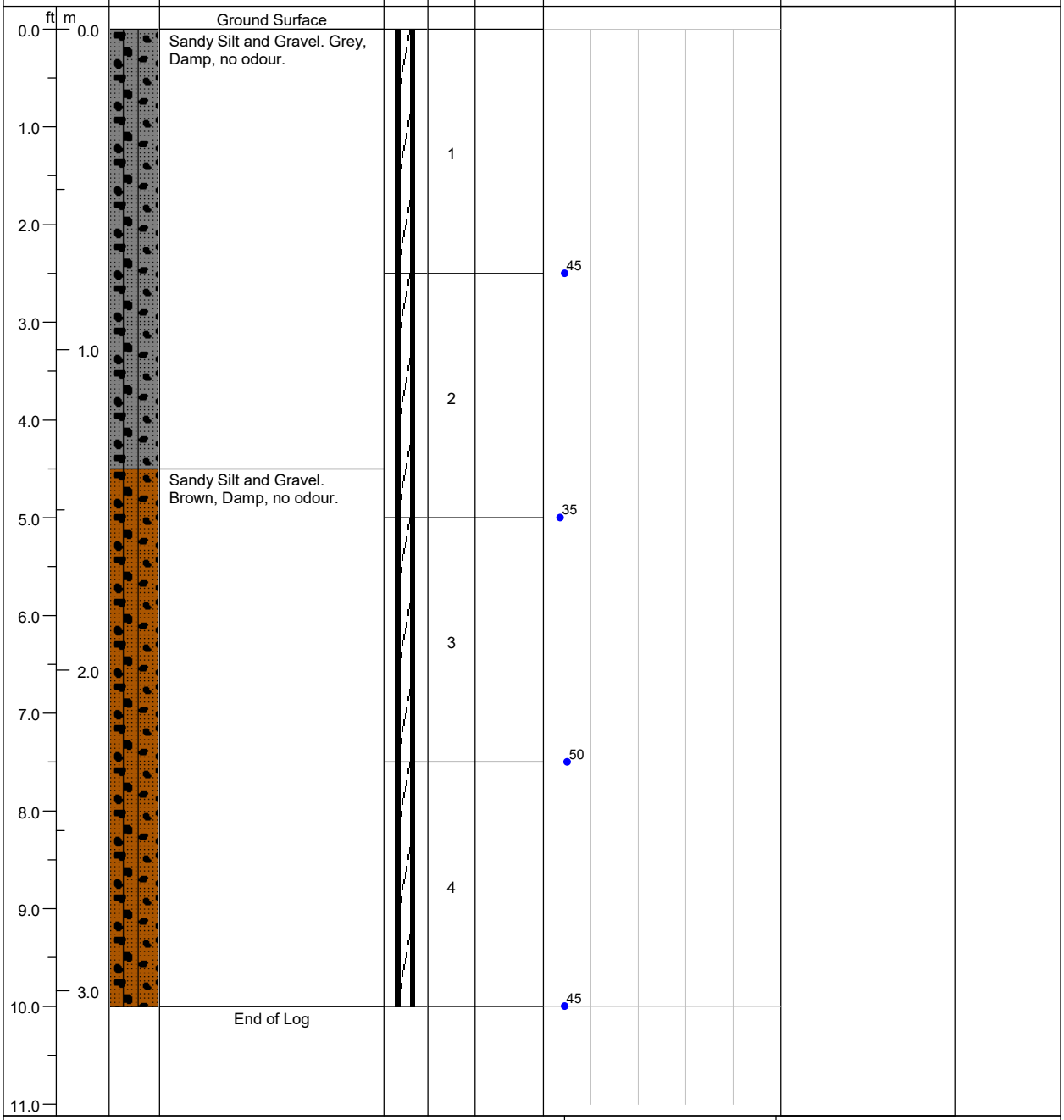
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-41	**BOREHOLE NO: 25-49**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

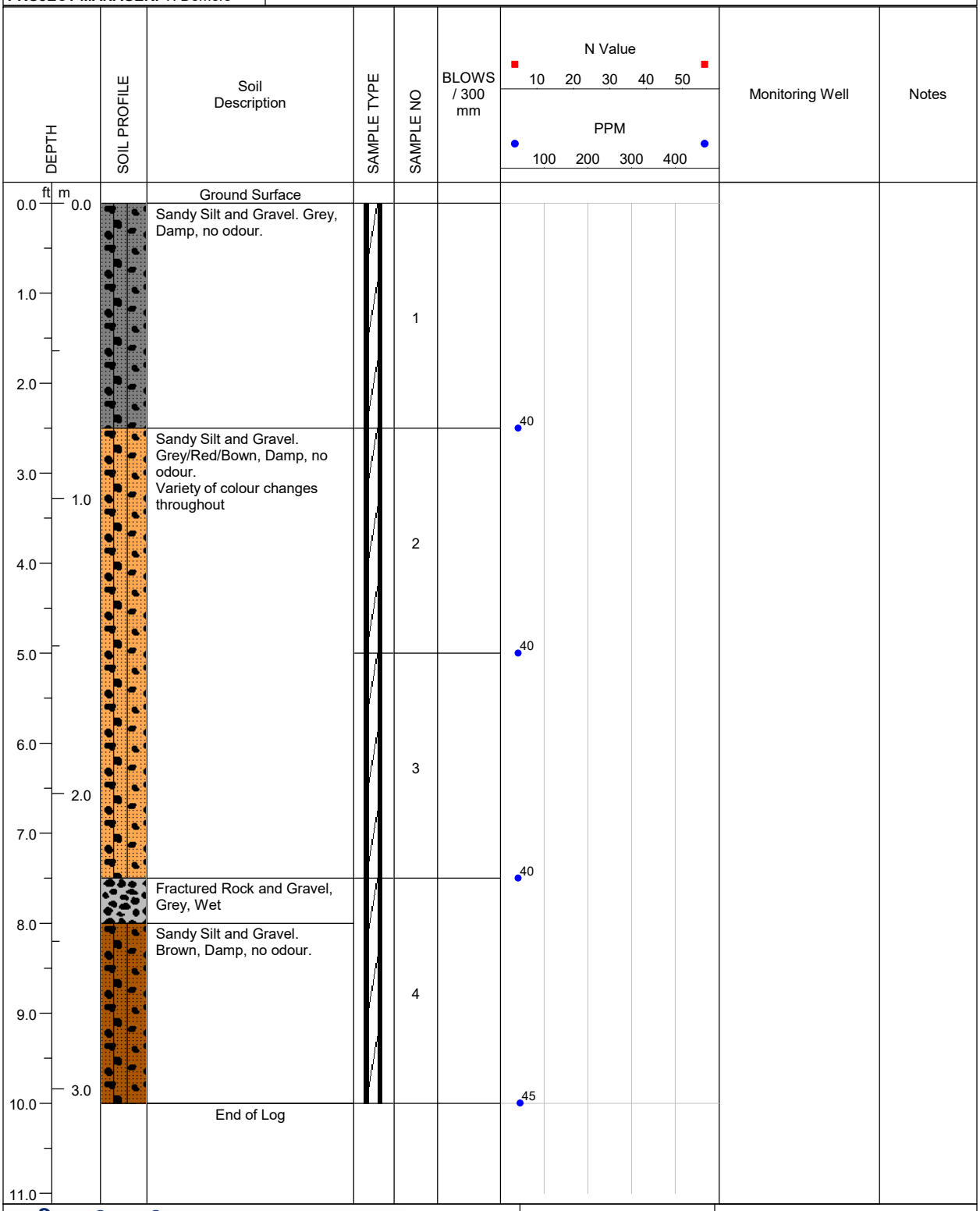
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-42	**BOREHOLE NO: 25-50**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

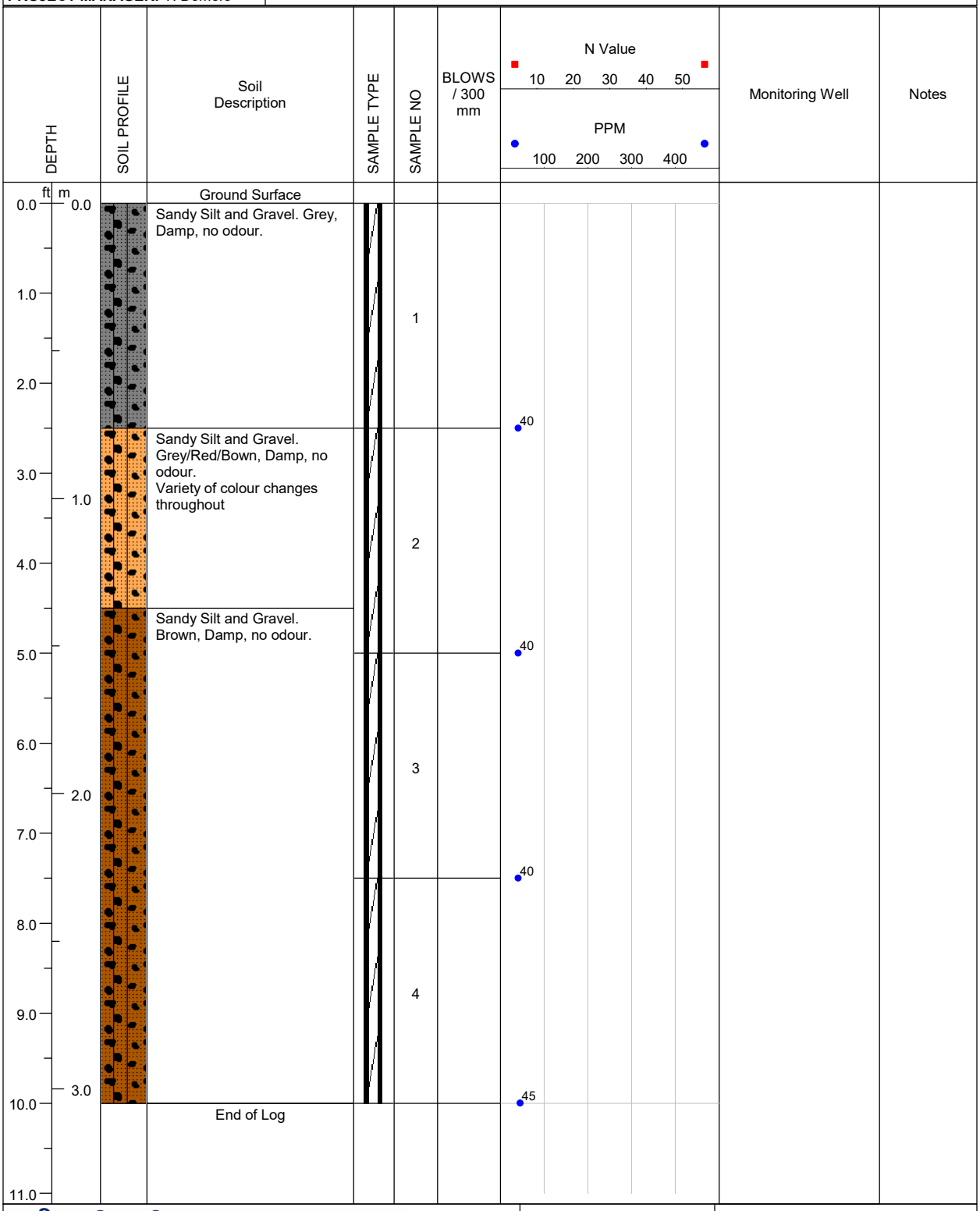
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-43	**BOREHOLE NO: 25-51**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

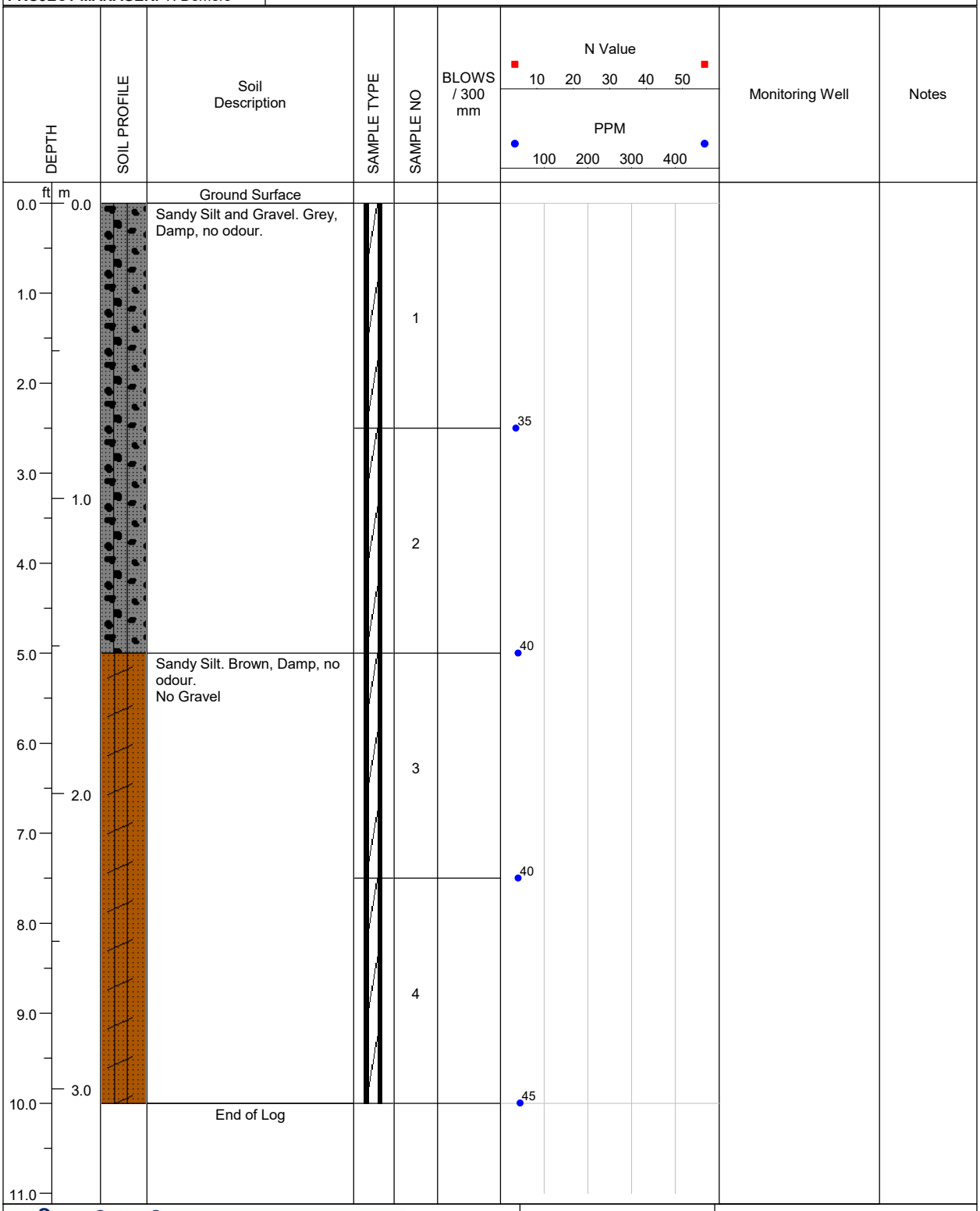
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-44	**BOREHOLE NO: 25-52**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

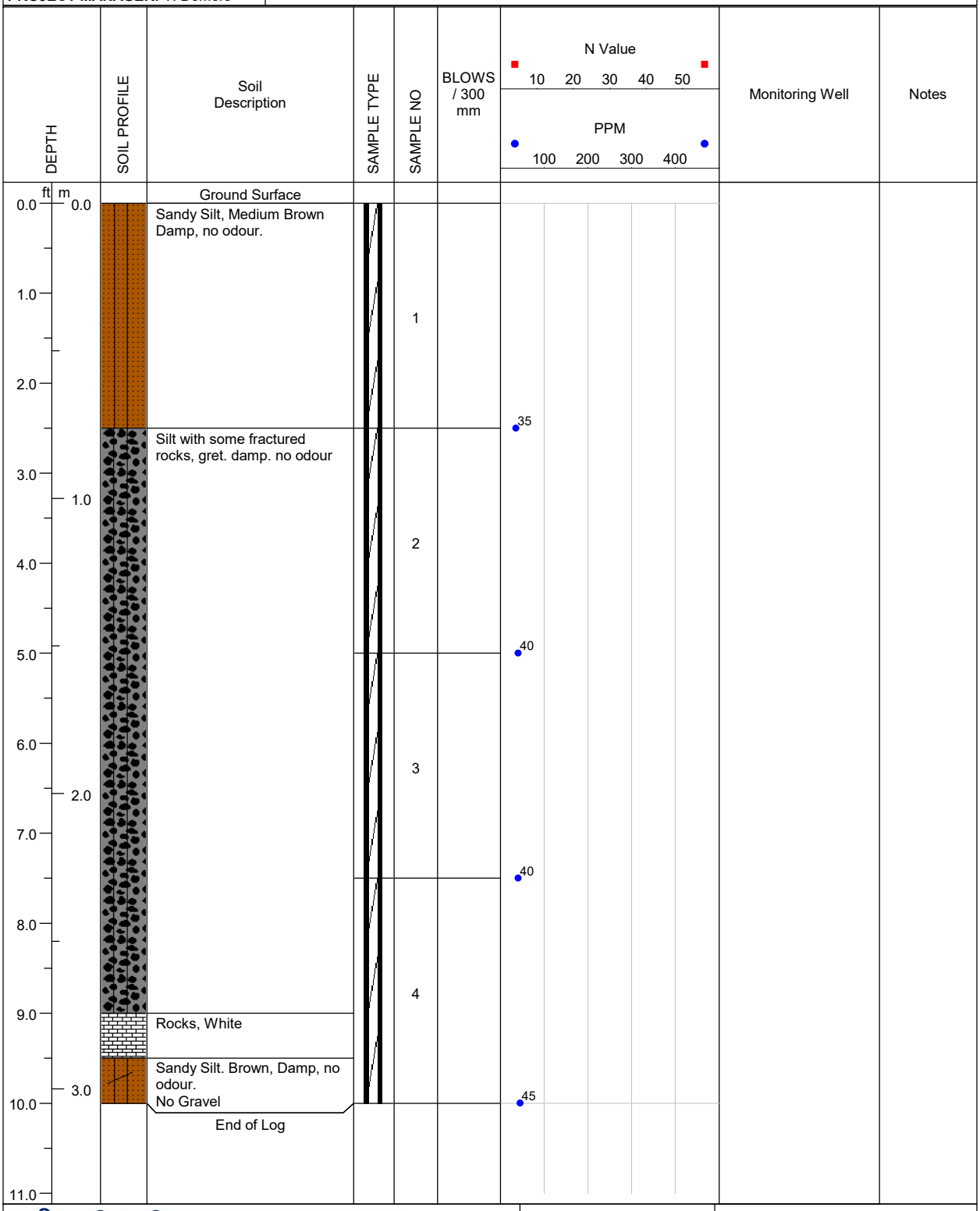
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-45	**BOREHOLE NO: 25-53**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

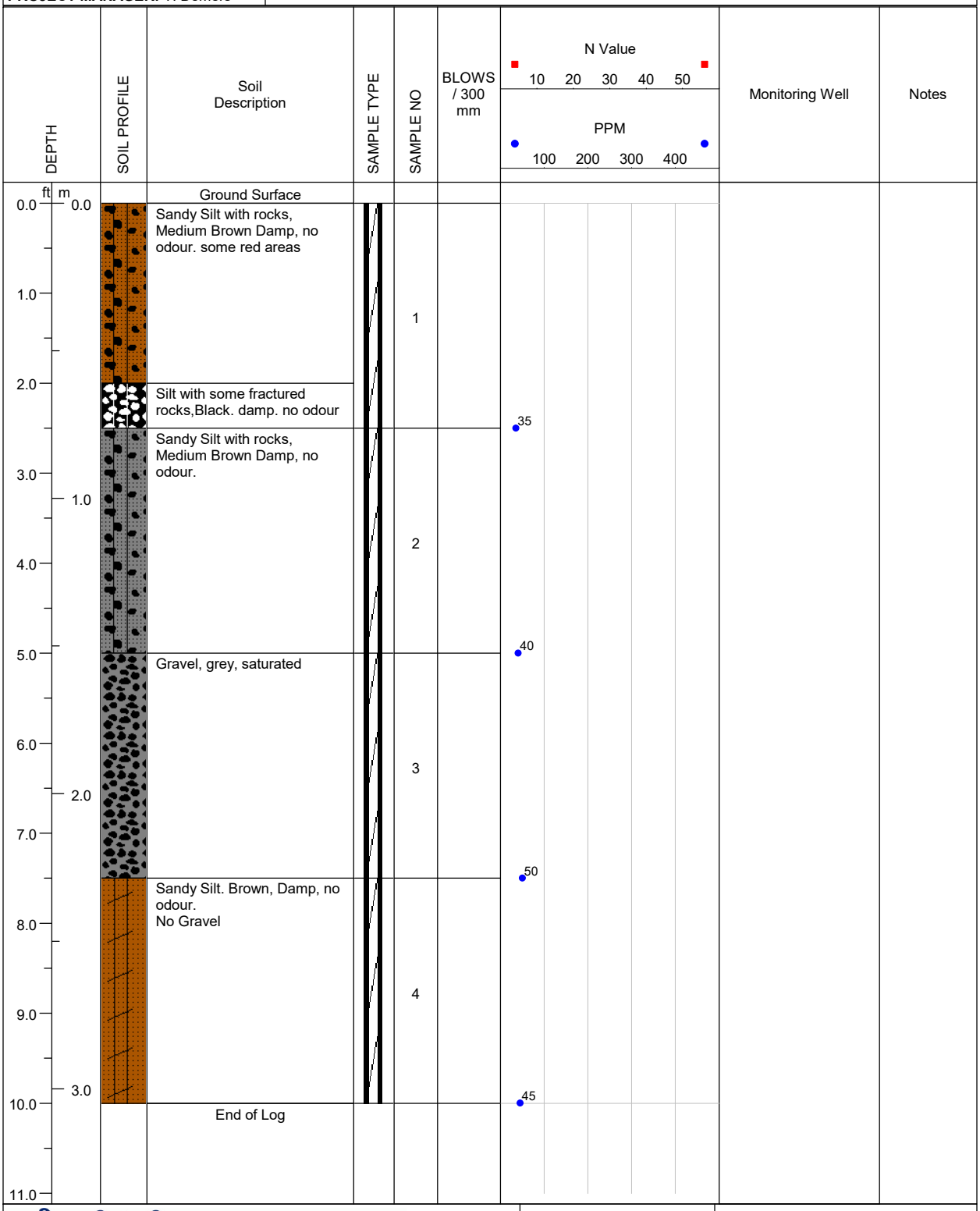
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-46	**BOREHOLE NO: 25-54**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

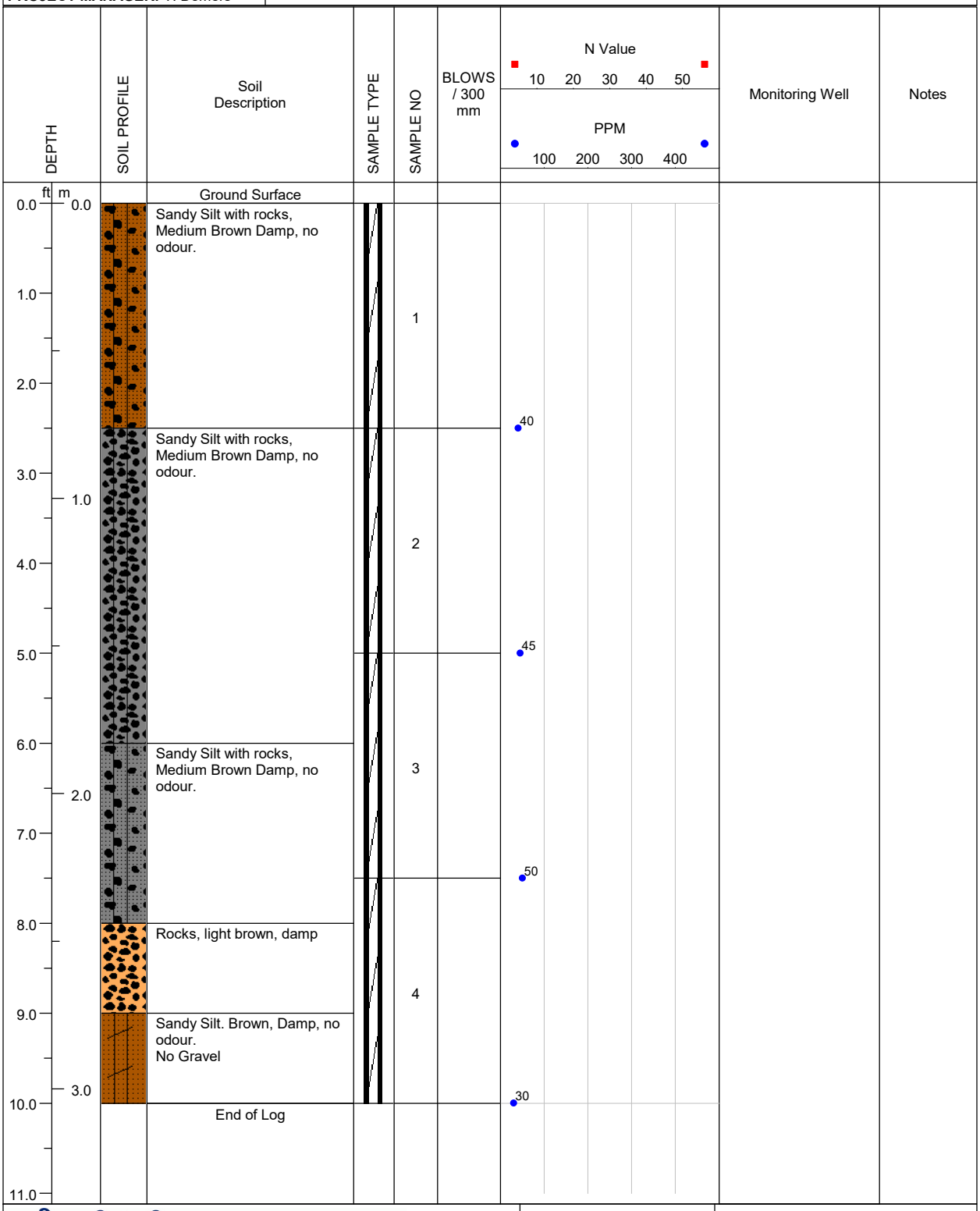
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-47	**BOREHOLE NO: 25-55**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

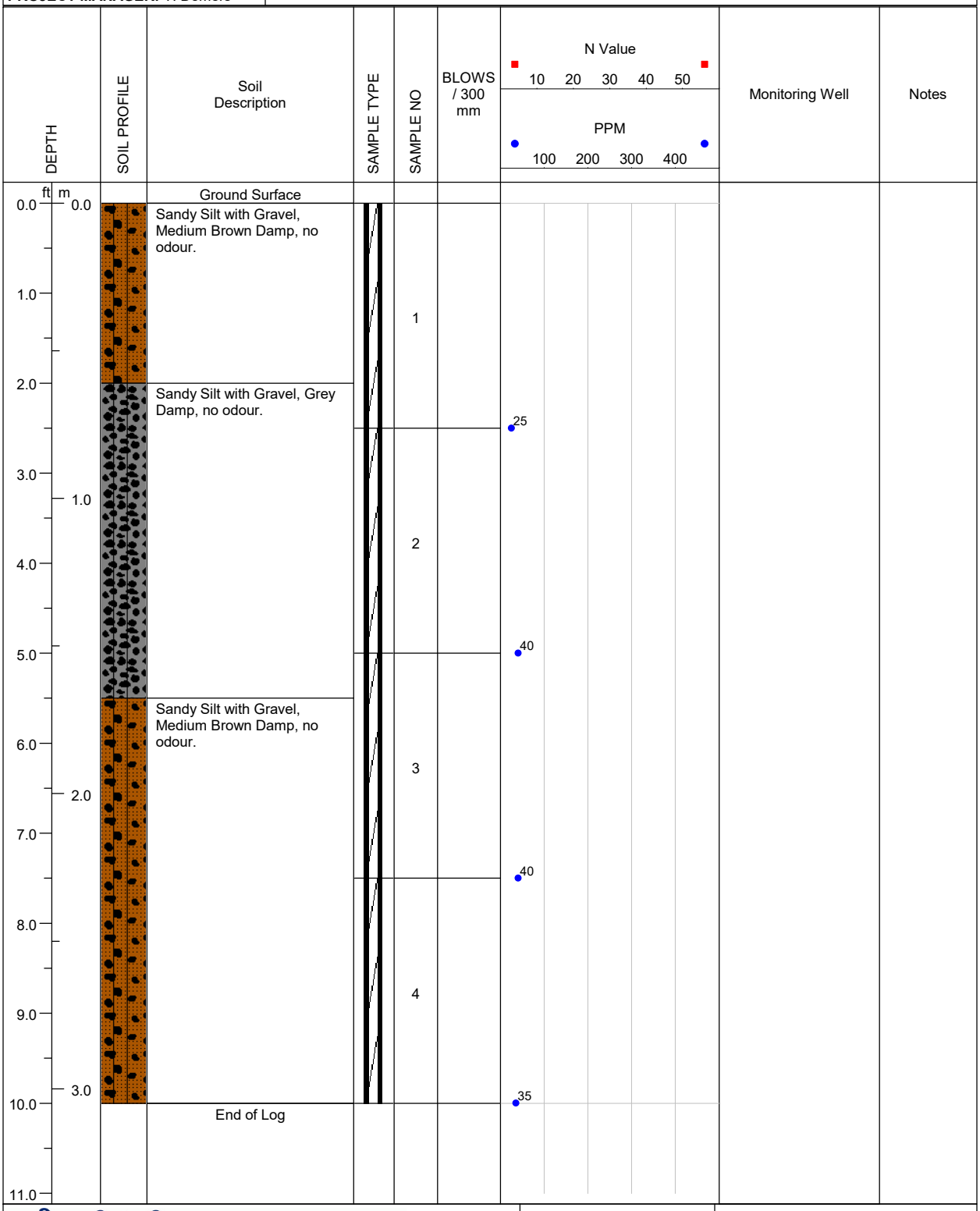
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-48	**BOREHOLE NO: 25-56**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

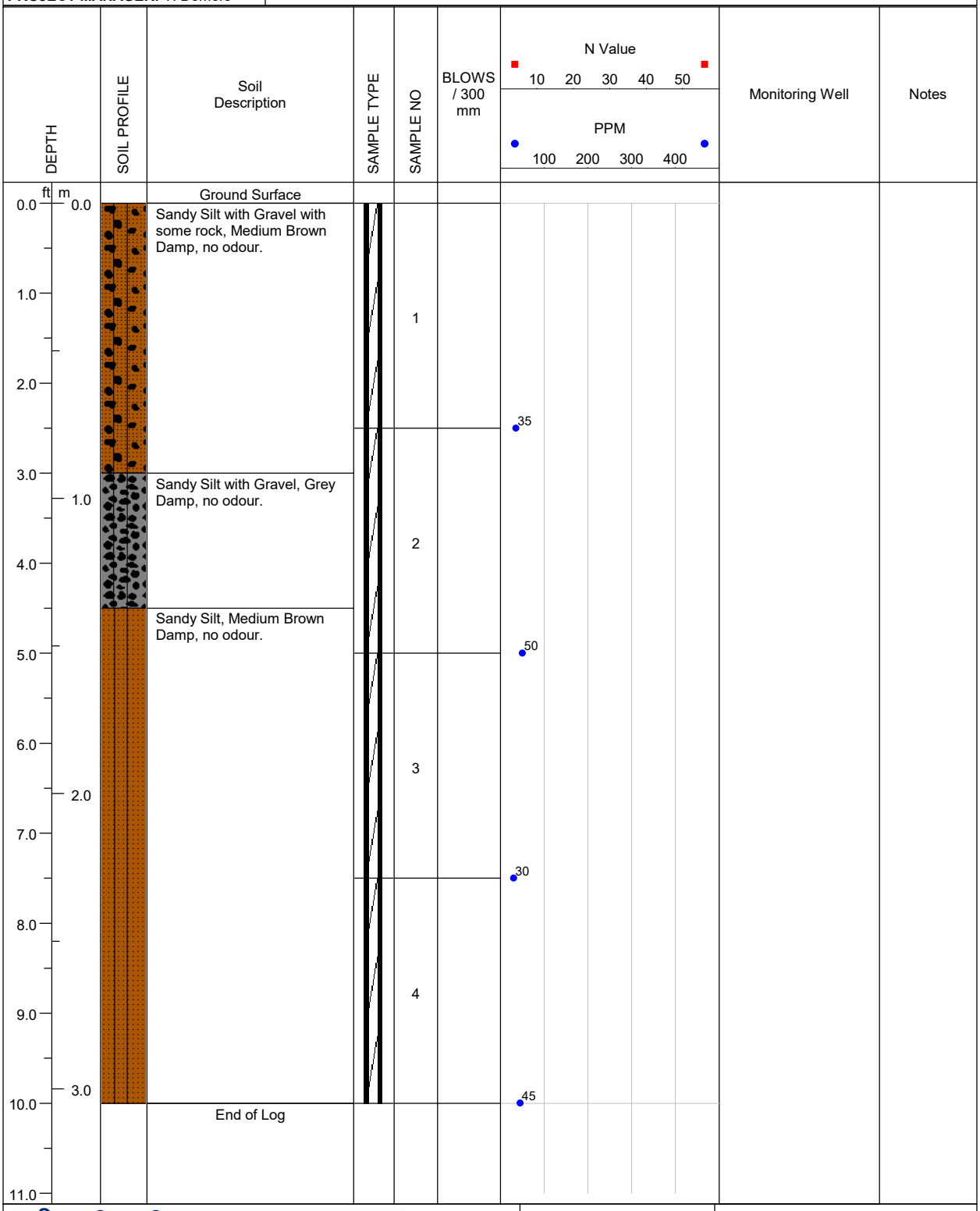
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-56	**BOREHOLE NO: 25-57**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



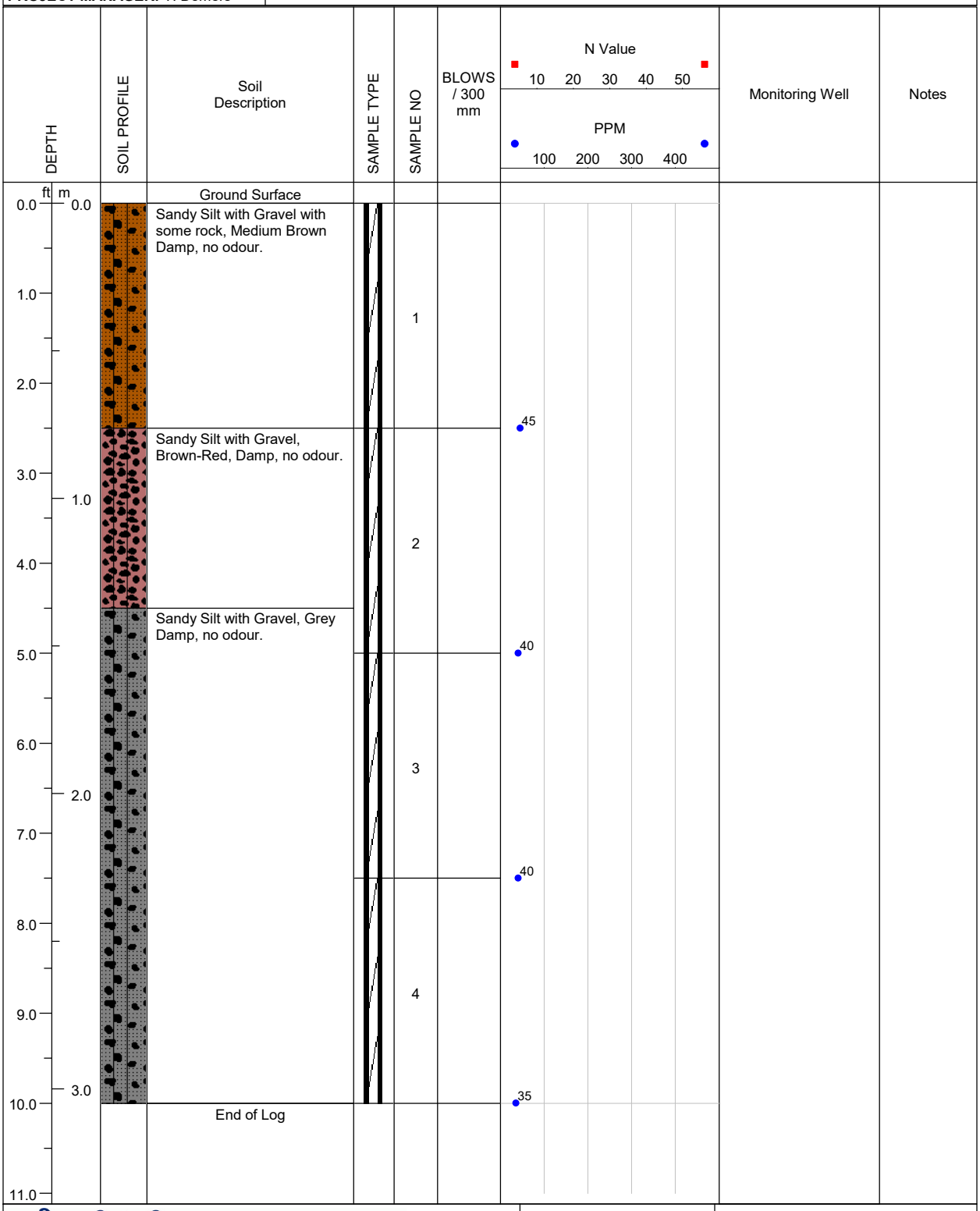
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	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-55	**BOREHOLE NO: 25-58**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



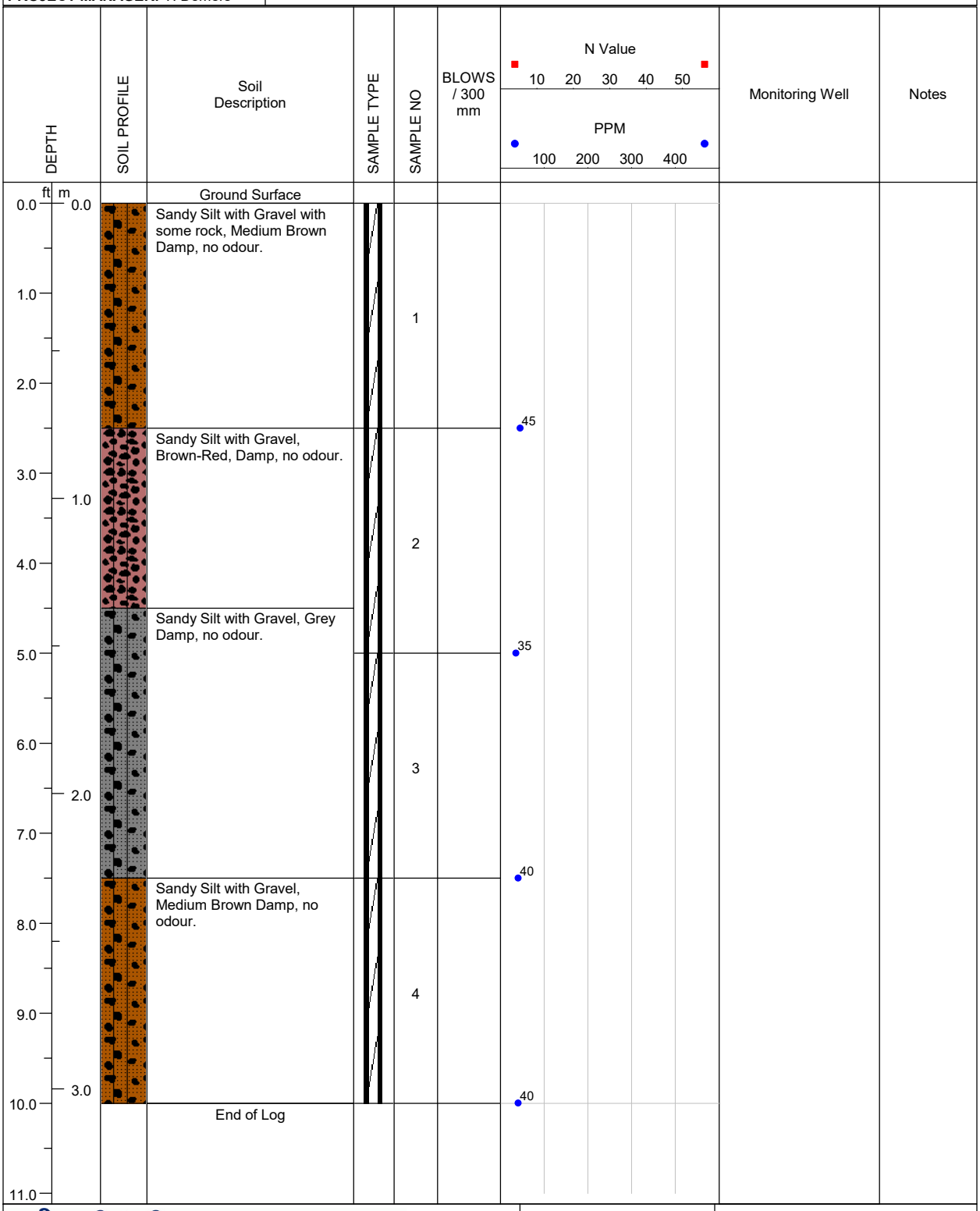
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-54	**BOREHOLE NO: 25-59**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

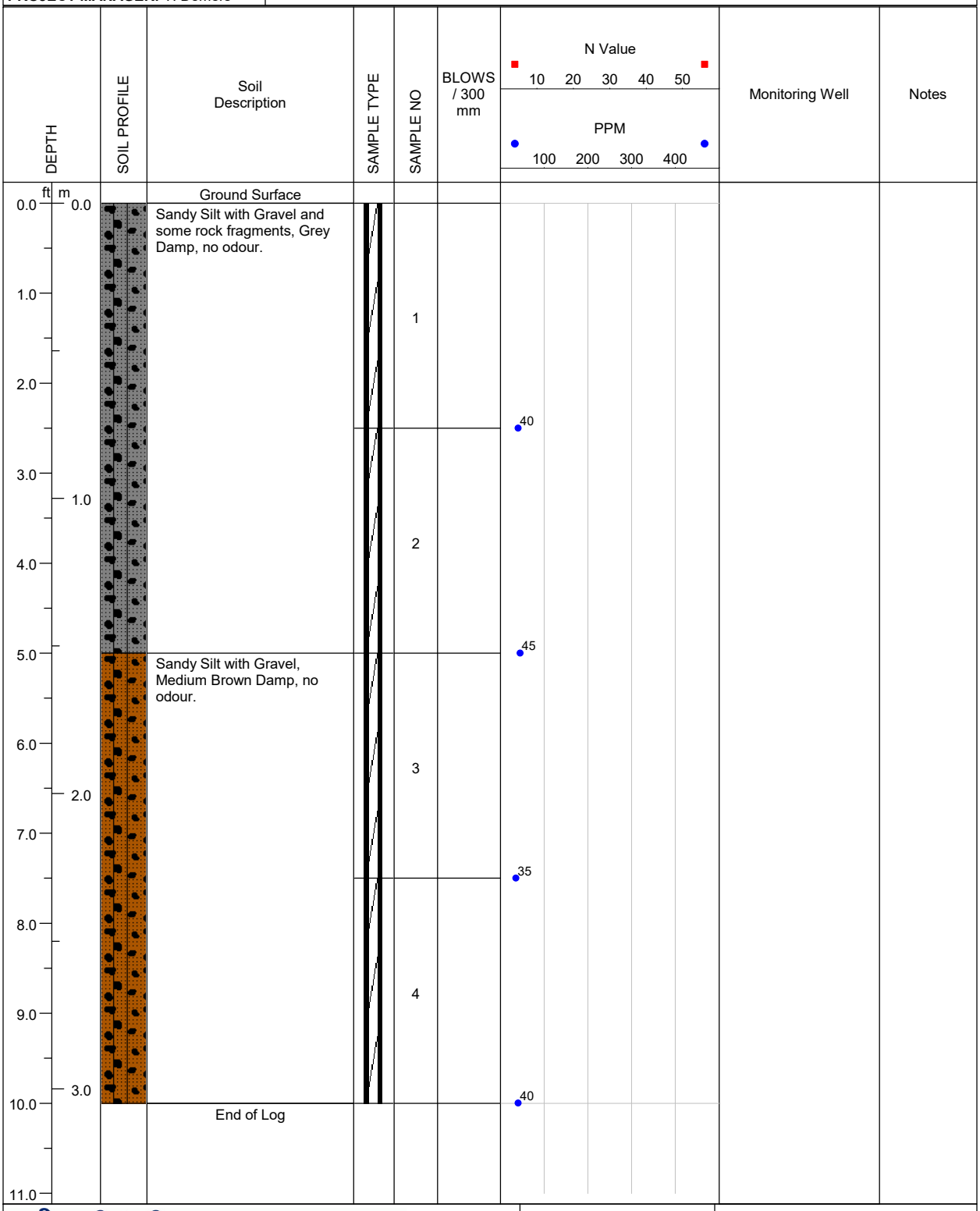
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-53	**BOREHOLE NO: 25-60**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

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16 Young Street Woodstock, ON

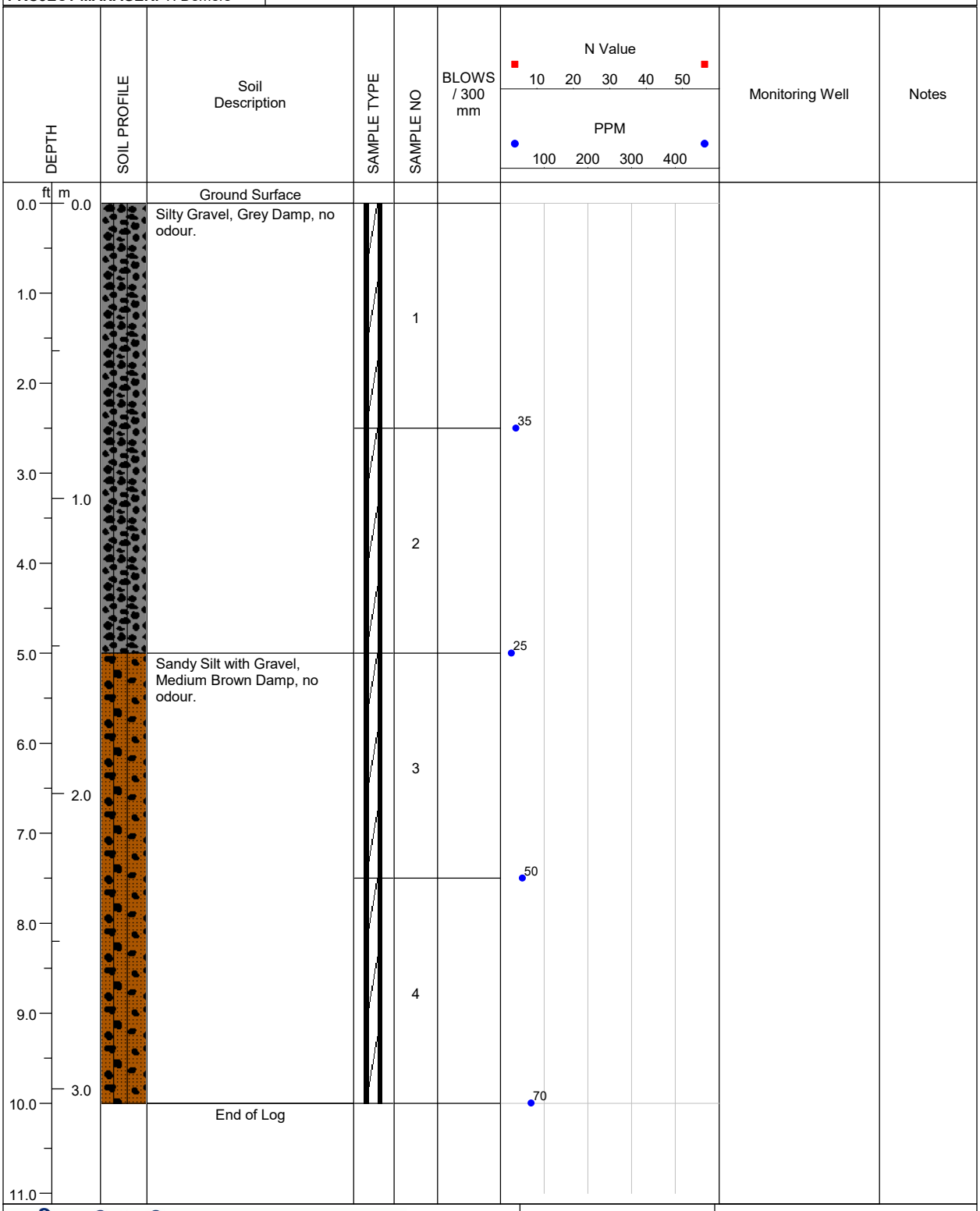
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-52	**BOREHOLE NO: 25-61**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/17/2025	**PAGE:** 1 of 1

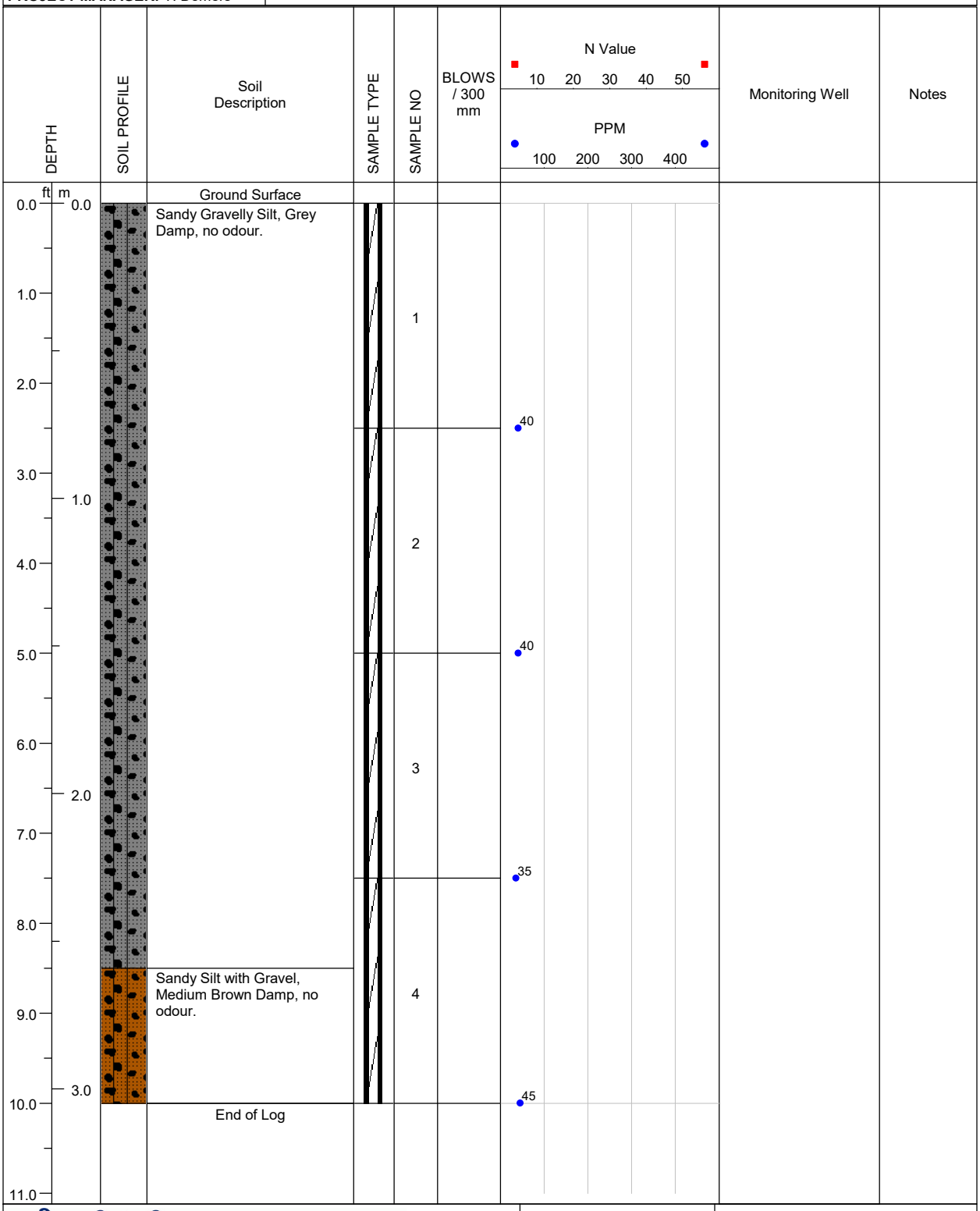
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-51	**BOREHOLE NO: 25-62**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

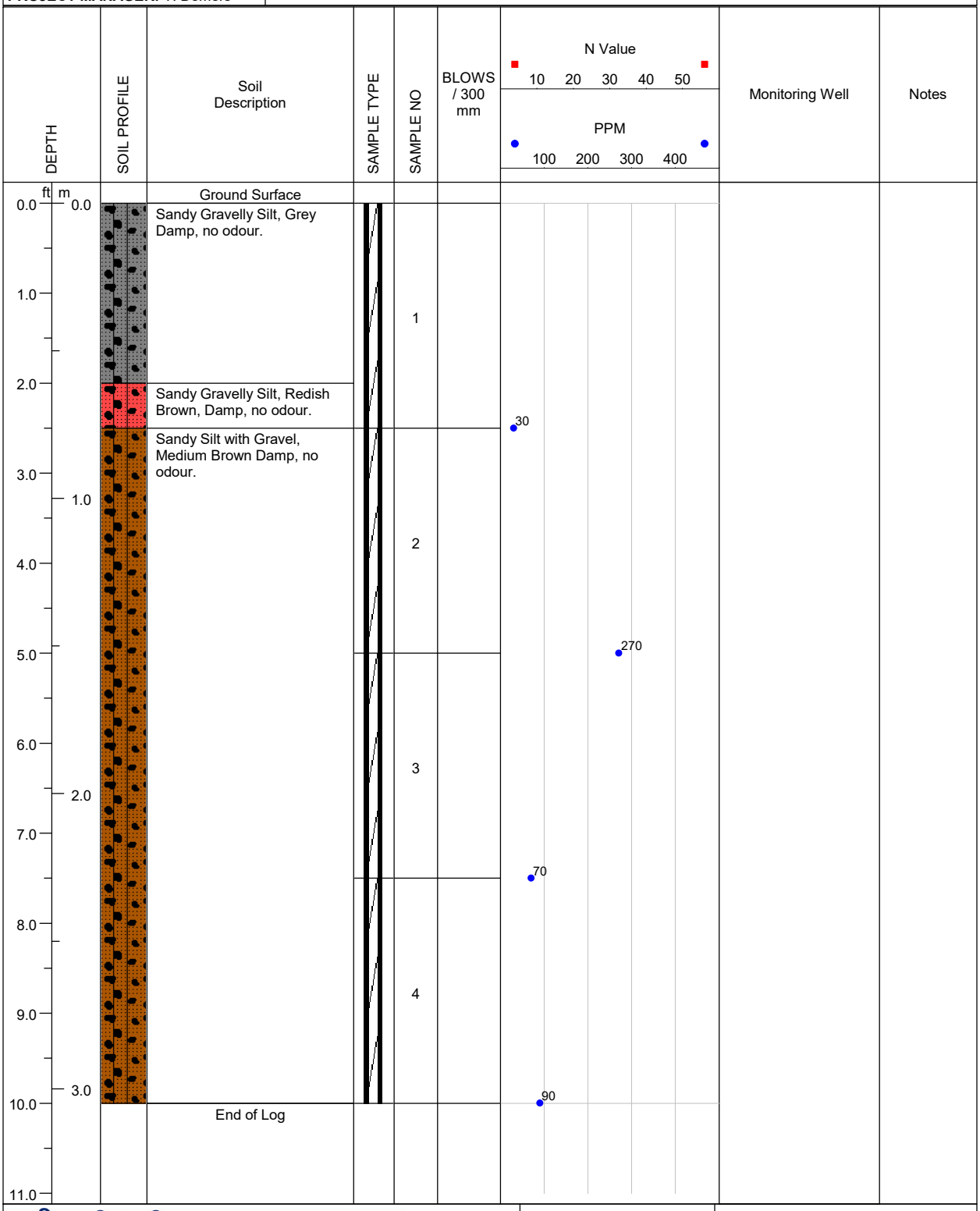
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-50	**BOREHOLE NO: 25-63**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

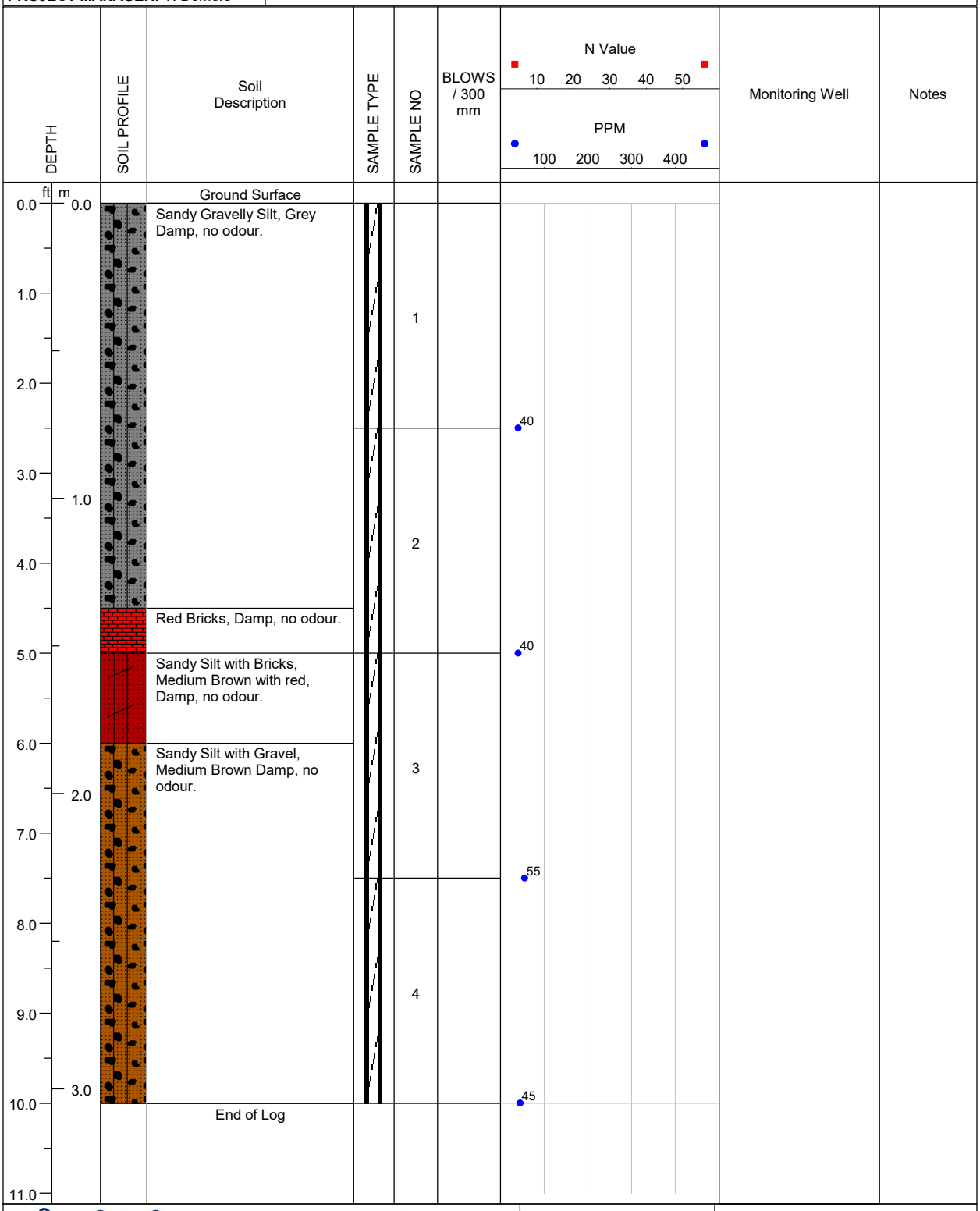
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-49	**BOREHOLE NO: 25-64**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

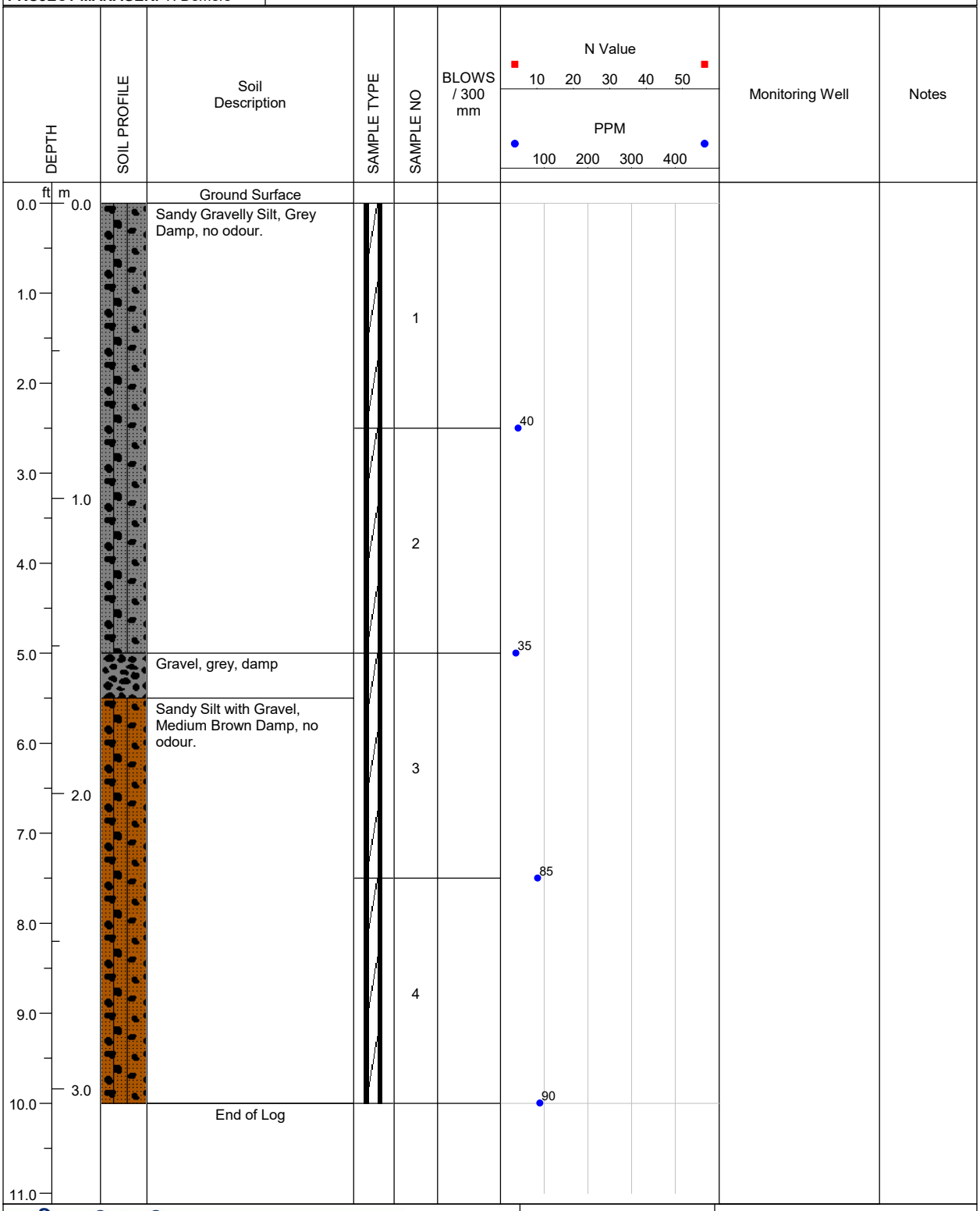
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-64	**BOREHOLE NO: 25-65**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

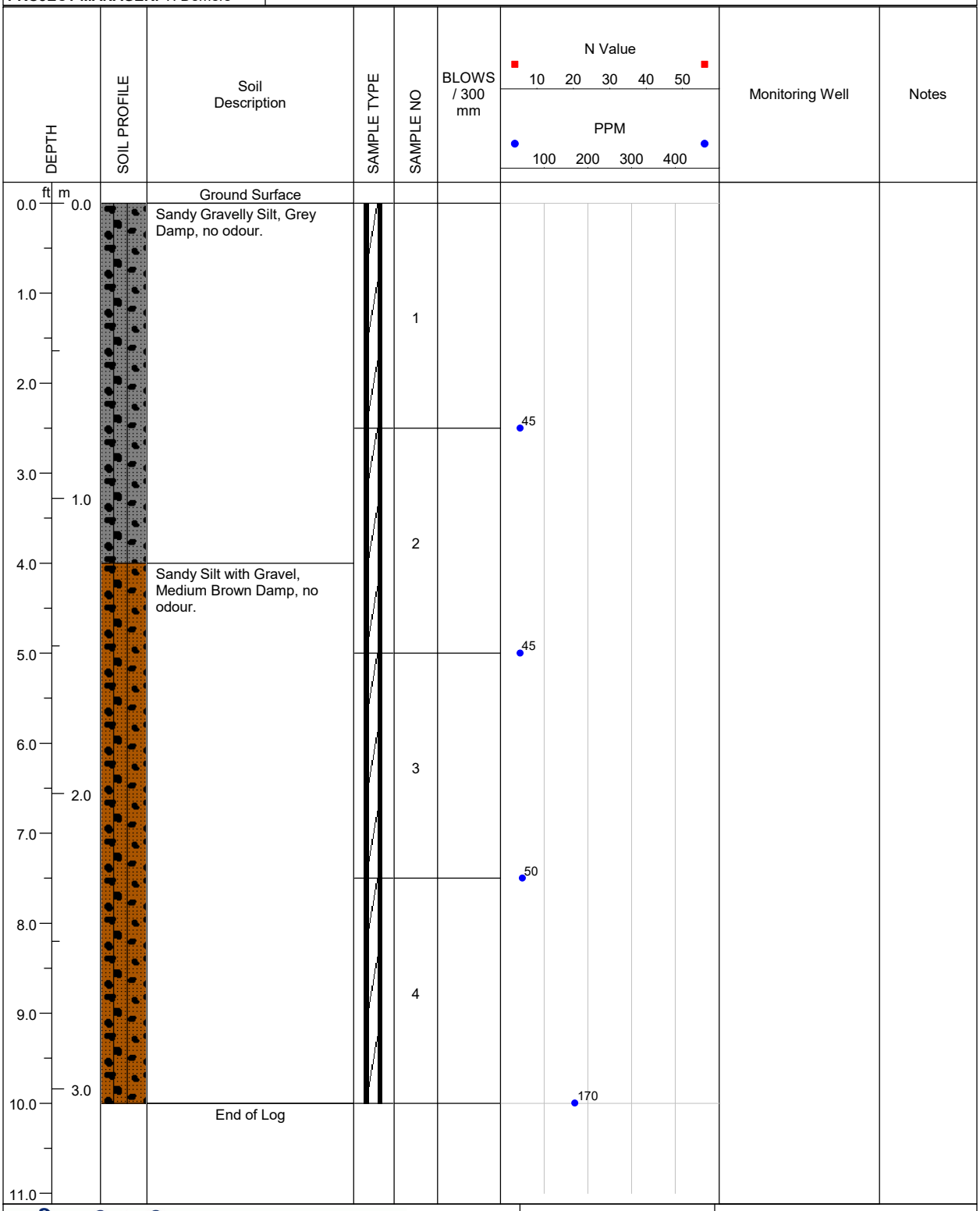
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-63	**BOREHOLE NO: 25-66**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

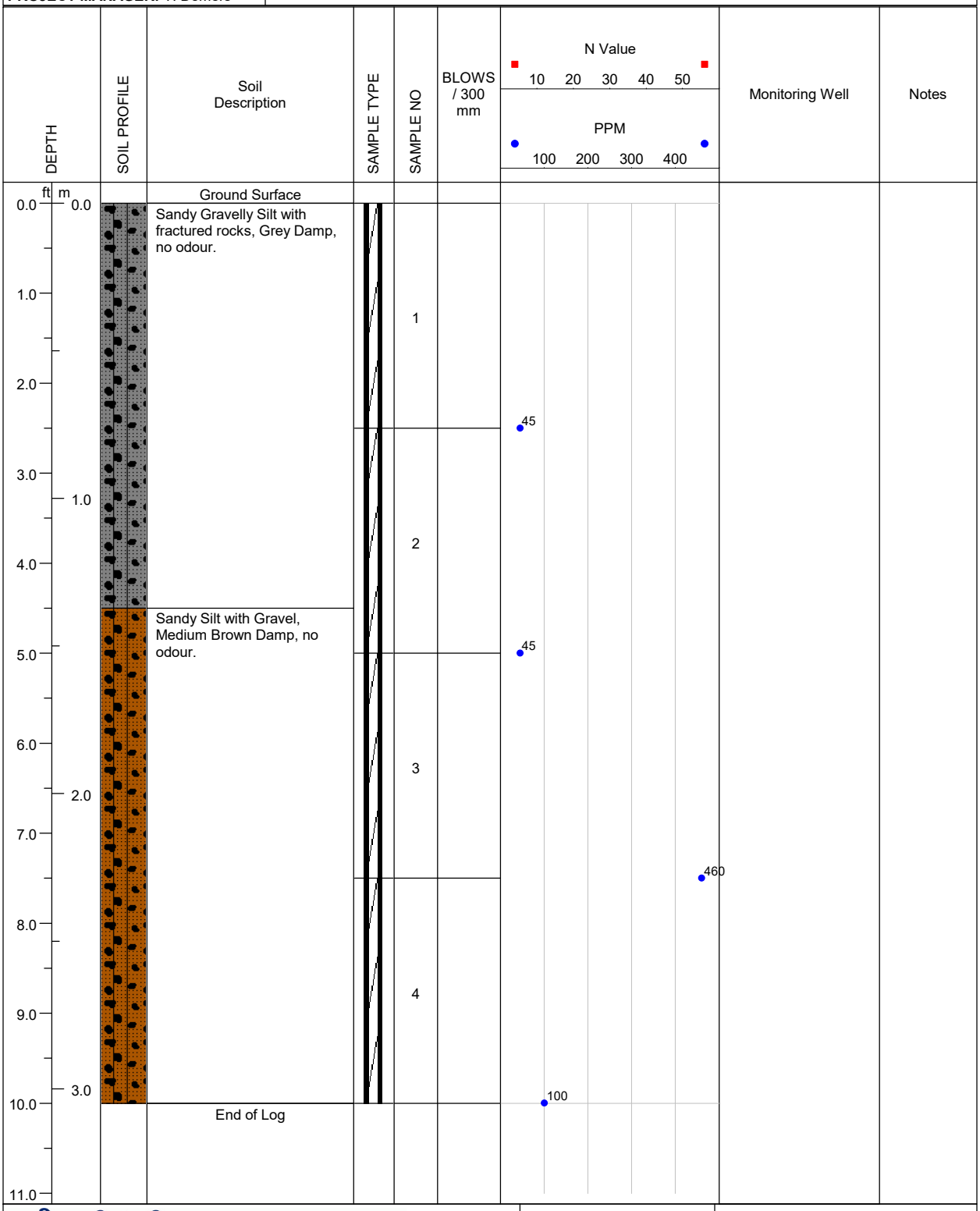
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-62	**BOREHOLE NO: 25-67**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

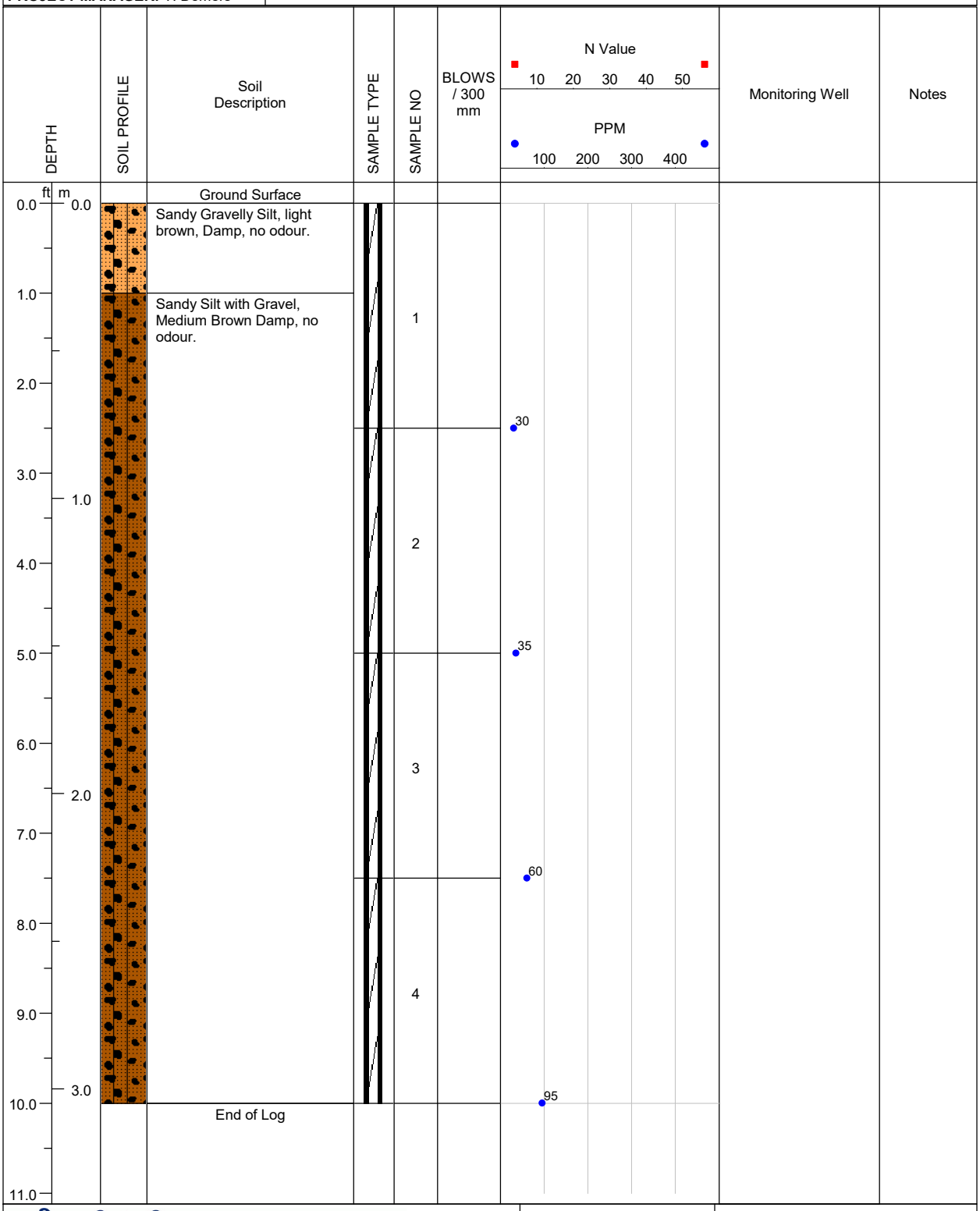
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-61	**BOREHOLE NO: 25-68**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

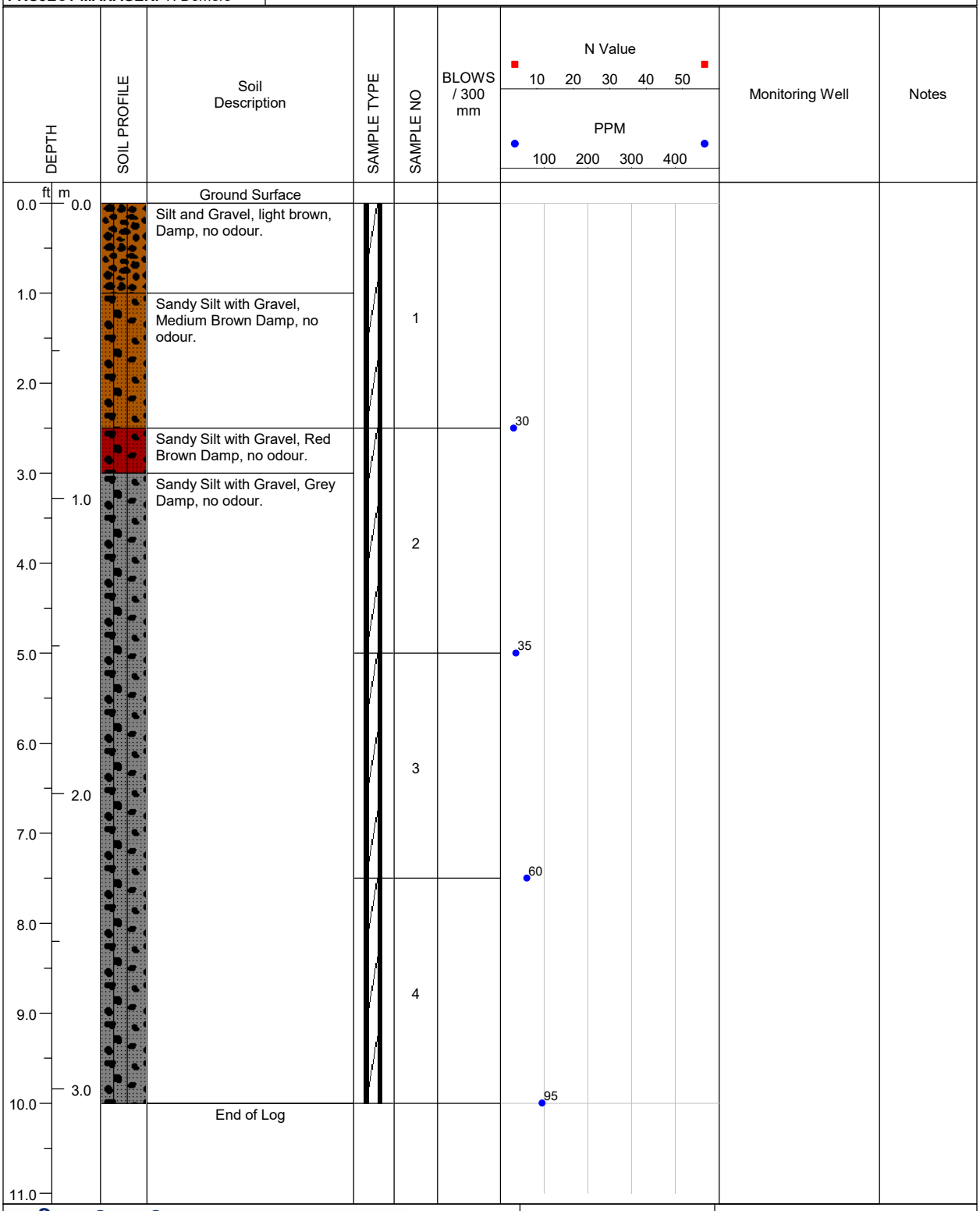
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-60	**BOREHOLE NO: 25-69**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

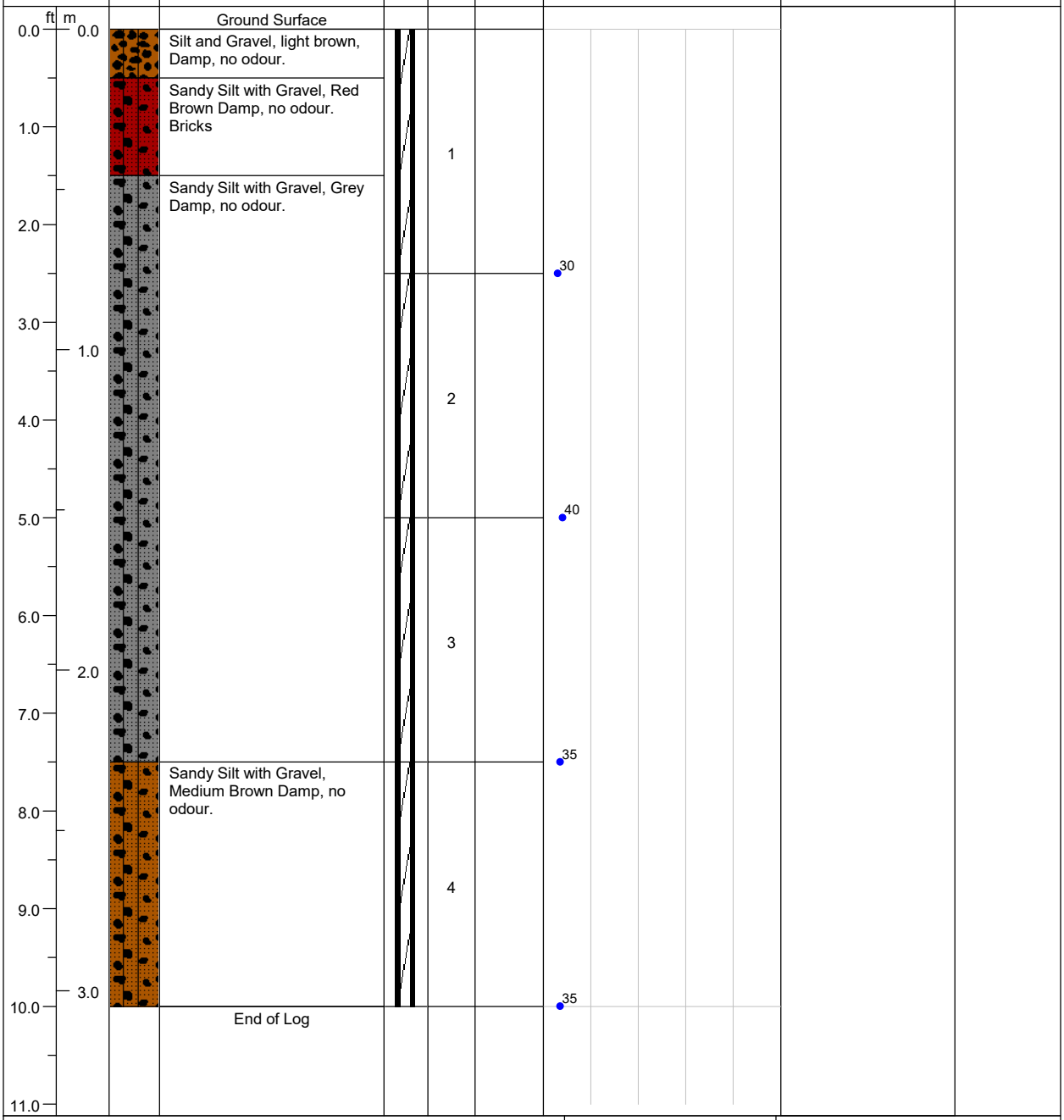
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-59	**BOREHOLE NO: 25-70**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

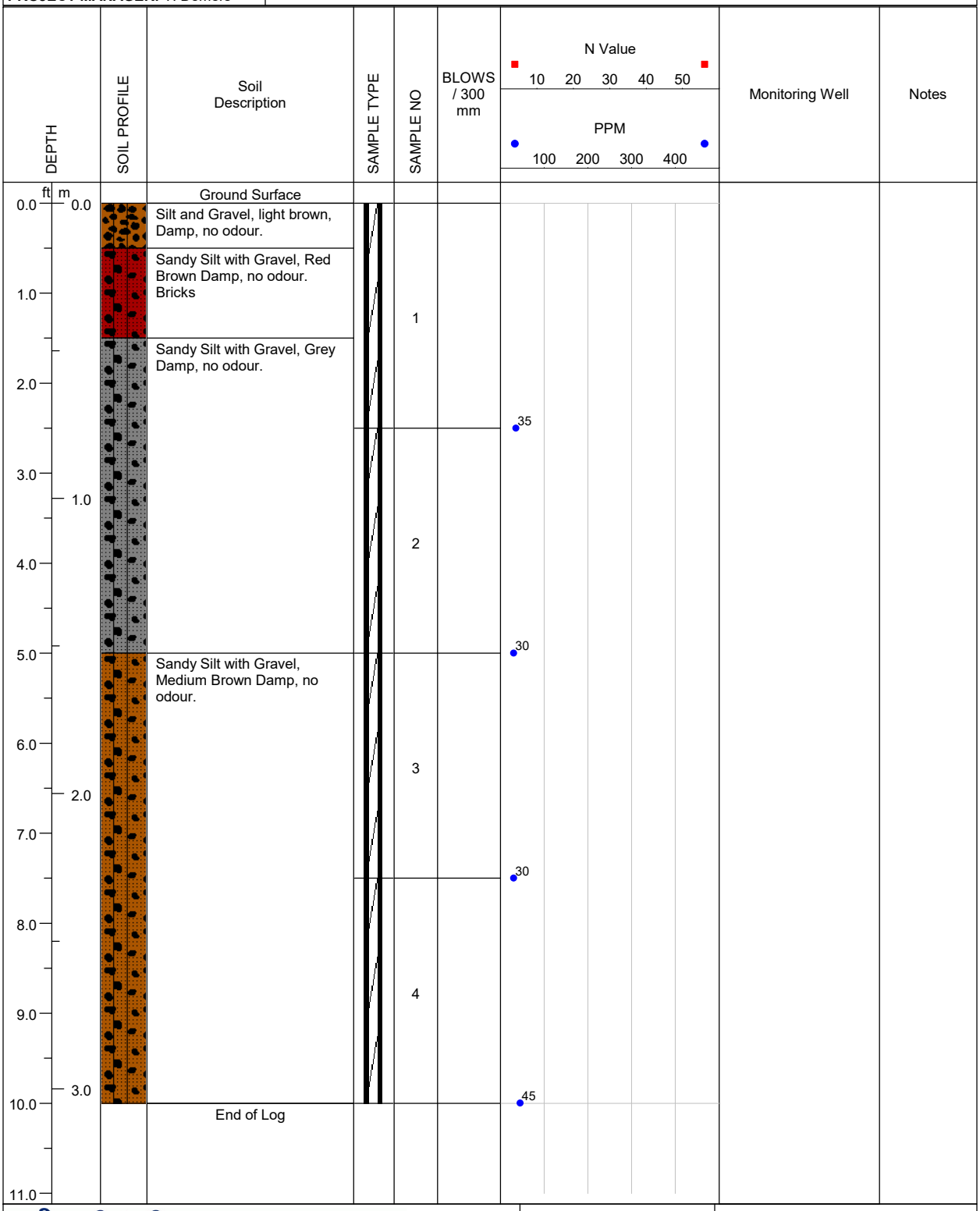
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-58	**BOREHOLE NO: 25-71**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



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LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

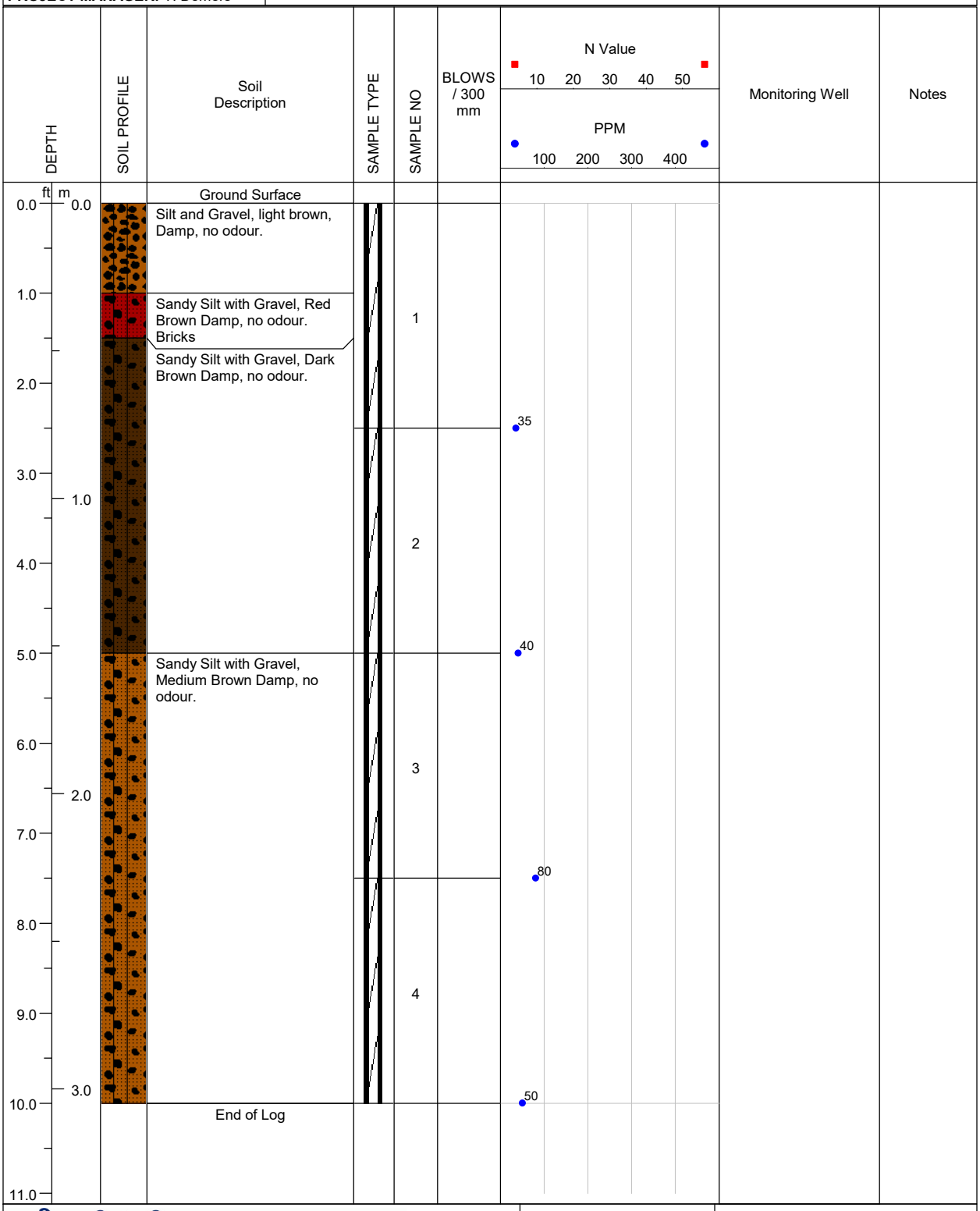
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-57	**BOREHOLE NO: 25-72**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

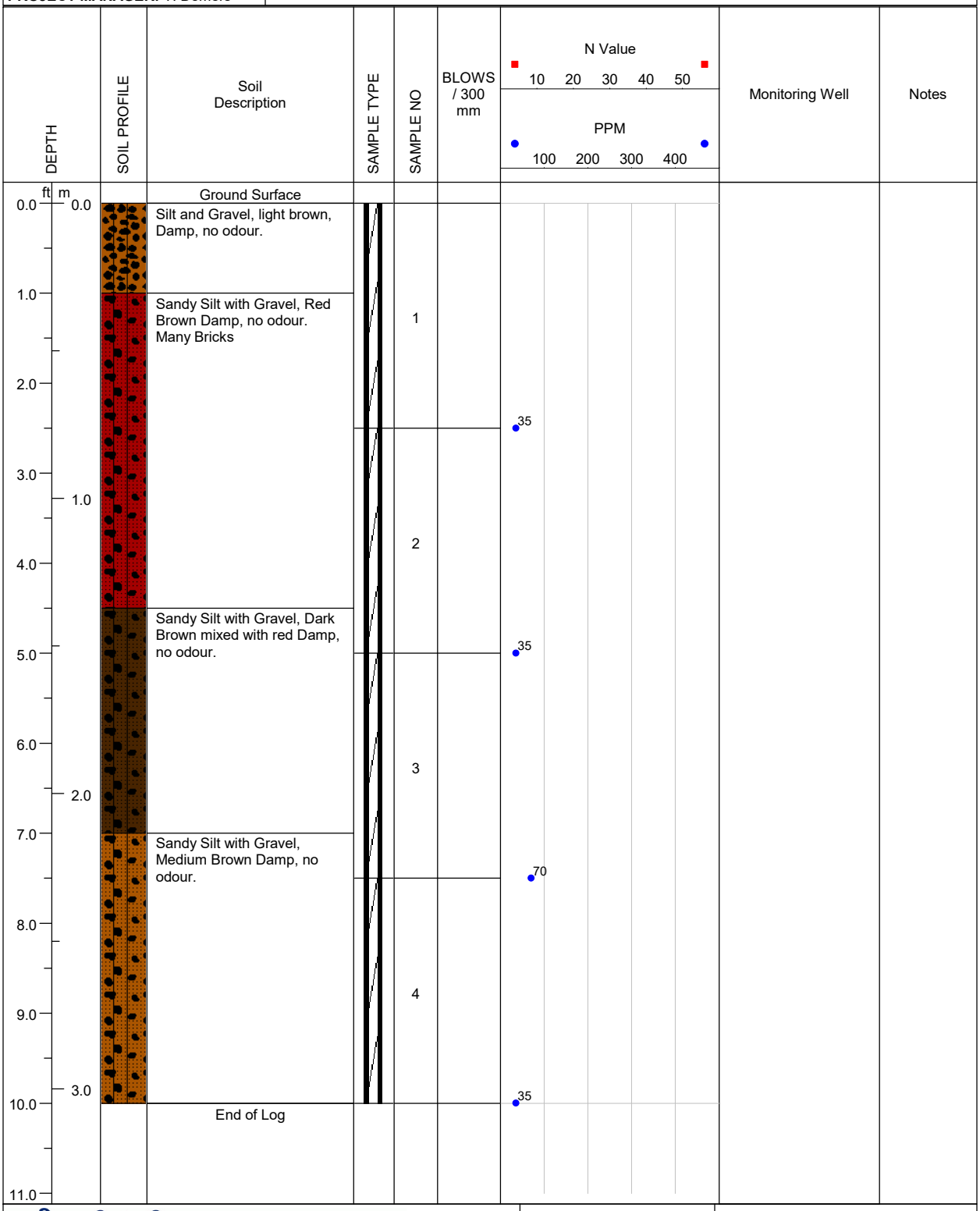
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-72	**BOREHOLE NO: 25-73**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

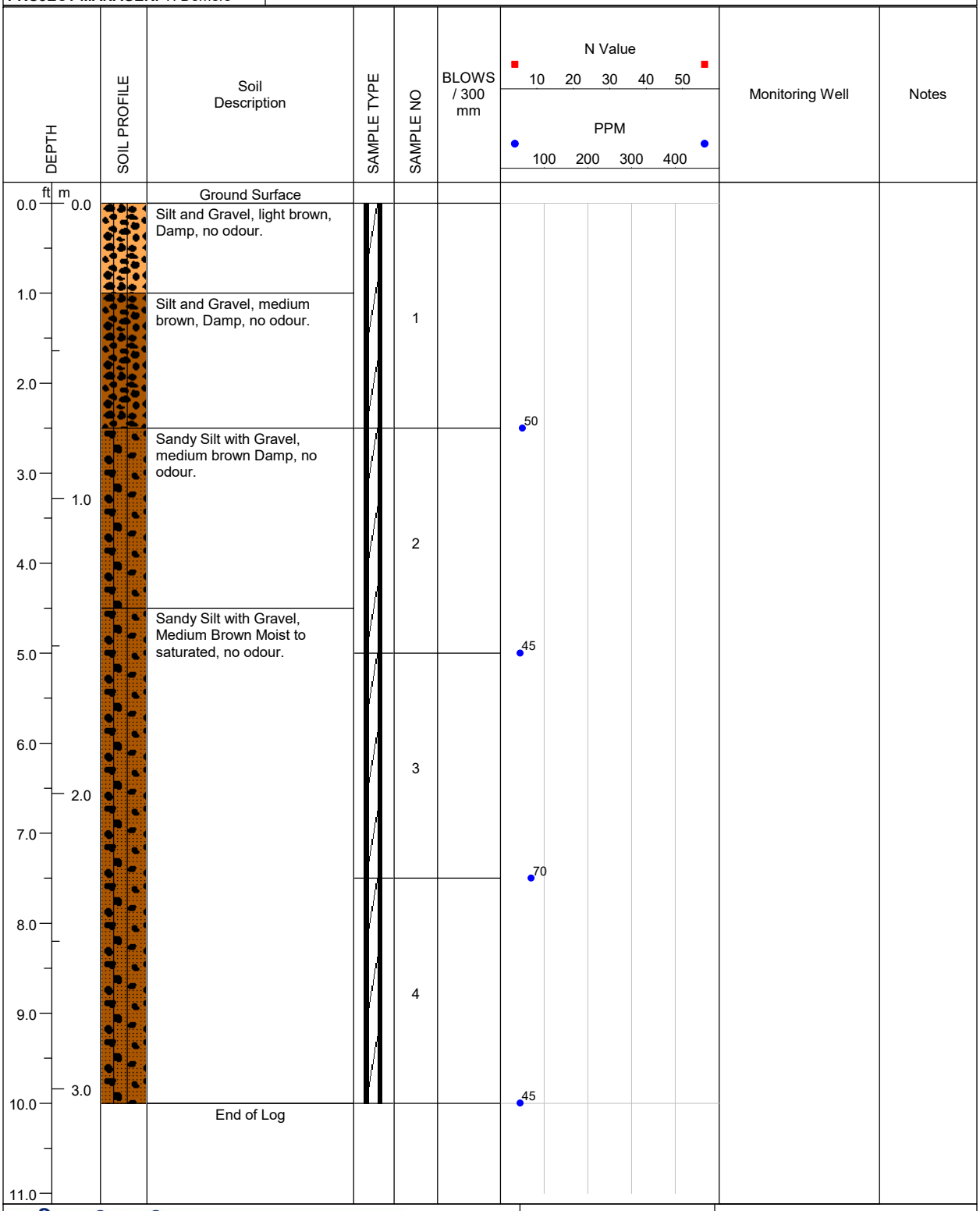
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 13m NW of S fenceline, 13m E of 25-71	**BOREHOLE NO: 25-74**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-70	**BOREHOLE NO: 25-75**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-69	**BOREHOLE NO: 25-76**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
		Ground Surface					
0.0	0.0	Silt and Gravel, light brown, Damp, no odour.					
1.0		Silt and Gravel, medium brown, Damp, no odour.	1				
2.0					55		
3.0	1.0	Sandy Silt with Gravel, medium brown Damp, no odour.	2				
4.0							
5.0		Sandy Silt with Gravel, Medium Brown Moist to saturated, no odour. Mixing of colours with red and brown Bricks and organics			45		
6.0			3				
	2.0	Sandy Silt with Gravel, Medium Brown Moist to saturated, no odour.					
7.0					80		
8.0			4				
9.0							
	3.0						
10.0		End of Log			65		
11.0							

N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-68	**BOREHOLE NO: 25-77**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0 – 3.0	0.0 – 1.0	Sandy Silt with Gravel, medium brown Damp, no odour.	1		55		
1.0 – 3.0	0.3 – 1.0	Sandy Silt with Gravel, grey/red Damp, no odour.					
3.0 – 10.0	1.0 – 3.0	Sandy Silt with Gravel, Medium Brown Moist to saturated, no odour.	2		35		
			3		50		
			4		75		
10.0	3.0	End of Log					

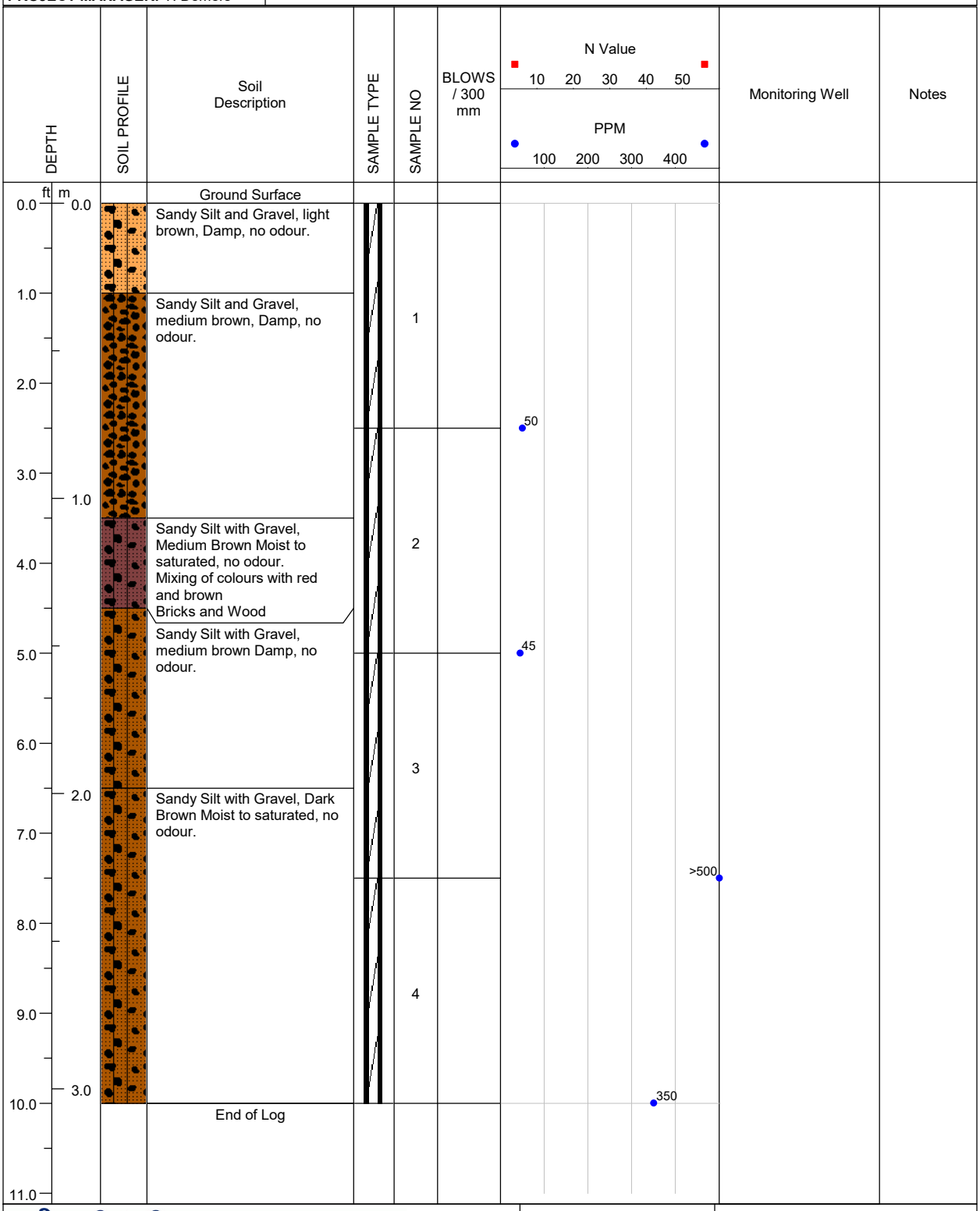
N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

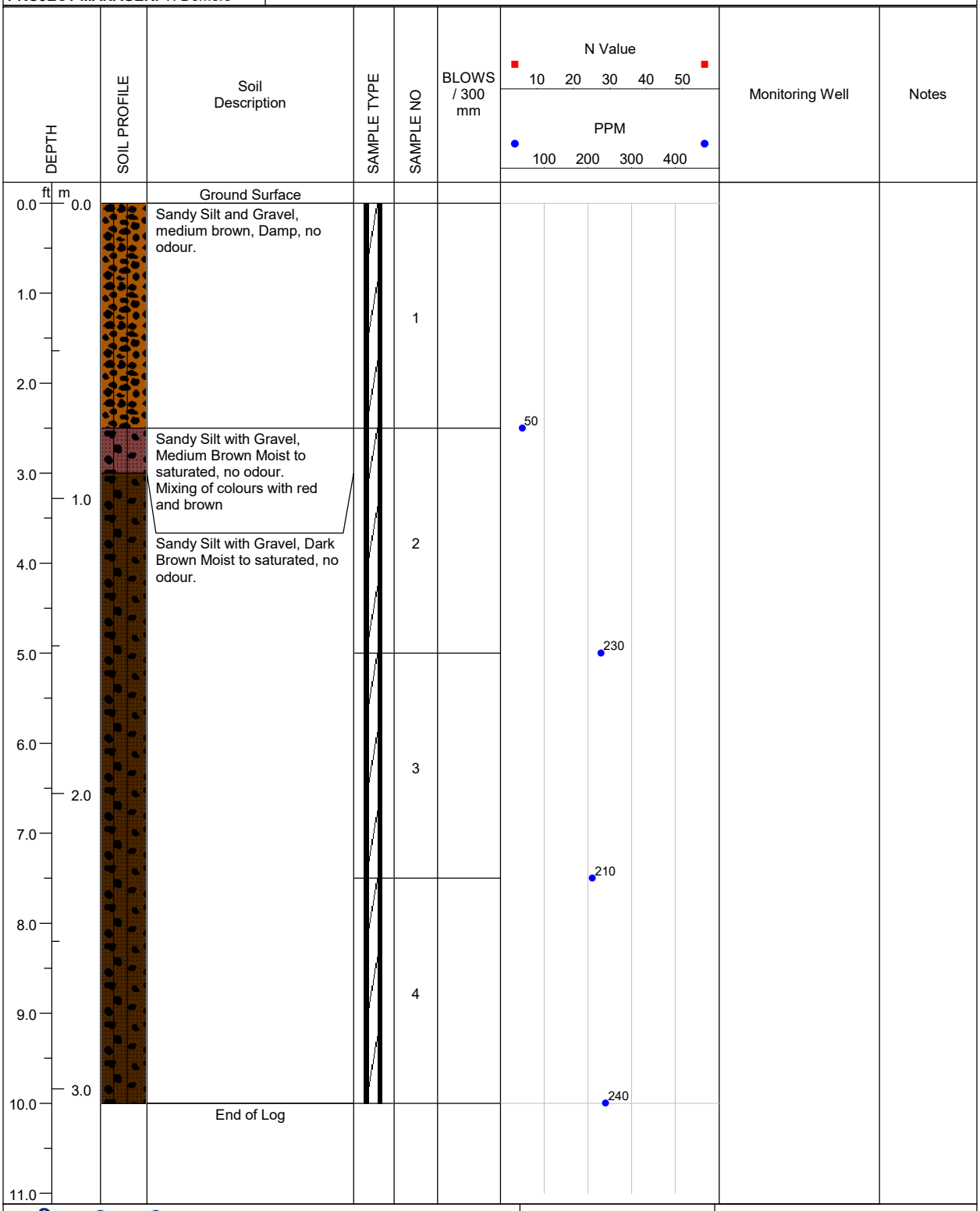
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-67	**BOREHOLE NO: 25-78**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

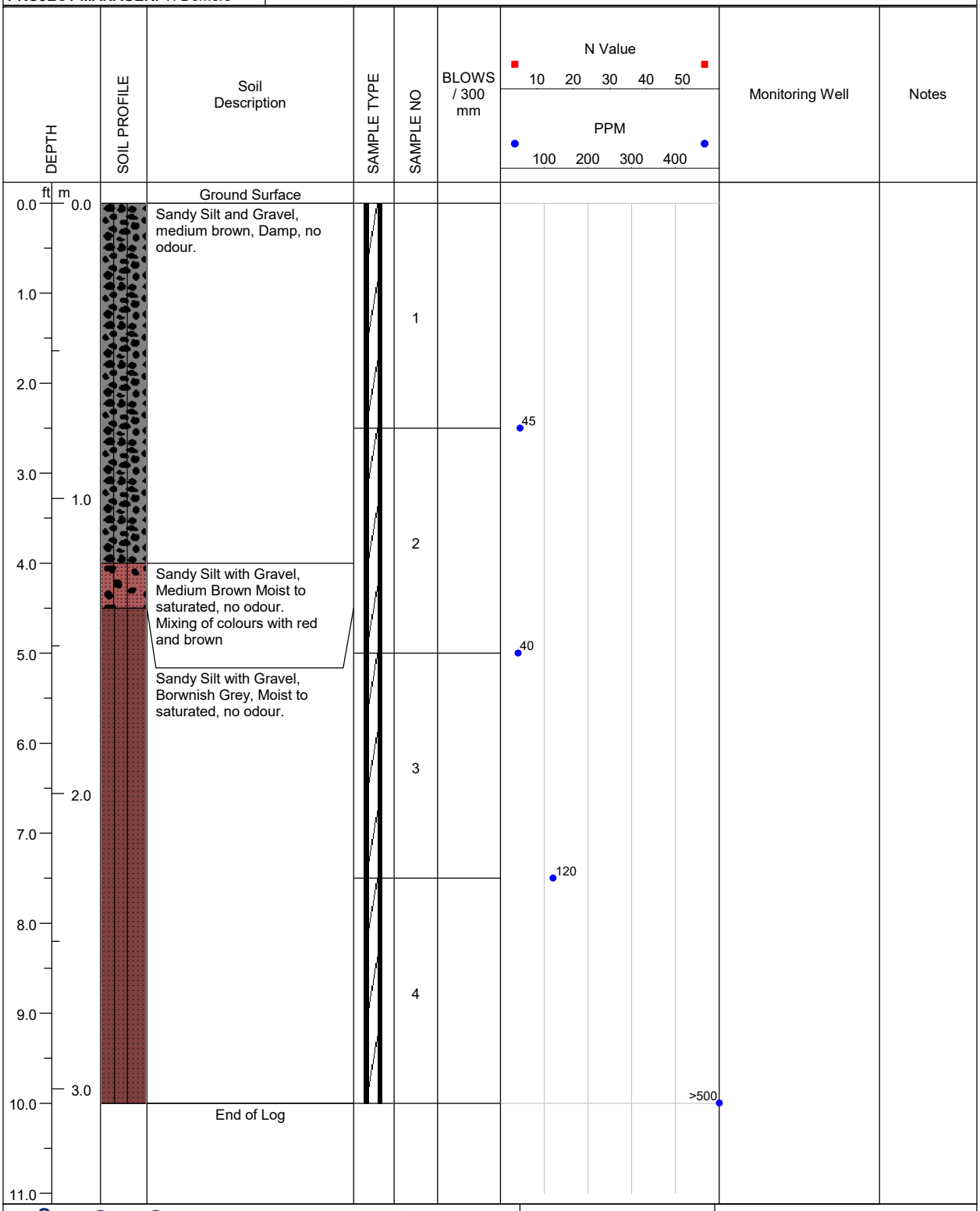
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-66	**BOREHOLE NO: 25-79**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-65	**BOREHOLE NO: 25-80**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/20/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m SE of N fenceline, 13m E of 25-80	**BOREHOLE NO: 25-81**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	

DEPTH (ft)	DEPTH (m)	Soil Description	SAMPLE NO	BLOWS / 300 mm	N Value / PPM	Monitoring Well	Notes
0.0	0.0	Ground Surface					
0.0	0.0	Sandy Silt and Gravel, light brown, Damp, no odour.					
1.0		Sandy Silt with Gravel, Dark Brown Moist to saturated, no odour.	1				
2.0					25		
3.0	1.0		2				
4.0							
5.0		Sandy Silt with Gravel, medium Brown damp, no odour.			70		
6.0			3				
7.0	2.0				380		
8.0			4				
9.0							
10.0	3.0	End of Log			>500		
11.0							

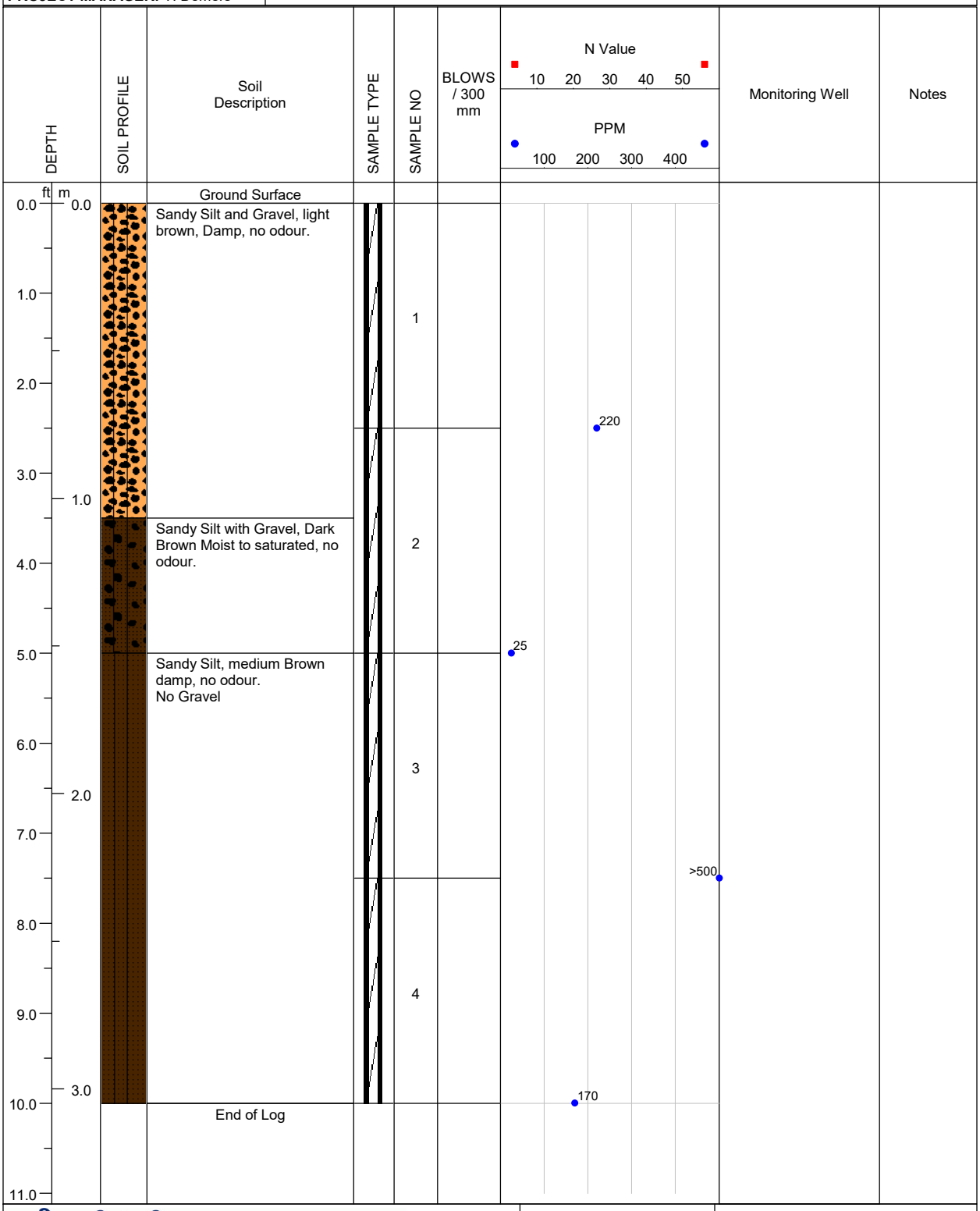
N Value: 10 20 30 40 50

PPM: 100 200 300 400

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

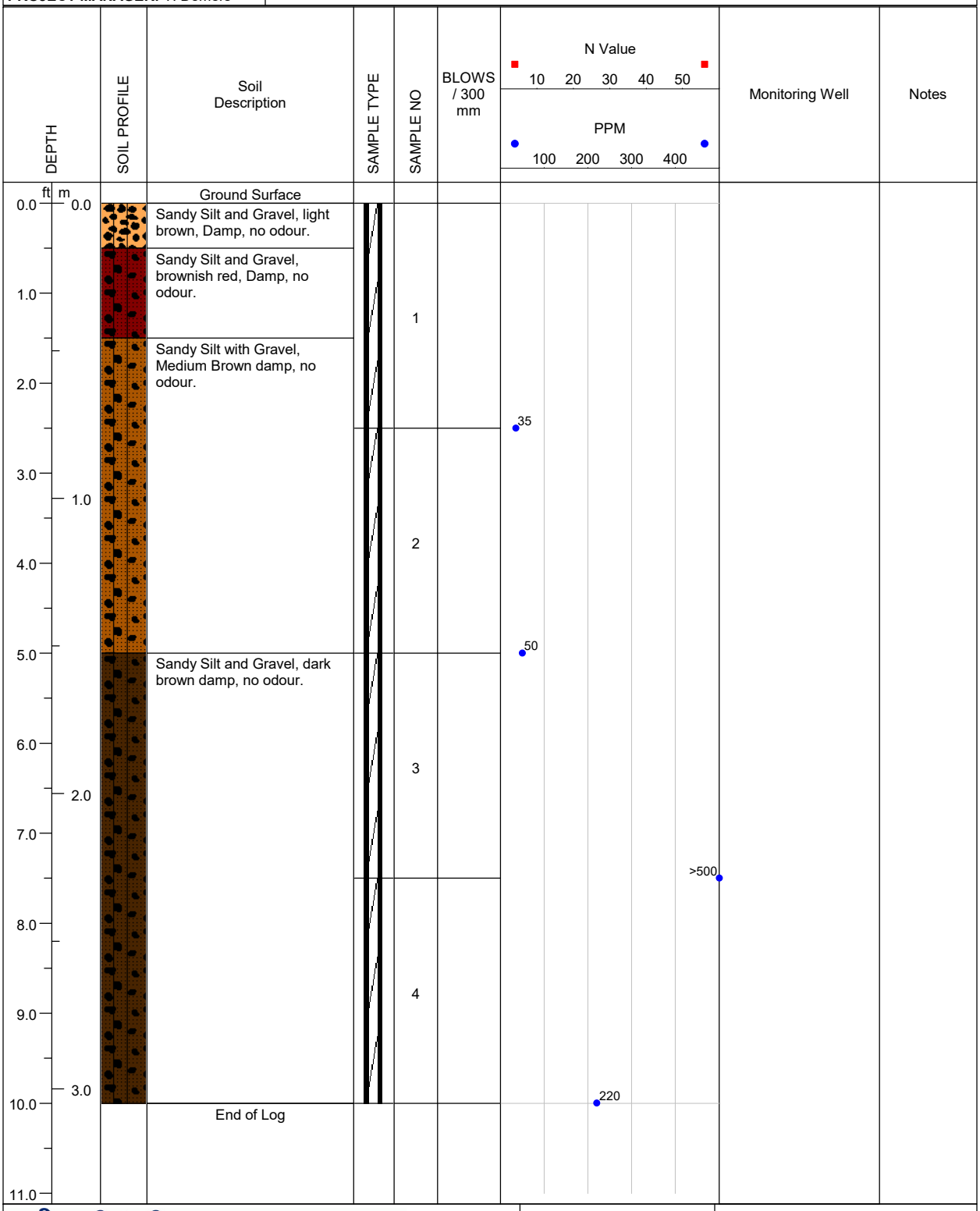
LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m SE of N fenceline, 13m E of 25-79	**BOREHOLE NO: 25-82**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

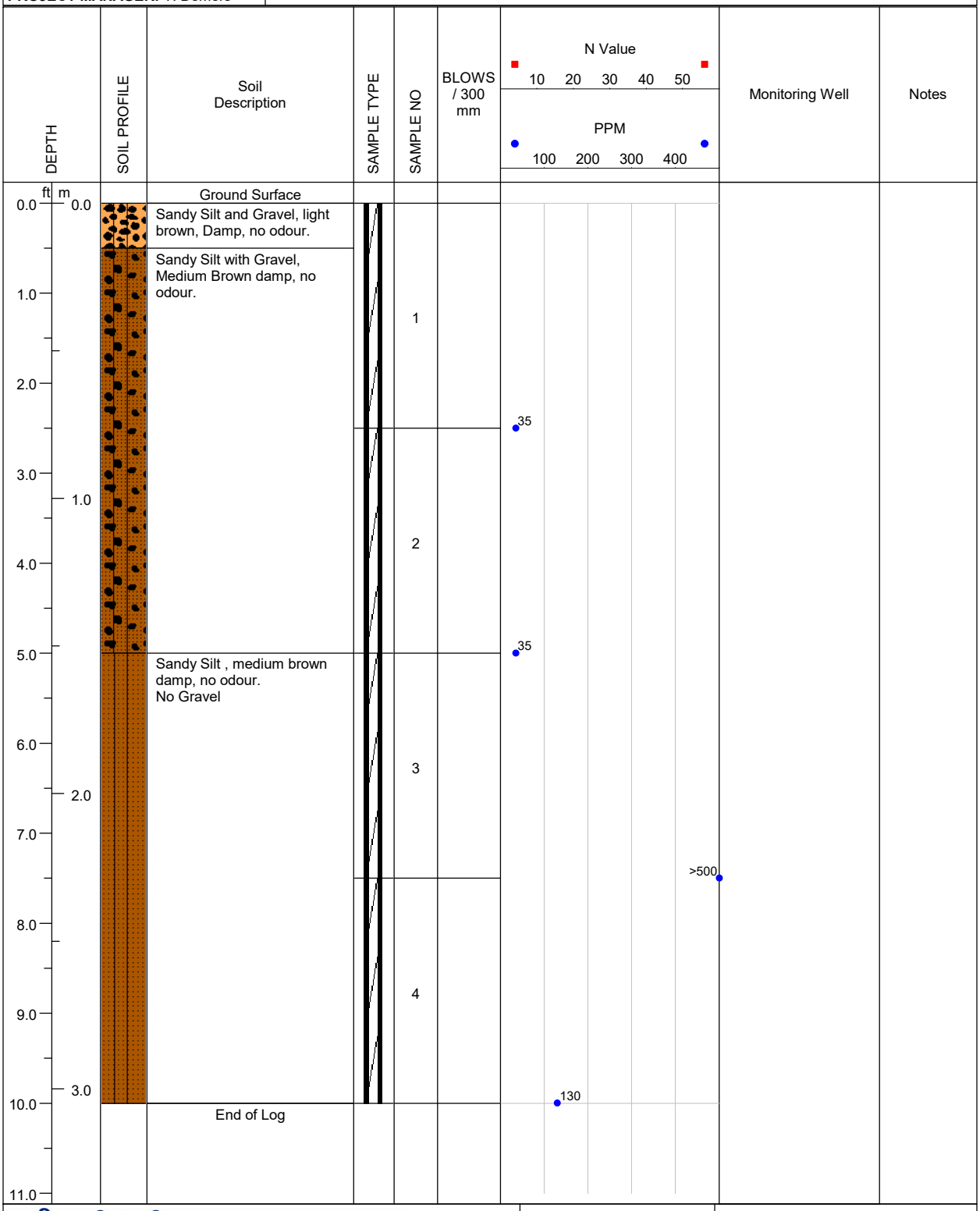
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m SE of N fenceline, 13m E of 25-78	**BOREHOLE NO: 25-83**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

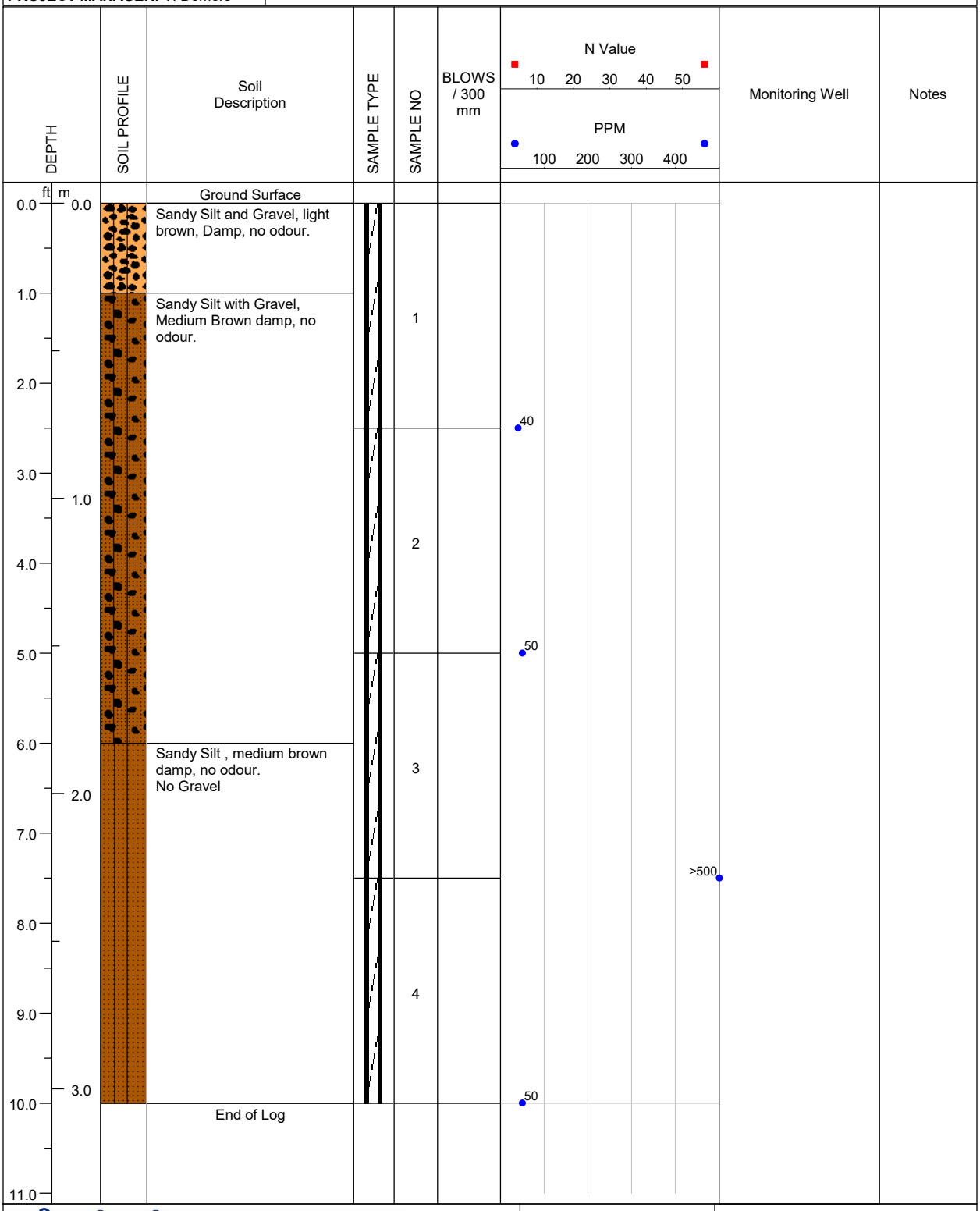
A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m SE of N fenceline, 13m E of 25-77	**BOREHOLE NO: 25-84**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



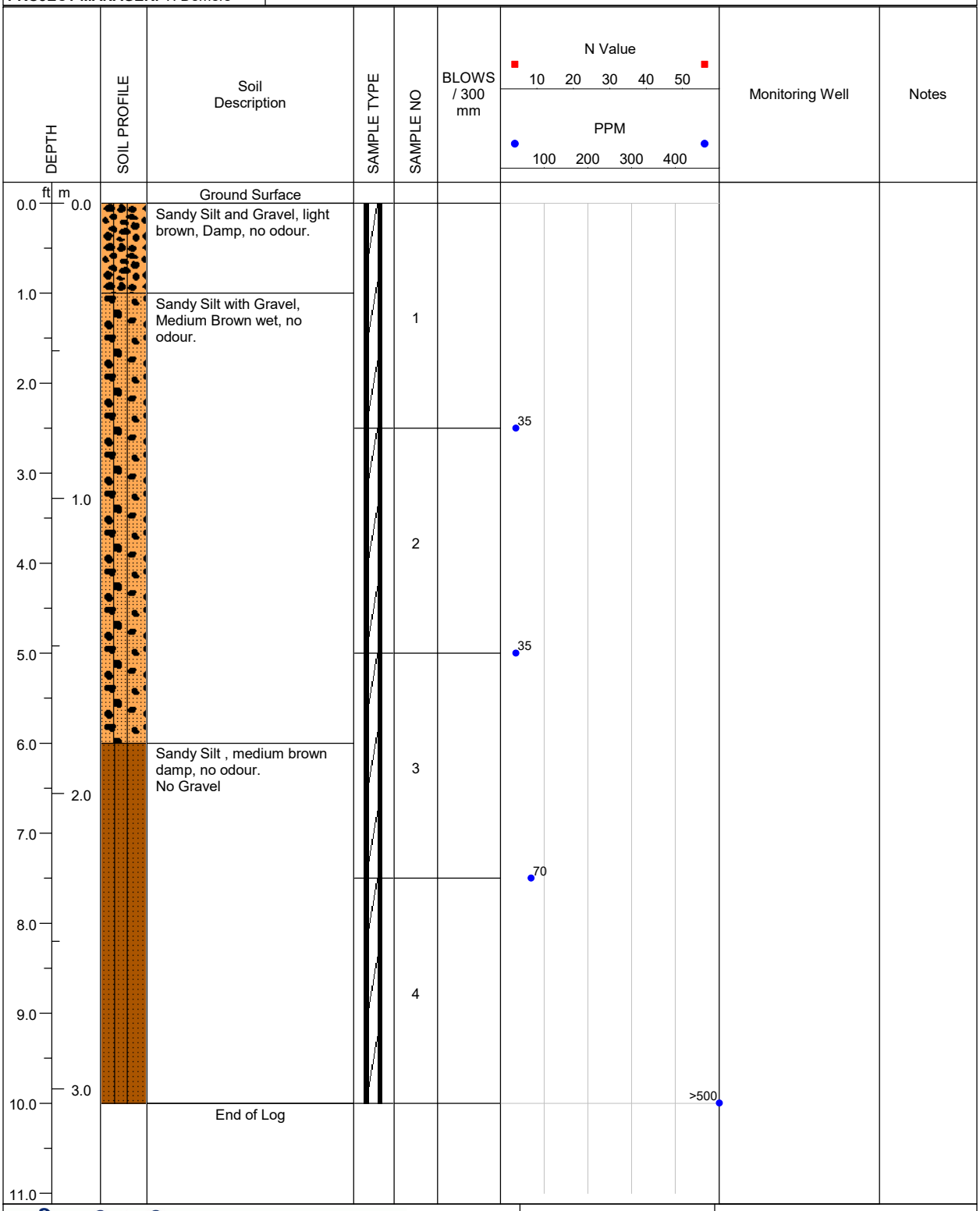
A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 44m NW of S fenceline, 13m E of 25-76	**BOREHOLE NO: 25-85**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



A & A ENVIRONMENTAL CONSULTANTS INC. 16 Young Street Woodstock, ON	**LOGGED BY:** E. Fulsom	**COMPLETION DEPTH:** 10ft.
	REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
	DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

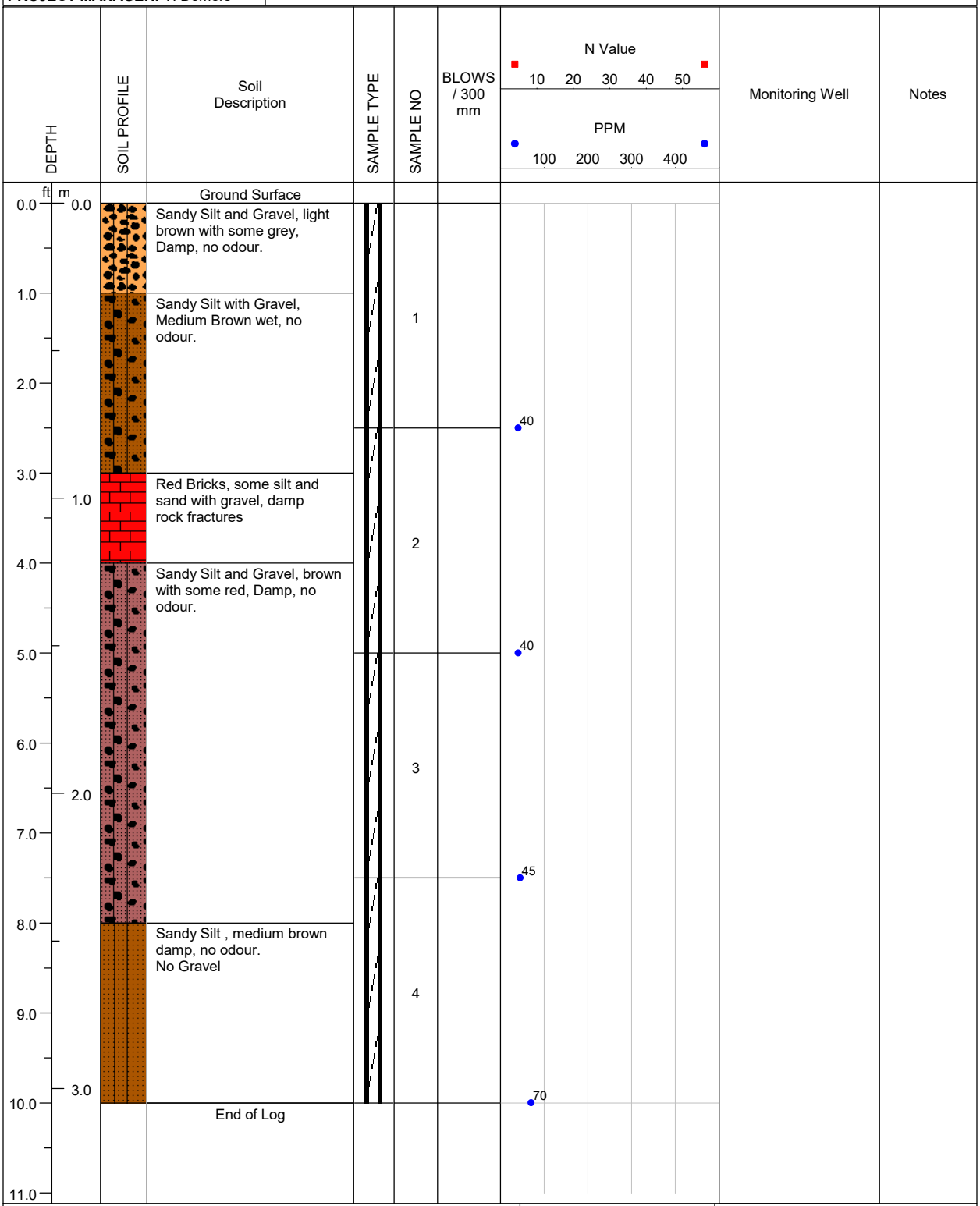
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 31m NW of S fenceline, 13m E of 25-75	**BOREHOLE NO: 25-86**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

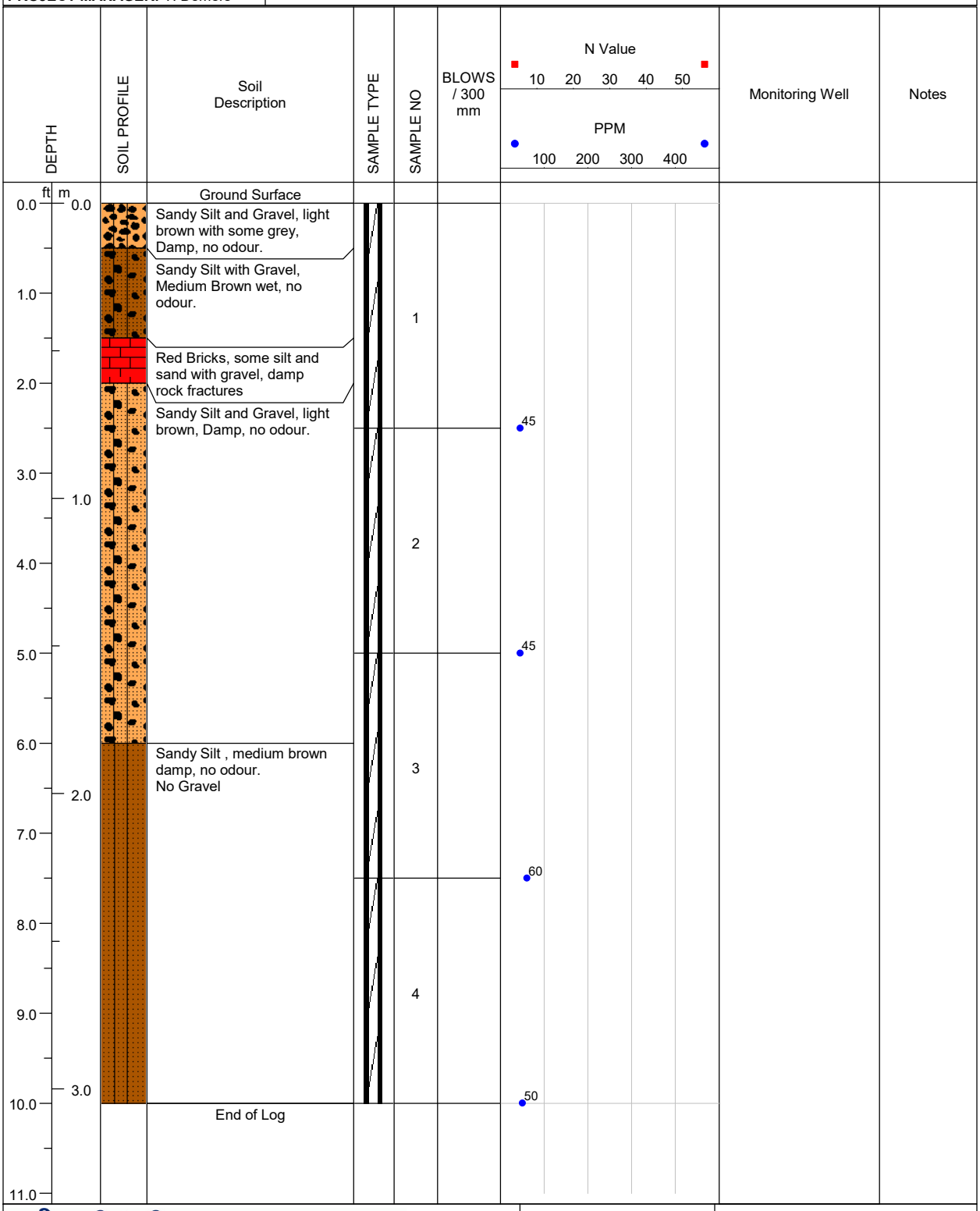
PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 18m NW of S fenceline, 13m E of 25-74	**BOREHOLE NO: 25-87**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

PROJECT: BVD Puslinch Delineation	**BH LOCATION:** 5m NW of S fenceline, 13m E of 25-73	**BOREHOLE NO: 25-88**
PROJECT NO: 8368	**LOCATION:** 7504 McLean Road, Puslinch	
PROJECT MANAGER: T. Demers	**COMPANY NAME: A&A Environmental Consultants Inc.**	



LOGGED BY: E. Fulsom	**COMPLETION DEPTH:** 10ft.
REVIEWED BY: A.Rasoul	**DRILL METHOD:** Direct Push
DRILL DATE: 01/21/2025	**PAGE:** 1 of 1

A & A ENVIRONMENTAL CONSULTANTS INC.
16 Young Street Woodstock, ON

APPENDIX D – Certificates of Analysis

AGAT Laboratories

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

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680
ATTENTION TO: Ali Rasoul
PROJECT: 8368 BVD Puslinch
AGAT WORK ORDER: 24T166367
SOIL ANALYSIS REVIEWED BY: Sukhwinder Randhawa, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Jul 03, 2024
PAGES (INCLUDING COVER): 13
VERSION*: 1

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

*Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
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- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Certificate of Analysis

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-25 **DATE REPORTED: 2024-07-03**

		SAMPLE DESCRIPTION:		BH1@0-2.5	BH2@0-2.5	BH3@2.5-5	BH3@5-7.5	BH4@2.5-5	BH5@0-2.5	DUP BHI
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24
Parameter	Unit	G / S	RDL	5960149	5960154	5960155	5960157	5960158	5960159	5960160
Antimony	µg/g	40	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	6	5	6	5	<1	7
Barium	µg/g	670	2.0	186	104	64.3	64.7	32.0	<2.0	171
Beryllium	µg/g	8	0.5	0.9	0.6	0.5	0.6	<0.5	<0.5	0.8
Boron	µg/g	120	5	24	10	7	6	8	<5	21
Cadmium	µg/g	1.9	0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5	<0.5
Chromium	µg/g	160	5	29	23	15	16	12	<5	27
Cobalt	µg/g	80	0.8	12.9	5.8	6.2	6.6	4.6	<0.8	13.0
Copper	µg/g	230	1.0	23.4	32.8	19.5	21.2	18.8	<1.0	23.9
Lead	µg/g	120	1	15	45	44	54	36	<1	15
Molybdenum	µg/g	40	0.5	1.4	1.3	<0.5	<0.5	0.5	<0.5	1.4
Nickel	µg/g	270	1	29	15	13	14	10	<1	29
Selenium	µg/g	5.5	0.8	1.9	1.3	2.1	2.0	1.4	<0.8	1.7
Silver	µg/g	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	3.3	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	33	0.50	0.79	0.65	0.54	0.55	<0.50	<0.50	0.77
Vanadium	µg/g	86	2.0	34.6	26.9	27.1	26.1	19.3	<2.0	33.7
Zinc	µg/g	340	5	69	203	174	268	237	<5	67

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-25 **DATE REPORTED: 2024-07-03**

		SAMPLE DESCRIPTION:		BH1@0-2.5	BH2@0-2.5	BH3@2.5-5	BH3@5-7.5	BH4@2.5-5	BH5@0-2.5	DUP BHI
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24
Parameter	Unit	G / S	RDL	5960149	5960154	5960155	5960157	5960158	5960159	5960160
Electrical Conductivity (2:1)	mS/cm	1.4	0.005	0.248	0.601	0.826	0.259	0.199	0.276	0.220
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	12	N/A	0.712	0.524	0.377	0.226	0.485	0.680	0.544

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5960149-5960160 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-25 **DATE REPORTED: 2024-07-03**

		SAMPLE DESCRIPTION:		BH1@0-2.5	BH2@0-2.5	BH3@2.5-5	BH3@5-7.5	BH4@2.5-5	BH5@0-2.5	DUP BHI
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24
Parameter	**Unit**	**G / S**	**RDL**	**5960149**	**5960154**	**5960155**	**5960157**	**5960158**	**5960159**	**5960160**
F1 (C6 to C10)	µg/g	55	5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	230	10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	1700	50	<50	311	<50	<50	<50	77	<50
F4 (C34 to C50)	µg/g	3300	50	<50	247	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	3300	50	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	10.7	17.4	21.8	20.7	9.3	21.6	6.4
Surrogate	**Unit**	**Acceptable Limits**								
Toluene-d8	%	50-140		88	80	80	83	80	81	80
Terphenyl	%	60-140		79	130	87	104	90	110	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5960149-5960160 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2024-06-25

DATE REPORTED: 2024-07-03

		SAMPLE DESCRIPTION:		BH1@0-2.5	BH2@0-2.5	BH3@2.5-5	BH3@5-7.5	BH4@2.5-5	BH5@0-2.5	DUP BHI
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24
Parameter	Unit	G / S	RDL	5960149	5960154	5960155	5960157	5960158	5960159	5960160
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.032	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.064	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	1.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	1.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	70	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	55	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.47	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	6.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.21	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.32	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.16	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.91	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	18	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	31	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	13	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	4.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.087	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	9.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	[redacted]	[redacted]

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2024-06-25

DATE REPORTED: 2024-07-03

		SAMPLE DESCRIPTION:		BH1@0-2.5	BH2@0-2.5	BH3@2.5-5	BH3@5-7.5	BH4@2.5-5	BH5@0-2.5	DUP BHI
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24	2024-06-24
Parameter	**Unit**	**G / S**	**RDL**	**5960149**	**5960154**	**5960155**	**5960157**	**5960158**	**5960159**	**5960160**
Bromoform	ug/g	0.61	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	34	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	9.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	6.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	26	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.18	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	46	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	10.7	17.4	21.8	20.7	9.3	21.6	6.4
Surrogate	**Unit**	**Acceptable Limits**								
Toluene-d8	% Recovery	50-140		88	80	80	83	80	81	80
4-Bromofluorobenzene	% Recovery	50-140		84	81	80	84	80	78	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5960149-5960160 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 24T166367
PROJECT: 8368 BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 Mclean Rd.,Puslinch
SAMPLED BY:E.F.

Soil Analysis

RPT Date: Jul 03, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Soil)															
Antimony	5958882		<0.8	<0.8	NA	< 0.8	77%	70%	130%	108%	80%	120%	107%	70%	130%
Arsenic	5958882		3	3	NA	< 1	108%	70%	130%	119%	80%	120%	122%	70%	130%
Barium	5958882		31.3	32.5	3.8%	< 2.0	120%	70%	130%	102%	80%	120%	102%	70%	130%
Beryllium	5958882		<0.5	<0.5	NA	< 0.5	105%	70%	130%	100%	80%	120%	114%	70%	130%
Boron	5958882		<5	<5	NA	< 5	94%	70%	130%	81%	80%	120%	89%	70%	130%
Cadmium	5958882		<0.5	<0.5	NA	< 0.5	110%	70%	130%	104%	80%	120%	111%	70%	130%
Chromium	5958882		14	14	NA	< 5	100%	70%	130%	88%	80%	120%	100%	70%	130%
Cobalt	5958882		4.6	4.8	4.3%	< 0.8	97%	70%	130%	101%	80%	120%	101%	70%	130%
Copper	5958882		12.1	12.8	5.6%	< 1.0	94%	70%	130%	104%	80%	120%	102%	70%	130%
Lead	5958882		5	6	18.2%	< 1	108%	70%	130%	91%	80%	120%	104%	70%	130%
Molybdenum	5958882		<0.5	<0.5	NA	< 0.5	96%	70%	130%	106%	80%	120%	108%	70%	130%
Nickel	5958882		11	11	0.0%	2	100%	70%	130%	103%	80%	120%	101%	70%	130%
Selenium	5958882		1.8	1.8	NA	< 0.8	99%	70%	130%	104%	80%	120%	105%	70%	130%
Silver	5958882		<0.5	<0.5	NA	< 0.5	108%	70%	130%	104%	80%	120%	109%	70%	130%
Thallium	5958882		<0.5	<0.5	NA	< 0.5	102%	70%	130%	89%	80%	120%	100%	70%	130%
Uranium	5958882		<0.50	<0.50	NA	< 0.50	103%	70%	130%	87%	80%	120%	103%	70%	130%
Vanadium	5958882		26.3	27.0	2.6%	< 2.0	105%	70%	130%	103%	80%	120%	104%	70%	130%
Zinc	5958882		24	25	NA	< 5	103%	70%	130%	102%	80%	120%	103%	70%	130%

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

O. Reg. 153(511) - ORPs (Soil)									
Electrical Conductivity (2:1)	5955306	0.133	0.137	3.0%	< 0.005	104%	80%	120%	
Sodium Adsorption Ratio (2:1) (Calc.)	5955337	0.190	0.192	1.0%	NA				

Comments: NA signifies Not Applicable.

O. Reg. 153(511) - ORPs (Soil)									
Electrical Conductivity (2:1)	5955337	0.111	0.106	4.6%	< 0.005	103%	80%	120%	

Certified By:

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 24T166367
PROJECT: 8368 BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 Mclean Rd.,Puslinch
SAMPLED BY:E.F.

Trace Organics Analysis

RPT Date: Jul 03, 2024

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
O. Reg. 153(511) - PHCs F1 - F4 (with VOC) (Soil)															
F1 (C6 to C10)	5960160	5960160	<5	<5	NA	< 5	96%	60%	140%	103%	60%	140%	98%	60%	140%
F2 (C10 to C16)	5962936		< 10	< 10	NA	< 10	109%	60%	140%	98%	60%	140%	100%	60%	140%
F3 (C16 to C34)	5962936		53	53	NA	< 50	106%	60%	140%	125%	60%	140%	124%	60%	140%
F4 (C34 to C50)	5962936		< 50	< 50	NA	< 50	62%	60%	140%	78%	60%	140%	89%	60%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	104%	50%	140%	82%	50%	140%	80%	50%	140%
Vinyl Chloride	5960160	5960160	<0.02	<0.02	NA	< 0.02	112%	50%	140%	92%	50%	140%	122%	50%	140%
Bromomethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	113%	50%	140%	77%	50%	140%	123%	50%	140%
Trichlorofluoromethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	100%	50%	140%	104%	50%	140%	123%	50%	140%
Acetone	5960160	5960160	<0.50	<0.50	NA	< 0.50	103%	50%	140%	93%	50%	140%	91%	50%	140%
1,1-Dichloroethylene	5960160	5960160	<0.05	<0.05	NA	< 0.05	106%	50%	140%	79%	60%	130%	105%	50%	140%
Methylene Chloride	5960160	5960160	<0.05	<0.05	NA	< 0.05	96%	50%	140%	100%	60%	130%	96%	50%	140%
Trans- 1,2-Dichloroethylene	5960160	5960160	<0.05	<0.05	NA	< 0.05	95%	50%	140%	66%	60%	130%	79%	50%	140%
Methyl tert-butyl Ether	5960160	5960160	<0.05	<0.05	NA	< 0.05	98%	50%	140%	109%	60%	130%	104%	50%	140%
1,1-Dichloroethane	5960160	5960160	<0.02	<0.02	NA	< 0.02	80%	50%	140%	85%	60%	130%	105%	50%	140%
Methyl Ethyl Ketone	5960160	5960160	<0.50	<0.50	NA	< 0.50	93%	50%	140%	132%	50%	140%	117%	50%	140%
Cis- 1,2-Dichloroethylene	5960160	5960160	<0.02	<0.02	NA	< 0.02	92%	50%	140%	68%	60%	130%	80%	50%	140%
Chloroform	5960160	5960160	<0.04	<0.04	NA	< 0.04	83%	50%	140%	66%	60%	130%	99%	50%	140%
1,2-Dichloroethane	5960160	5960160	<0.03	<0.03	NA	< 0.03	104%	50%	140%	99%	60%	130%	100%	50%	140%
1,1,1-Trichloroethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	99%	50%	140%	95%	60%	130%	101%	50%	140%
Carbon Tetrachloride	5960160	5960160	<0.05	<0.05	NA	< 0.05	89%	50%	140%	76%	60%	130%	81%	50%	140%
Benzene	5960160	5960160	<0.02	<0.02	NA	< 0.02	90%	50%	140%	91%	60%	130%	98%	50%	140%
1,2-Dichloropropane	5960160	5960160	<0.03	<0.03	NA	< 0.03	91%	50%	140%	91%	60%	130%	101%	50%	140%
Trichloroethylene	5960160	5960160	<0.03	<0.03	NA	< 0.03	89%	50%	140%	97%	60%	130%	91%	50%	140%
Bromodichloromethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	88%	50%	140%	79%	60%	130%	77%	50%	140%
Methyl Isobutyl Ketone	5960160	5960160	<0.50	<0.50	NA	< 0.50	86%	50%	140%	113%	50%	140%	109%	50%	140%
1,1,2-Trichloroethane	5960160	5960160	<0.04	<0.04	NA	< 0.04	106%	50%	140%	107%	60%	130%	103%	50%	140%
Toluene	5960160	5960160	<0.05	<0.05	NA	< 0.05	96%	50%	140%	88%	60%	130%	97%	50%	140%
Dibromochloromethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	61%	50%	140%	71%	60%	130%	77%	50%	140%
Ethylene Dibromide	5960160	5960160	<0.04	<0.04	NA	< 0.04	81%	50%	140%	76%	60%	130%	78%	50%	140%
Tetrachloroethylene	5960160	5960160	<0.05	<0.05	NA	< 0.05	80%	50%	140%	90%	60%	130%	99%	50%	140%
1,1,1,2-Tetrachloroethane	5960160	5960160	<0.04	<0.04	NA	< 0.04	62%	50%	140%	73%	60%	130%	69%	50%	140%
Chlorobenzene	5960160	5960160	<0.05	<0.05	NA	< 0.05	103%	50%	140%	97%	60%	130%	98%	50%	140%
Ethylbenzene	5960160	5960160	<0.05	<0.05	NA	< 0.05	108%	50%	140%	102%	60%	130%	102%	50%	140%
m & p-Xylene	5960160	5960160	<0.05	<0.05	NA	< 0.05	116%	50%	140%	108%	60%	130%	107%	50%	140%
Bromoform	5960160	5960160	<0.05	<0.05	NA	< 0.05	88%	50%	140%	91%	60%	130%	62%	50%	140%
Styrene	5960160	5960160	<0.05	<0.05	NA	< 0.05	86%	50%	140%	80%	60%	130%	77%	50%	140%
1,1,2,2-Tetrachloroethane	5960160	5960160	<0.05	<0.05	NA	< 0.05	105%	50%	140%	89%	60%	130%	89%	50%	140%
o-Xylene	5960160	5960160	<0.05	<0.05	NA	< 0.05	95%	50%	140%	103%	60%	130%	105%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jul 03, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	5960160	5960160	<0.05	<0.05	NA	< 0.05	86%	50%	140%	87%	60%	130%	85%	50%	140%
1,4-Dichlorobenzene	5960160	5960160	<0.05	<0.05	NA	< 0.05	94%	50%	140%	85%	60%	130%	80%	50%	140%
1,2-Dichlorobenzene	5960160	5960160	<0.05	<0.05	NA	< 0.05	80%	50%	140%	78%	60%	130%	85%	50%	140%
n-Hexane	5960160	5960160	<0.05	<0.05	NA	< 0.05	74%	50%	140%	92%	60%	130%	89%	50%	140%

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

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES

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Method Summary

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AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166367

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 Mclean Rd.,Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Mississauga, Ontario L4Z 1Y2
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Chain of Custody Record

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

Laboratory Use Only

Work Order #: 24T166367

Cooler Quantity: 1 med

Arrival Temperatures: 6.5 | 6.9 | 5.7

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: F/I

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

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

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

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply): _____

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

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

Project Information:

Project: 8368 BVD Puslinch
Site Location: 7504 McLean Rd., Puslinch
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI	O. Reg 153: Metals and Inorganics	All Metals ☐ 153 Metals (excl. Hydrides)	Hydride Metals ☐ 153 Metals (incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN	Cr⁶⁺ ☑ EC ☐ FOC ☐ Hg	pH ☑ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN	NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
BH1 @ 0-2.5		6/24/24	3	S							☑																☑		☑			
BH2 @ 0-2.5		6/24/24	3	S							☑																☑		☑			
BH3 @ 2.5-5		6/24/24	3	S							☑																☑		☑			
BH3 @ 5-7.5		6/24/24	3	S							☑																☑		☑			
BH4 @ 2.5-5		6/24/24	3	S							☑																☑		☑			
~~BH5 @ 0-2.5~~		~~6/24/24~~	~~3~~	~~S~~							☑																☑		☑			
DUP BH1		6/24/24	3	S							☑																☑		☑			
					**please adjust soil texture																											
					to results of sieve analysis																											

Samples Relinquished By (Print Name and Sign): E. Fulson [redacted]	Date: 6/25/24	Time: 10am	Samples Received By (Print Name and Sign): [redacted]	Date: 25-6-24	Time: 1240pm	
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:	Page 1 of 1
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:	N:

Document ID: DIV-78-1511.015

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

Date Issued: March 16, 2018

AGAT Laboratories

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680

ATTENTION TO: Ali Rasoul

PROJECT: 8368 BVD Puslinch

AGAT WORK ORDER: 24T166836

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead

DATE REPORTED: Jul 04, 2024

PAGES (INCLUDING COVER): 17

VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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

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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1	MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962156	5962161	5962170	5962171
Naphthalene	µg/L	7	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	0.4	0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Napthalene	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
Sediment				2	2	2	2
Surrogate	Unit	Acceptable Limits					
Naphthalene-d8	%	50-140		89	95	85	93
Acridine-d9	%	50-140		81	115	92	62
Terphenyl-d14	%	50-140		70	74	80	83

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962156-5962171 Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amount
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1	MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962156	5962161	5962170	5962171
F1 (C6 to C10)	µg/L	420	25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA	NA	NA
Sediment				2	2	2	2
Surrogate	Unit	Acceptable Limits					
Toluene-d8	%	50-140		93	98	97	99
Terphenyl	% Recovery	60-140		69	61	76	73

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962156-5962171 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Water)

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1	MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962156	5962161	5962170	5962171
Dichlorodifluoromethane	µg/L	590	0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	0.49	0.64	0.59	0.77
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	0.33	<0.20	0.34

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Water)

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1	MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962156	5962161	5962170	5962171
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L	72	0.20	<0.20	0.33	<0.20	0.34
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		93	98	97	99
4-Bromofluorobenzene	% Recovery	50-140		83	82	87	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962156-5962171 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962161	5962170	5962171
Dissolved Antimony	µg/L	1.5	1.0	<1.0	1.1	<1.0
Dissolved Arsenic	µg/L	13	1.0	<1.0	4.9	<1.0
Dissolved Barium	µg/L	610	2.0	104	86.3	111
Dissolved Beryllium	µg/L	0.5	0.50	<0.50	<0.50	<0.50
Dissolved Boron	µg/L	1700	10.0	276	114	289
Dissolved Cadmium	µg/L	0.5	0.20	<0.20	<0.20	0.33
Dissolved Chromium	µg/L	11	2.0	<2.0	<2.0	<2.0
Dissolved Cobalt	µg/L	3.8	0.50	2.15	4.97	1.83
Dissolved Copper	µg/L	5	1.0	5.6	1.4	6.6
Dissolved Lead	µg/L	1.9	0.50	<0.50	<0.50	<0.50
Dissolved Molybdenum	µg/L	23	0.50	1.26	11.6	1.70
Dissolved Nickel	µg/L	14	1.0	5.2	4.8	4.4
Dissolved Selenium	µg/L	5	1.0	1.6	2.5	1.8
Dissolved Silver	µg/L	0.3	0.20	<0.20	<0.20	<0.20
Dissolved Thallium	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Dissolved Uranium	µg/L	8.9	0.50	0.58	0.77	0.68
Dissolved Vanadium	µg/L	3.9	0.40	<0.40	<0.40	<0.40
Dissolved Zinc	µg/L	160	5.0	67.9	<5.0	67.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962161-5962171 Metals analysis completed on a filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals (Including Hydrides) (Water) - Lab Filtered

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2024-06-25
Parameter	Unit	G / S	RDL	5962156
Dissolved Antimony	µg/L	1.5	1.0	<1.0
Dissolved Arsenic	µg/L	13	1.0	3.0
Dissolved Barium	µg/L	610	2.0	129
Dissolved Beryllium	µg/L	0.5	0.50	<0.50
Dissolved Boron	µg/L	1700	10.0	231
Dissolved Cadmium	µg/L	0.5	0.20	<0.20
Dissolved Chromium	µg/L	11	2.0	<2.0
Dissolved Cobalt	µg/L	3.8	0.50	3.52
Dissolved Copper	µg/L	5	1.0	3.7
Dissolved Lead	µg/L	1.9	0.50	<0.50
Dissolved Molybdenum	µg/L	23	0.50	5.34
Dissolved Nickel	µg/L	14	1.0	5.5
Dissolved Selenium	µg/L	5	1.0	2.2
Dissolved Silver	µg/L	0.3	0.20	<0.20
Dissolved Thallium	µg/L	0.5	0.30	<0.30
Dissolved Uranium	µg/L	8.9	0.50	2.22
Dissolved Vanadium	µg/L	3.9	0.40	0.92
Dissolved Zinc	µg/L	160	5.0	10.3
Lab Filtration Metals				1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962156 Metals analysis completed on a lab filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

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

DATE RECEIVED: 2024-06-26

DATE REPORTED: 2024-07-04

		SAMPLE DESCRIPTION:		EMW1	MW2	MW3	DUP MW2
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-06-25	2024-06-25	2024-06-25	2024-06-25
Parameter	Unit	G / S	RDL	5962156	5962161	5962170	5962171
Electrical Conductivity	uS/cm	NA	2	1440	1750	769	1770
pH	pH Units		NA	7.62	7.39	7.63	7.39

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T1 GW
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5962156-5962171 pH is a recommended field analysis taken within 15 minutes of sample collection. Due to the potential for rapid change in sample equilibrium chemistry laboratory results may differ from field measured results.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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Exceedance Summary

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5962161	MW2	ON T1 GW	O. Reg. 153(511) - Metals (Including Hydrides) (Water)	Dissolved Copper	µg/L	5	5.6
5962170	MW3	ON T1 GW	O. Reg. 153(511) - Metals (Including Hydrides) (Water)	Dissolved Cobalt	µg/L	3.8	4.97
5962171	DUP MW2	ON T1 GW	O. Reg. 153(511) - Metals (Including Hydrides) (Water)	Dissolved Copper	µg/L	5	6.6

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 24T166836
PROJECT: 8368 BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch
SAMPLED BY:E.F.

Trace Organics Analysis

RPT Date: Jul 04, 2024

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	5962246		<0.20	<0.20	NA	< 0.20	89%	50%	140%	74%	50%	140%	77%	50%	140%
Acenaphthylene	5962246		<0.20	<0.20	NA	< 0.20	92%	50%	140%	75%	50%	140%	71%	50%	140%
Acenaphthene	5962246		<0.20	<0.20	NA	< 0.20	83%	50%	140%	71%	50%	140%	70%	50%	140%
Fluorene	5962246		<0.20	<0.20	NA	< 0.20	86%	50%	140%	75%	50%	140%	72%	50%	140%
Phenanthrene	5962246		<0.10	<0.10	NA	< 0.10	85%	50%	140%	76%	50%	140%	74%	50%	140%
Anthracene	5962246		<0.10	<0.10	NA	< 0.10	72%	50%	140%	67%	50%	140%	72%	50%	140%
Fluoranthene	5962246		<0.20	<0.20	NA	< 0.20	86%	50%	140%	76%	50%	140%	77%	50%	140%
Pyrene	5962246		<0.20	<0.20	NA	< 0.20	82%	50%	140%	72%	50%	140%	73%	50%	140%
Benzo(a)anthracene	5962246		<0.20	<0.20	NA	< 0.20	75%	50%	140%	69%	50%	140%	78%	50%	140%
Chrysene	5962246		<0.10	<0.10	NA	< 0.10	96%	50%	140%	74%	50%	140%	83%	50%	140%
Benzo(b)fluoranthene	5962246		<0.10	<0.10	NA	< 0.10	72%	50%	140%	77%	50%	140%	103%	50%	140%
Benzo(k)fluoranthene	5962246		<0.10	<0.10	NA	< 0.10	83%	50%	140%	97%	50%	140%	118%	50%	140%
Benzo(a)pyrene	5962246		<0.01	<0.01	NA	< 0.01	75%	50%	140%	72%	50%	140%	103%	50%	140%
Indeno(1,2,3-cd)pyrene	5962246		<0.20	<0.20	NA	< 0.20	71%	50%	140%	81%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene	5962246		<0.20	<0.20	NA	< 0.20	74%	50%	140%	76%	50%	140%	77%	50%	140%
Benzo(g,h,i)perylene	5962246		<0.20	<0.20	NA	< 0.20	74%	50%	140%	74%	50%	140%	110%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6 to C10)	5961449		<25	<25	NA	< 25	109%	60%	140%	108%	60%	140%	88%	60%	140%
F2 (C10 to C16)	5965454		<100	<100	NA	< 100	85%	60%	140%	62%	60%	140%	62%	60%	140%
F3 (C16 to C34)	5965454		<100	<100	NA	< 100	92%	60%	140%	74%	60%	140%	72%	60%	140%
F4 (C34 to C50)	5965454		<100	<100	NA	< 100	88%	60%	140%	114%	60%	140%	104%	60%	140%
O. Reg. 153(511) - VOCs (with PHC) (Water)															
Dichlorodifluoromethane	5961449		<0.40	<0.40	NA	< 0.40	118%	50%	140%	113%	50%	140%	77%	50%	140%
Vinyl Chloride	5961449		<0.17	<0.17	NA	< 0.17	113%	50%	140%	119%	50%	140%	110%	50%	140%
Bromomethane	5961449		<0.20	<0.20	NA	< 0.20	76%	50%	140%	78%	50%	140%	85%	50%	140%
Trichlorofluoromethane	5961449		<0.40	<0.40	NA	< 0.40	112%	50%	140%	112%	50%	140%	101%	50%	140%
Acetone	5961449		<1.0	<1.0	NA	< 1.0	77%	50%	140%	92%	50%	140%	114%	50%	140%
1,1-Dichloroethylene	5961449		<0.30	<0.30	NA	< 0.30	103%	50%	140%	118%	60%	130%	93%	50%	140%
Methylene Chloride	5961449		<0.30	<0.30	NA	< 0.30	94%	50%	140%	108%	60%	130%	104%	50%	140%
trans- 1,2-Dichloroethylene	5961449		<0.20	<0.20	NA	< 0.20	109%	50%	140%	104%	60%	130%	99%	50%	140%
Methyl tert-butyl ether	5961449		<0.20	<0.20	NA	< 0.20	70%	50%	140%	73%	60%	130%	68%	50%	140%
1,1-Dichloroethane	5961449		<0.30	<0.30	NA	< 0.30	106%	50%	140%	99%	60%	130%	117%	50%	140%
Methyl Ethyl Ketone	5961449		<1.0	<1.0	NA	< 1.0	93%	50%	140%	110%	50%	140%	92%	50%	140%
cis- 1,2-Dichloroethylene	5961449		<0.20	<0.20	NA	< 0.20	107%	50%	140%	103%	60%	130%	95%	50%	140%
Chloroform	5961449		<0.20	<0.20	NA	< 0.20	109%	50%	140%	102%	60%	130%	99%	50%	140%
1,2-Dichloroethane	5961449		<0.20	<0.20	NA	< 0.20	113%	50%	140%	113%	60%	130%	113%	50%	140%
1,1,1-Trichloroethane	5961449		<0.30	<0.30	NA	< 0.30	96%	50%	140%	88%	60%	130%	85%	50%	140%
Carbon Tetrachloride	5961449		<0.20	<0.20	NA	< 0.20	107%	50%	140%	101%	60%	130%	97%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 24T166836
PROJECT: 8368 BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch
SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jul 04, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	5961449		<0.20	<0.20	NA	< 0.20	100%	50%	140%	93%	60%	130%	94%	50%	140%
1,2-Dichloropropane	5961449		<0.20	<0.20	NA	< 0.20	91%	50%	140%	85%	60%	130%	87%	50%	140%
Trichloroethylene	5961449		<0.20	<0.20	NA	< 0.20	105%	50%	140%	94%	60%	130%	85%	50%	140%
Bromodichloromethane	5961449		<0.20	<0.20	NA	< 0.20	90%	50%	140%	87%	60%	130%	86%	50%	140%
Methyl Isobutyl Ketone	5961449		<1.0	<1.0	NA	< 1.0	95%	50%	140%	81%	50%	140%	93%	50%	140%
1,1,2-Trichloroethane	5961449		<0.20	<0.20	NA	< 0.20	108%	50%	140%	103%	60%	130%	105%	50%	140%
Toluene	5961449		<0.20	<0.20	NA	< 0.20	110%	50%	140%	99%	60%	130%	95%	50%	140%
Dibromochloromethane	5961449		<0.10	<0.10	NA	< 0.10	82%	50%	140%	74%	60%	130%	79%	50%	140%
Ethylene Dibromide	5961449		<0.10	<0.10	NA	< 0.10	99%	50%	140%	80%	60%	130%	87%	50%	140%
Tetrachloroethylene	5961449		<0.20	<0.20	NA	< 0.20	115%	50%	140%	99%	60%	130%	100%	50%	140%
1,1,1,2-Tetrachloroethane	5961449		<0.10	<0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	90%	50%	140%
Chlorobenzene	5961449		<0.10	<0.10	NA	< 0.10	111%	50%	140%	94%	60%	130%	100%	50%	140%
Ethylbenzene	5961449		<0.10	<0.10	NA	< 0.10	98%	50%	140%	86%	60%	130%	85%	50%	140%
m & p-Xylene	5961449		<0.20	<0.20	NA	< 0.20	106%	50%	140%	91%	60%	130%	91%	50%	140%
Bromoform	5961449		<0.10	<0.10	NA	< 0.10	100%	50%	140%	86%	60%	130%	118%	50%	140%
Styrene	5961449		<0.10	<0.10	NA	< 0.10	100%	50%	140%	90%	60%	130%	89%	50%	140%
1,1,2,2-Tetrachloroethane	5961449		<0.10	<0.10	NA	< 0.10	107%	50%	140%	91%	60%	130%	79%	50%	140%
o-Xylene	5961449		<0.10	<0.10	NA	< 0.10	106%	50%	140%	94%	60%	130%	94%	50%	140%
1,3-Dichlorobenzene	5961449		<0.10	<0.10	NA	< 0.10	111%	50%	140%	94%	60%	130%	100%	50%	140%
1,4-Dichlorobenzene	5961449		<0.10	<0.10	NA	< 0.10	113%	50%	140%	94%	60%	130%	102%	50%	140%
1,2-Dichlorobenzene	5961449		<0.10	<0.10	NA	< 0.10	105%	50%	140%	93%	60%	130%	103%	50%	140%
n-Hexane	5961449		<0.20	<0.20	NA	< 0.20	87%	50%	140%	102%	60%	130%	103%	50%	140%

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

Certified By:

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch
ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch
SAMPLED BY:E.F.

Water Analysis

RPT Date: Jul 04, 2024

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Dissolved Antimony	5961434		1.6	1.5	NA	< 1.0	101%	70%	130%	104%	80%	120%	109%	70%	130%
Dissolved Arsenic	5961434		2.3	1.4	NA	< 1.0	97%	70%	130%	95%	80%	120%	112%	70%	130%
Dissolved Barium	5961434		77.8	74.1	5.0%	< 2.0	98%	70%	130%	95%	80%	120%	101%	70%	130%
Dissolved Beryllium	5961434		<0.50	<0.50	NA	< 0.50	96%	70%	130%	102%	80%	120%	103%	70%	130%
Dissolved Boron	5961434		68.1	61.1	10.9%	< 10.0	102%	70%	130%	101%	80%	120%	98%	70%	130%
Dissolved Cadmium	5961434		<0.20	<0.20	NA	< 0.20	100%	70%	130%	102%	80%	120%	105%	70%	130%
Dissolved Chromium	5961434		<2.0	<2.0	NA	< 2.0	101%	70%	130%	99%	80%	120%	106%	70%	130%
Dissolved Cobalt	5961434		0.71	0.98	NA	< 0.50	106%	70%	130%	98%	80%	120%	110%	70%	130%
Dissolved Copper	5961434		1.0	<1.0	NA	< 1.0	100%	70%	130%	100%	80%	120%	112%	70%	130%
Dissolved Lead	5961434		<0.50	<0.50	NA	< 0.50	99%	70%	130%	103%	80%	120%	104%	70%	130%
Dissolved Molybdenum	5961434		5.86	6.84	15.5%	< 0.50	107%	70%	130%	119%	80%	120%	119%	70%	130%
Dissolved Nickel	5961434		6.7	4.2	47.3%	< 1.0	104%	70%	130%	100%	80%	120%	107%	70%	130%
Dissolved Selenium	5961434		1.5	<1.0	NA	< 1.0	97%	70%	130%	99%	80%	120%	101%	70%	130%
Dissolved Silver	5961434		<0.20	<0.20	NA	< 0.20	119%	70%	130%	115%	80%	120%	118%	70%	130%
Dissolved Thallium	5961434		<0.30	<0.30	NA	< 0.30	95%	70%	130%	103%	80%	120%	103%	70%	130%
Dissolved Uranium	5961434		<0.50	<0.50	NA	< 0.50	101%	70%	130%	104%	80%	120%	110%	70%	130%
Dissolved Vanadium	5961434		6.44	6.21	3.7%	< 0.40	102%	70%	130%	103%	80%	120%	109%	70%	130%
Dissolved Zinc	5961434		117	115	1.7%	< 5.0	98%	70%	130%	113%	80%	120%	115%	70%	130%

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

O. Reg. 153(511) - ORPs (Water)									
Electrical Conductivity	5962847	1100	925	17.6%	< 2	98%	90%	110%	
pH	5962847	7.68	7.75	0.9%	NA	99%	90%	110%	

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

O. Reg. 153(511) - ORPs (Water)									
Electrical Conductivity	5962171	5962171	1770	1900	7.2%	< 2	107%	90%	110%
pH	5962171	5962171	7.39	7.41	0.3%	NA	99%	90%	110%

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

Certified By:

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Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluorene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
2-and 1-methyl Napthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Sediment			N/A
F1 (C6 to C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 24T166836

PROJECT: 8368 BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Lab Filtration Metals	SR-78-9001		FILTRATION
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Chain of Custody Record

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

Laboratory Use Only
Work Order #: 24T166836
Cooler Quantity: 1 lg
Arrival Temperatures: 4.9 | 5.1 | 4.3
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: F/I

Report Information:
Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

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

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

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply): _____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 8368 BVD Puslinch
Site Location: 7504 McLean Rd., Puslinch
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
EMW1	6/25/24		7	GW	limited volume	N
MW2	6/25/24		12	GW		Y
MW3	6/25/24		12	GW		Y
DUP MW2	6/25/24		12	GW		Y

Field Filtered - Metals, Hg, CrVI

O. Reg 153
- Metals and Inorganics
- ☐ All Metals ☐ 153 Metals (excl. Hydrides)
- ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)
- **ORPs:** ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☑ EC ☐ FOC ☐ Hg ☑ pH ☐ SAR
- Full Metals Scan
- Regulation/Custom Metals
- **Nutrients:** ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2
- **Volatiles:** ☐ VOC ☐ BTEX ☐ THM
- PHCs F1 - F4
- ABNs
- PAHs
- PCBs: ☐ Total ☐ Aroclors
- Organochlorine Pesticides
- TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs
- Sewer Use
- Metals Soil 93-101
- Metals Water 93-196
- CCME F1-F4/VOCs Soil 91-248
- CCME F1-F4/VOCs Water 91-249
- CCME F1-F4/ BTEX Water 91-315
- Sieve & texture (75 Micron)

EMW1					☑											☑					☑		☑										
MW2					☑											☑					☑		☑										
MW3					☑											☑					☑		☑										
DUP MW2					☑											☑					☑		☑										

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
E. Fulsom [redacted]	6/25/24	3pm	[redacted]	26.6.24	1:40pm
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1
N°:

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680
ATTENTION TO: Ali Rasoul
PROJECT: 8368-BVD Puslinch
AGAT WORK ORDER: 25T238982
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Jan 23, 2025
PAGES (INCLUDING COVER): 29
VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459609	6459610	6459611	6459612	6459613	6459614	6459615	6459616
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	4	5	6	6	4	4	4
Barium	µg/g	220	2.0	17.8	16.2	17.8	21.4	21.5	21.4	23.9	20.3
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	6	9	9	8	10	9	9	8
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.20	0.11	<0.10	0.22	0.25	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	0.5
Chromium	µg/g	70	5	8	11	8	10	9	9	8	7
Cobalt	µg/g	21	0.8	3.4	4.9	4.5	4.8	5.4	4.1	4.1	3.5
Copper	µg/g	92	1.0	10.5	12.4	25.5	24.5	17.6	14.2	13.4	12.9
Lead	µg/g	120	1	13	11	25	20	28	22	26	25
Molybdenum	µg/g	2	0.5	0.8	<0.5	0.6	<0.5	0.6	0.7	0.5	<0.5
Nickel	µg/g	82	1	5	8	7	8	9	6	6	5
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	0.53	0.50	<0.50	0.54	<0.50	0.50	1.47
Vanadium	µg/g	86	2.0	19.0	20.3	16.2	18.8	17.7	16.4	16.3	15.6
Zinc	µg/g	290	5	94	87	678	187	302	215	249	264
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.144	0.166	0.147	0.191	0.123	0.345	0.121	0.126
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.725	0.708	1.59	1.71	1.45	0.554	0.859	0.279
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.70	7.66	7.64	7.63	7.61	10.3	7.53	8.20

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10	BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459617	6459618	6459619	6459620	6459621	6459622	6459623	6459624
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	6	4	4	4	4	5	6
Barium	µg/g	220	2.0	22.8	30.3	20.5	19.2	19.4	19.3	28.2	109
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8
Boron	µg/g	36	5	9	11	8	7	9	9	14	18
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.17	<0.10	<0.10	0.15	<0.10	0.78	1.29
Cadmium	µg/g	1.2	0.5	0.6	<0.5	0.7	0.7	<0.5	0.6	<0.5	<0.5
Chromium	µg/g	70	5	8	14	8	8	8	8	16	24
Cobalt	µg/g	21	0.8	3.8	6.4	3.9	4.3	4.3	4.1	7.6	12.3
Copper	µg/g	92	1.0	13.4	18.6	14.1	14.9	15.2	14.9	20.4	24.2
Lead	µg/g	120	1	22	21	26	30	27	27	18	13
Molybdenum	µg/g	2	0.5	<0.5	1.0	<0.5	<0.5	0.5	<0.5	0.8	0.9
Nickel	µg/g	82	1	5	12	6	7	7	6	15	25
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	0.57	0.54	0.52	<0.50	0.50	0.58	0.65
Vanadium	µg/g	86	2.0	16.3	26.5	15.5	15.8	15.9	16.7	28.7	31.3
Zinc	µg/g	290	5	304	166	308	360	202	258	150	74
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.085	0.211	0.106	0.145	0.105	0.135	0.158	0.836
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.206	0.691	1.29	1.23	0.503	0.612	0.747	2.11
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.59	7.86	7.62	7.79	7.31	6.23	7.28	7.44

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459625	6459626	6459627
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	4	4
Barium	µg/g	220	2.0	25.1	48.0	36.2
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	9	14	11
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.13	0.23	0.26
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	5	10	13	11
Cobalt	µg/g	21	0.8	4.5	6.3	4.6
Copper	µg/g	92	1.0	17.7	18.5	15.7
Lead	µg/g	120	1	28	23	29
Molybdenum	µg/g	2	0.5	<0.5	0.7	0.6
Nickel	µg/g	82	1	10	14	10
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	0.52	0.52
Vanadium	µg/g	86	2.0	17.6	21.8	17.1
Zinc	µg/g	290	5	196	159	217
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.157	0.178	0.152
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	1.05	0.359	0.487
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.41	7.45	7.48

Certified By:

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6459609-6459627 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

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

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459609	6459610	6459611	6459612	6459613	6459614	6459615	6459616
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.4	7.4	9.8	8.0	8.5	9.2	8.6	8.0
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		70	70	65	70	65	70	65	80
Acridine-d9	%	50-140		60	110	85	115	85	85	105	75
Terphenyl-d14	%	50-140		70	75	80	75	65	75	70	80

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

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

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10	BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459617	6459618	6459619	6459620	6459621	6459622	6459623	6459624
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	8.0	9.8	8.0	8.0	9.2	9.2	8.2	9.6
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		70	65	65	70	70	75	80	65
Acridine-d9	%	50-140		100	105	85	95	75	65	115	95
Terphenyl-d14	%	50-140		70	65	70	80	75	85	80	75

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

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

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5
SAMPLE TYPE:				Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459625	6459626	6459627
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	6.6	11.1	7.9
Surrogate	Unit	Acceptable Limits				
Naphthalene-d8	%	50-140		85	65	70
Acridine-d9	%	50-140		105	100	100
Terphenyl-d14	%	50-140		95	85	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6459609-6459627 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459609	6459610	6459611	6459612	6459613	6459614	6459615	6459616
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	9.4	7.4	9.8	8.0	8.5	9.2	8.6	8.0
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		96	100	91	96	93	92	94	98
Terphenyl	%	60-140		98	100	87	78	98	80	81	95

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10	BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459617	6459618	6459619	6459620	6459621	6459622	6459623	6459624
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	8.0	9.8	8.0	8.0	9.2	9.2	8.2	9.6
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		95	94	92	98	93	96	95	98
Terphenyl	%	60-140		74	99	76	86	83	84	83	96

Certified By:

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AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

				SAMPLE DESCRIPTION:	BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5
				SAMPLE TYPE:	Soil	Soil	Soil
				DATE SAMPLED:	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL		6459625	6459626	6459627
F1 (C6 to C10)	µg/g		5		<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5		<5	<5	<5
F2 (C10 to C16)	µg/g	10	10		<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10		<10	<10	<10
F3 (C16 to C34)	µg/g	240	50		<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50		<50	<50	<50
F4 (C34 to C50)	µg/g	120	50		<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50		NA	NA	NA
Moisture Content	%		0.1		6.6	11.1	7.9
Surrogate	Unit	Acceptable Limits					
Toluene-d8	%	50-140			95	94	97
Terphenyl	%	60-140			89	75	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6459609-6459627 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459609	6459610	6459611	6459612	6459613	6459614	6459615	6459616
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-1@0-2.5	BH25-2@0-5	BH25-3@5-7.5	BH25-4@2.5-5	BH25-5@5-10	BH25-6@5-7.5	BH25-7@5-7.5	BH25-8@7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459609	6459610	6459611	6459612	6459613	6459614	6459615	6459616
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.4	7.4	9.8	8.0	8.5	9.2	8.6	8.0
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		96	100	91	96	93	92	94	98
4-Bromofluorobenzene	% Recovery	50-140		100	98	94	92	90	96	92	92

Certified By: [redacted]

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AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10	BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459617	6459618	6459619	6459620	6459621	6459622	6459623	6459624
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

SAMPLE DESCRIPTION:				DUP 8	BH25-9@5-7.5	BH25-10@7.5-10	DUP 10	BH25-11@5-7.5	DUP 11	BH25-12@5-7.5	BH25-13@2.5-5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459617	6459618	6459619	6459620	6459621	6459622	6459623	6459624
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	8.0	9.8	8.0	8.0	9.2	9.2	8.2	9.6
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		95	94	92	98	93	96	95	98
4-Bromofluorobenzene	% Recovery	50-140		96	93	94	92	97	92	94	90

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AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459625	6459626	6459627
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-23

		SAMPLE DESCRIPTION:		BH25-14@5-7.5	BH25-15@2.5-5	BH25-16@5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6459625	6459626	6459627
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	6.6	11.1	7.9
Surrogate	Unit	Acceptable Limits				
Toluene-d8	% Recovery	50-140		95	94	97
4-Bromofluorobenzene	% Recovery	50-140		92	91	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6459609-6459627 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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Exceedance Summary

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
6459611	BH25-3@5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	678
6459613	BH25-5@5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	302
6459617	DUP 8	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	304
6459619	BH25-10@7.5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	308
6459620	DUP 10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	360
6459624	BH25-13@2.5-5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.836

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T238982
PROJECT: 8368-BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:Puslinch
SAMPLED BY:EF

Soil Analysis

RPT Date: Jan 23, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	6459609	6459609	<0.8	<0.8	NA	< 0.8	99%	70%	130%	74%	80%	120%	76%	70%	130%
Arsenic	6459609	6459609	3	3	NA	< 1	127%	70%	130%	94%	80%	120%	110%	70%	130%
Barium	6459609	6459609	17.8	17.7	0.6%	< 2.0	104%	70%	130%	94%	80%	120%	103%	70%	130%
Beryllium	6459609	6459609	<0.5	<0.5	NA	< 0.5	108%	70%	130%	104%	80%	120%	124%	70%	130%
Boron	6459609	6459609	6	7	NA	< 5	92%	70%	130%	94%	80%	120%	106%	70%	130%
Boron (Hot Water Soluble)	6459609	6459609	<0.10	<0.10	NA	< 0.10	97%	60%	140%	101%	70%	130%	95%	60%	140%
Cadmium	6459609	6459609	<0.5	<0.5	NA	< 0.5	98%	70%	130%	96%	80%	120%	101%	70%	130%
Chromium	6459609	6459609	8	10	NA	< 5	112%	70%	130%	83%	80%	120%	90%	70%	130%
Cobalt	6459609	6459609	3.4	3.6	NA	< 0.8	100%	70%	130%	86%	80%	120%	95%	70%	130%
Copper	6459609	6459609	10.5	11.4	8.2%	< 1.0	99%	70%	130%	84%	80%	120%	81%	70%	130%
Lead	6459609	6459609	13	13	0.0%	< 1	114%	70%	130%	89%	80%	120%	87%	70%	130%
Molybdenum	6459609	6459609	0.8	1.0	NA	< 0.5	117%	70%	130%	91%	80%	120%	107%	70%	130%
Nickel	6459609	6459609	5	5	0.0%	< 1	111%	70%	130%	93%	80%	120%	100%	70%	130%
Selenium	6459609	6459609	<0.8	<0.8	NA	< 0.8	70%	70%	130%	95%	80%	120%	103%	70%	130%
Silver	6459609	6459609	<0.5	<0.5	NA	< 0.5	94%	70%	130%	90%	80%	120%	92%	70%	130%
Thallium	6459609	6459609	<0.5	<0.5	NA	< 0.5	102%	70%	130%	111%	80%	120%	119%	70%	130%
Uranium	6459609	6459609	<0.50	0.52	NA	< 0.50	110%	70%	130%	93%	80%	120%	104%	70%	130%
Vanadium	6459609	6459609	19.0	20.6	8.1%	< 2.0	128%	70%	130%	86%	80%	120%	103%	70%	130%
Zinc	6459609	6459609	94	95	1.1%	< 5	123%	70%	130%	101%	80%	120%	NA	70%	130%
Chromium, Hexavalent	6459619	6459619	<0.2	<0.2	NA	< 0.2	107%	70%	130%	86%	80%	120%	82%	70%	130%
Cyanide, WAD	6452455	6459627	<0.040	<0.040	NA	< 0.040	99%	70%	130%	90%	80%	120%	104%	70%	130%
Mercury	6459609	6459609	<0.10	<0.10	NA	< 0.10	100%	70%	130%	90%	80%	120%	102%	70%	130%
Electrical Conductivity (2:1)	6459609	6459609	0.144	0.125	14.1%	< 0.005	105%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6459609	6459609	0.725	0.651	10.8%	NA									
pH, 2:1 CaCl2 Extraction	6459378		7.48	7.64	2.1%	NA	103%	80%	120%						

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

Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

O. Reg. 153(511) - Metals & Inorganics (Soil)									
Electrical Conductivity (2:1)	6459627	6459627	0.152	0.176	14.4%	< 0.005	102%	80%	120%
pH, 2:1 CaCl2 Extraction	6459625	6459625	7.41	7.57	2.2%	NA	103%	80%	120%

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

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

Soil Analysis (Continued)

RPT Date: Jan 23, 2025			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Certified By:

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Quality Assurance

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AGAT WORK ORDER: 25T238982
PROJECT: 8368-BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:Puslinch
SAMPLED BY:EF

Trace Organics Analysis

RPT Date: Jan 23, 2025

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 to C10)	6459627	6459627	<5	<5	NA	< 5	133%	60%	140%	104%	60%	140%	92%	60%	140%
F2 (C10 to C16)	6459609	6459609	< 10	< 10	NA	< 10	119%	60%	140%	96%	60%	140%	108%	60%	140%
F3 (C16 to C34)	6459609	6459609	< 50	< 50	NA	< 50	119%	60%	140%	104%	60%	140%	121%	60%	140%
F4 (C34 to C50)	6459609	6459609	< 50	< 50	NA	< 50	77%	60%	140%	105%	60%	140%	64%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6459616	6459616	<0.05	<0.05	NA	< 0.05	107%	50%	140%	80%	50%	140%	78%	50%	140%
Acenaphthylene	6459616	6459616	<0.05	<0.05	NA	< 0.05	106%	50%	140%	83%	50%	140%	90%	50%	140%
Acenaphthene	6459616	6459616	<0.05	<0.05	NA	< 0.05	102%	50%	140%	80%	50%	140%	93%	50%	140%
Fluorene	6459616	6459616	<0.05	<0.05	NA	< 0.05	103%	50%	140%	80%	50%	140%	90%	50%	140%
Phenanthrene	6459616	6459616	<0.05	<0.05	NA	< 0.05	109%	50%	140%	78%	50%	140%	100%	50%	140%
Anthracene	6459616	6459616	<0.05	<0.05	NA	< 0.05	104%	50%	140%	73%	50%	140%	85%	50%	140%
Fluoranthene	6459616	6459616	<0.05	<0.05	NA	< 0.05	105%	50%	140%	85%	50%	140%	83%	50%	140%
Pyrene	6459616	6459616	<0.05	<0.05	NA	< 0.05	105%	50%	140%	80%	50%	140%	83%	50%	140%
Benzo(a)anthracene	6459616	6459616	<0.05	<0.05	NA	< 0.05	90%	50%	140%	83%	50%	140%	98%	50%	140%
Chrysene	6459616	6459616	<0.05	<0.05	NA	< 0.05	122%	50%	140%	78%	50%	140%	85%	50%	140%
Benzo(b)fluoranthene	6459616	6459616	<0.05	<0.05	NA	< 0.05	91%	50%	140%	95%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	6459616	6459616	<0.05	<0.05	NA	< 0.05	100%	50%	140%	90%	50%	140%	90%	50%	140%
Benzo(a)pyrene	6459616	6459616	<0.05	<0.05	NA	< 0.05	89%	50%	140%	98%	50%	140%	90%	50%	140%
Indeno(1,2,3-cd)pyrene	6459616	6459616	<0.05	<0.05	NA	< 0.05	88%	50%	140%	85%	50%	140%	90%	50%	140%
Dibenz(a,h)anthracene	6459616	6459616	<0.05	<0.05	NA	< 0.05	81%	50%	140%	90%	50%	140%	75%	50%	140%
Benzo(g,h,i)perylene	6459616	6459616	<0.05	<0.05	NA	< 0.05	107%	50%	140%	93%	50%	140%	93%	50%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	70%	50%	140%	83%	50%	140%	74%	50%	140%
Vinyl Chloride	6459627	6459627	<0.02	<0.02	NA	< 0.02	107%	50%	140%	109%	50%	140%	107%	50%	140%
Bromomethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	93%	50%	140%	99%	50%	140%	109%	50%	140%
Trichlorofluoromethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	82%	50%	140%	80%	50%	140%	99%	50%	140%
Acetone	6459627	6459627	<0.50	<0.50	NA	< 0.50	95%	50%	140%	94%	50%	140%	106%	50%	140%
1,1-Dichloroethylene	6459627		<0.05	<0.05	NA	< 0.05	96%	50%	140%	95%	60%	130%	107%	50%	140%
Methylene Chloride	6459627	6459627	<0.05	<0.05	NA	< 0.05	92%	50%	140%	96%	60%	130%	102%	50%	140%
Trans- 1,2-Dichloroethylene	6459627	6459627	<0.05	<0.05	NA	< 0.05	67%	50%	140%	92%	60%	130%	96%	50%	140%
Methyl tert-butyl Ether	6459627	6459627	<0.05	<0.05	NA	< 0.05	68%	50%	140%	74%	60%	130%	102%	50%	140%
1,1-Dichloroethane	6459627	6459627	<0.02	<0.02	NA	< 0.02	73%	50%	140%	78%	60%	130%	78%	50%	140%
Methyl Ethyl Ketone	6459627	6459627	<0.50	<0.50	NA	< 0.50	99%	50%	140%	133%	50%	140%	103%	50%	140%
Cis- 1,2-Dichloroethylene	6459627	6459627	<0.02	<0.02	NA	< 0.02	110%	50%	140%	97%	60%	130%	102%	50%	140%
Chloroform	6459627	6459627	<0.04	<0.04	NA	< 0.04	91%	50%	140%	77%	60%	130%	99%	50%	140%
1,2-Dichloroethane	6459627	6459627	<0.03	<0.03	NA	< 0.03	137%	50%	140%	108%	60%	130%	95%	50%	140%
1,1,1-Trichloroethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	98%	50%	140%	98%	60%	130%	99%	50%	140%
Carbon Tetrachloride	6459627	6459627	<0.05	<0.05	NA	< 0.05	92%	50%	140%	100%	60%	130%	98%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T238982
PROJECT: 8368-BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:Puslinch
SAMPLED BY:EF

Trace Organics Analysis (Continued)

RPT Date: Jan 23, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	6459627	6459627	<0.02	<0.02	NA	< 0.02	91%	50%	140%	98%	60%	130%	96%	50%	140%
1,2-Dichloropropane	6459627	6459627	<0.03	<0.03	NA	< 0.03	111%	50%	140%	93%	60%	130%	67%	50%	140%
Trichloroethylene	6459627	6459627	<0.03	<0.03	NA	< 0.03	101%	50%	140%	103%	60%	130%	95%	50%	140%
Bromodichloromethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	103%	50%	140%	87%	60%	130%	71%	50%	140%
Methyl Isobutyl Ketone	6459627	6459627	<0.50	<0.50	NA	< 0.50	99%	50%	140%	91%	50%	140%	102%	50%	140%
1,1,2-Trichloroethane	6459627	6459627	<0.04	<0.04	NA	< 0.04	90%	50%	140%	106%	60%	130%	80%	50%	140%
Toluene	6459627	6459627	<0.05	<0.05	NA	< 0.05	68%	50%	140%	92%	60%	130%	93%	50%	140%
Dibromochloromethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	96%	50%	140%	101%	60%	130%	121%	50%	140%
Ethylene Dibromide	6459627	6459627	<0.04	<0.04	NA	< 0.04	83%	50%	140%	91%	60%	130%	82%	50%	140%
Tetrachloroethylene	6459627		<0.05	<0.05	NA	< 0.05	83%	50%	140%	92%	60%	130%	81%	50%	140%
1,1,1,2-Tetrachloroethane	6459627	6459627	<0.04	<0.04	NA	< 0.04	85%	50%	140%	96%	60%	130%	61%	50%	140%
Chlorobenzene	6459627	6459627	<0.05	<0.05	NA	< 0.05	85%	50%	140%	93%	60%	130%	92%	50%	140%
Ethylbenzene	6459627	6459627	<0.05	<0.05	NA	< 0.05	64%	50%	140%	83%	60%	130%	61%	50%	140%
m & p-Xylene	6459627	6459627	<0.05	<0.05	NA	< 0.05	77%	50%	140%	93%	60%	130%	80%	50%	140%
Bromoform	6459627	6459627	<0.05	<0.05	NA	< 0.05	87%	50%	140%	96%	60%	130%	69%	50%	140%
Styrene	6459627	6459627	<0.05	<0.05	NA	< 0.05	82%	50%	140%	95%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	6459627	6459627	<0.05	<0.05	NA	< 0.05	84%	50%	140%	84%	60%	130%	74%	50%	140%
o-Xylene	6459627	6459627	<0.05	<0.05	NA	< 0.05	83%	50%	140%	95%	60%	130%	83%	50%	140%
1,3-Dichlorobenzene	6459627	6459627	<0.05	<0.05	NA	< 0.05	89%	50%	140%	91%	60%	130%	86%	50%	140%
1,4-Dichlorobenzene	6459627	6459627	<0.05	<0.05	NA	< 0.05	94%	50%	140%	92%	60%	130%	89%	50%	140%
1,2-Dichlorobenzene	6459627	6459627	<0.05	<0.05	NA	< 0.05	99%	50%	140%	91%	60%	130%	83%	50%	140%
n-Hexane	6459627	6459627	<0.05	<0.05	NA	< 0.05	67%	50%	140%	96%	60%	130%	83%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F2 (C10 to C16)	6462090		71	74	4.1%	< 10	116%	60%	140%	61%	60%	140%	109%	60%	140%
F3 (C16 to C34)	6462090		< 50	< 50	NA	< 50	114%	60%	140%	65%	60%	140%	72%	60%	140%
F4 (C34 to C50)	6462090		< 50	< 50	NA	< 50	96%	60%	140%	72%	60%	140%	69%	60%	140%

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

Certified By:

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

ATTENTION TO: Ali Rasoul

RPT Date: Jan 23, 2025

PARAMETER	Sample Id	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)										
Antimony	6459609	99%	70%	130%	74%	80%	120%	76%	70%	130%

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

Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

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AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T238982

PROJECT: 8368-BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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PROJECT: 8368-BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch

SAMPLED BY:EF

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 25T238982

Cooler Quantity: 1 lg

Arrival Temperatures: 3.2 | 3.1 | 3.0

Custody Seal Intact: ☐ Yes ☐ No ☑ N/A

Notes: LIT

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

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

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

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

Project Information:

Project: 8368-BVD Puslinch
Site Location: Puslinch
Sampled By: EF
AGAT Quote #: 16288129079 PO: 8368-BVD Puslinch
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr^{6+} ☑ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Mettals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
BH25-1@0-2.5	Jan 15		3	S			☑							☑						☑				
BH25-2@0-5	Jan 15		3	S			☑							☑						☑				
BH25-3@5-7.5	Jan 15		3	S			☑							☑						☑				
BH25-4@2.5-5	Jan 15		3	S			☑							☑						☑				
BH25-5@5-10	Jan 15		3	S			☑							☑						☑				
BH25-6@5-7.5	Jan 15		3	S			☑							☑						☑				
BH25-7@5-7.5	Jan 15		3	S			☑							☑						☑				
BH25-8@7.5-10	Jan 15		3	S			☑							☑						☑				
DUP 8	Jan 15		3	S			☑							☑						☑				
BH25-9@5-7.5	Jan 15		3	S	**please adjust soil texture		☑							☑						☑				
BH25-10@7.5-10	Jan 15		3	S	to results of sieve analysis		☑							☑						☑				

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
S. Scott [redacted]	Jan 15		[redacted]	Jan 15	3:12

Page 1 of 2

N°:

Document ID: DW78-1511-015

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Date Issued: March 16, 2015

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 25T238982

Cooler Quantity: 1 | 9

Arrival Temperatures: 5 | 4 | 5 | 1

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aacnvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

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

☐ Sewer Use
☐ Sanitary ☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

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

Project Information:

Project: 8368-BVD Puslinch
Site Location: Puslinch
Sampled By: EF
AGAT Quote #: 16288129079 PO: 8368-BVD Puslinch
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr⁶⁺ ☑ EC ☐ FOC ☐ Hg ☑ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
DUP 10	Jan 15		3	S			☑								☑					☑						
BH25-11@5-7.5	Jan 15		3	S			☑								☑					☑						
DUP 11	Jan 15		3	S			☑								☑					☑						
BH25-12@5-7.5	Jan 15		3	S			☑								☑					☑						
BH25-13@2.5-5	Jan 15		3	S			☑								☑					☑						
BH25-14@5-7.5	Jan 15		3	S			☑								☑					☑						
BH25-15@2.5-5	Jan 15		3	S			☑								☑					☑						
BH25-16@5-7.5	Jan 15		4	S			☑								☑					☑						
					**please adjust soil texture																					
					to results of sieve analysis																					

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
S. Scott [redacted]	Jan 15		[redacted]	Jan 15	3:12p
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 2 of 2

N°:

Document ID: DW-78-1511.015

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Date Issued: March 26, 2018

AGAT Laboratories

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

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680

ATTENTION TO: Ali Rasoul

PROJECT: 8368 BVD Puslinch Delineation

AGAT WORK ORDER: 25T239421

SOIL ANALYSIS REVIEWED BY: Chuandi Zhang, Inorganic Supervisor

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Jan 27, 2025

PAGES (INCLUDING COVER): 22

VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Certificate of Analysis

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

SAMPLE DESCRIPTION:				BH25-17 @ 0-2.5	BH25-18 @ 7. 5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5	BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7. 5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461794	6461795	6461796	6461797	6461798	6461799	6461800	6461801
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	9	4	5	9	3	3	3	4
Barium	µg/g	220	2.0	75.3	21.8	20.6	56.8	22.4	20.1	17.8	19.8
Beryllium	µg/g	2.5	0.5	0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	15	9	8	17	9	7	8	9
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.46	<0.10	<0.10	0.73	0.59	0.46	0.32	0.13
Cadmium	µg/g	1.2	0.5	0.5	0.8	0.7	<0.5	<0.5	<0.5	<0.5	0.5
Chromium	µg/g	70	5	15	8	7	24	11	8	8	8
Cobalt	µg/g	21	0.8	9.0	3.9	3.9	14.4	4.7	3.4	3.3	4.3
Copper	µg/g	92	1.0	48.8	16.5	16.8	39.8	12.8	14.5	14.7	15.9
Lead	µg/g	120	1	72	29	27	13	15	52	25	26
Molybdenum	µg/g	2	0.5	1.3	<0.5	<0.5	0.7	0.6	0.9	0.7	<0.5
Nickel	µg/g	82	1	16	7	7	30	10	7	6	8
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	<0.50	<0.50	0.60	<0.50	<0.50	<0.50	<0.50
Vanadium	µg/g	86	2.0	22.3	13.8	12.6	29.7	16.7	17.5	15.1	13.0
Zinc	µg/g	290	5	232	264	253	88	108	137	144	217
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.203	0.213	0.145	0.802	0.137	0.217	0.197	0.162
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.328	0.412	0.394	1.13	0.802	0.495	0.562	1.87
pH, 2:1 CaCl2 Extraction	pH Units		NA	8.10	7.44	7.15	7.30	7.10	7.00	6.95	6.87

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: DUP 25-22 SAMPLE TYPE: Soil DATE SAMPLED: 2025-01-15 6461802	BH25-23 @ 5-7.5 Soil 2025-01-15 6461803	BH25-24 @ 2. 5-7.5 Soil 2025-01-15 6461804
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	7
Barium	µg/g	220	2.0	20.7	20.5	46.7
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	0.7
Boron	µg/g	36	5	9	9	9
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.15	0.16
Cadmium	µg/g	1.2	0.5	0.7	0.7	<0.5
Chromium	µg/g	70	5	9	8	17
Cobalt	µg/g	21	0.8	4.8	3.7	7.6
Copper	µg/g	92	1.0	20.6	16.7	25.4
Lead	µg/g	120	1	25	23	40
Molybdenum	µg/g	2	0.5	<0.5	<0.5	0.7
Nickel	µg/g	82	1	8	7	17
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	<0.50	0.56
Vanadium	µg/g	86	2.0	14.0	12.6	27.4
Zinc	µg/g	290	5	258	393	279
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.146	0.156	0.187
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	1.04	0.630	0.540
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.85	6.88	7.00

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6461794-6461804 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

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ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

SAMPLE DESCRIPTION:				BH25-17 @ 0-2.5	BH25-18 @ 7. 5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5	BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7. 5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461794	6461795	6461796	6461797	6461798	6461799	6461800	6461801
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	0.24	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	0.08	<0.05
Fluoranthene	µg/g	0.56	0.05	0.07	<0.05	<0.05	<0.05	<0.05	0.37	0.35	<0.05
Pyrene	µg/g	1	0.05	0.06	<0.05	<0.05	<0.05	<0.05	0.27	0.25	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.10	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.13	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.20	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.08	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.13	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.08	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.13	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	11.3	8.6	8.2	7.8	8.1	8.1	6.0	10.4
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		65	65	55	70	60	70		55
Naphthalene-d8		50-140								77	
Acridine-d9	%	50-140		115	115	105	100	85	90	114	85
Terphenyl-d14	%	50-140		125	105	120	100	105	85	75	105

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

		SAMPLE DESCRIPTION:		DUP 25-22	BH25-23 @ 5-7.5	BH25-24 @ 2. 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461802	6461803	6461804
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	0.10	<0.05
Pyrene	µg/g	1	0.05	<0.05	0.08	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	7.0	8.9	15.4
Surrogate	Unit	Acceptable Limits				
Naphthalene-d8	%	50-140		63	61	70
Acridine-d9	%	50-140		61	94	110
Terphenyl-d14	%	50-140		67	99	65

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6461794-6461804 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

				BH25-17 @	BH25-18 @ 7.			BH25-20 @			BH25-22 @ 7.
SAMPLE DESCRIPTION:				0-2.5	5-10	DUP 25-18	BH25-19 @2.5-5	5-7.5	BH25-21 @ 5-10	DUP 25-21	5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461794	6461795	6461796	6461797	6461798	6461799	6461800	6461801
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	235	194	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	234	193	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	74	439	397	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	11.3	8.6	8.2	7.8	8.1	8.1	6.0	10.4
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		102	100	97	99	91	93	97	97
Terphenyl	%	60-140		92	88	99	80	98	99	120	130

Certified By: [redacted]

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AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: DUP 25-22 / SAMPLE TYPE: Soil / DATE SAMPLED: 2025-01-15	BH25-23 @ 5-7.5 / Soil / 2025-01-15	BH25-24 @ 2. 5-7.5 / Soil / 2025-01-15
				6461802	6461803	6461804
F1 (C6 to C10)	µg/g		5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA
Moisture Content	%		0.1	7.0	8.9	15.4
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	%	50-140		96	101	96
Terphenyl	%	60-140		110	94	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6461794-6461804 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

SAMPLE DESCRIPTION:				BH25-17 @ 0-2.5	BH25-18 @ 7. 5-10	DUP 25-18	BH25-19 @2.5-5	BH25-20 @ 5-7.5	BH25-21 @ 5-10	DUP 25-21	BH25-22 @ 7. 5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461794	6461795	6461796	6461797	6461798	6461799	6461800	6461801
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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AGAT WORK ORDER: 25T239421

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

				BH25-17 @	BH25-18 @ 7.			BH25-20 @			BH25-22 @ 7.
SAMPLE DESCRIPTION:				0-2.5	5-10	DUP 25-18	BH25-19 @2.5-5	5-7.5	BH25-21 @ 5-10	DUP 25-21	5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6461794	6461795	6461796	6461797	6461798	6461799	6461800	6461801
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	11.3	8.6	8.2	7.8	8.1	8.1	6.0	10.4
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		102	100	97	99	91	93	97	97
4-Bromofluorobenzene	% Recovery	50-140		80	73	75	74	74	71	74	73

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O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: DUP 25-22 SAMPLE TYPE: Soil DATE SAMPLED: 2025-01-15 6461802	BH25-23 @ 5-7.5 Soil 2025-01-15 6461803	BH25-24 @ 2. 5-7.5 Soil 2025-01-15 6461804
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-16

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: DUP 25-22 SAMPLE TYPE: Soil DATE SAMPLED: 2025-01-15 6461802	BH25-23 @ 5-7.5 Soil 2025-01-15 6461803	BH25-24 @ 2. 5-7.5 Soil 2025-01-15 6461804
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	7.0	8.9	15.4
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		96	101	96
4-Bromofluorobenzene	% Recovery	50-140		74	73	74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6461794-6461804 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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Exceedance Summary

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
6461797	BH25-19 @2.5-5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.802
6461799	BH25-21 @ 5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)	F4 (C34 to C50)	µg/g	120	439
6461800	DUP 25-21	ON 406/19 T1 RPIC	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)	F4 (C34 to C50)	µg/g	120	397
6461803	BH25-23 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	393

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

Soil Analysis

RPT Date: Jan 27, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	6461767		<0.8	<0.8	NA	< 0.8	101%	70%	130%	96%	80%	120%	78%	70%	130%
Arsenic	6461767		5	5	0.0%	< 1	127%	70%	130%	93%	80%	120%	113%	70%	130%
Barium	6461767		50.3	49.2	2.2%	< 2.0	109%	70%	130%	100%	80%	120%	117%	70%	130%
Beryllium	6461767		<0.5	<0.5	NA	< 0.5	123%	70%	130%	119%	80%	120%	138%	70%	130%
Boron	6461767		9	8	NA	< 5	94%	70%	130%	103%	80%	120%	111%	70%	130%
Boron (Hot Water Soluble)	6461794	6461794	0.46	0.49	NA	< 0.10	100%	60%	140%	99%	70%	130%	102%	60%	140%
Cadmium	6461767		<0.5	<0.5	NA	< 0.5	123%	70%	130%	100%	80%	120%	108%	70%	130%
Chromium	6461767		12	11	NA	< 5	117%	70%	130%	96%	80%	120%	107%	70%	130%
Cobalt	6461767		6.0	6.1	1.7%	< 0.8	102%	70%	130%	85%	80%	120%	99%	70%	130%
Copper	6461767		32.9	33.6	2.1%	< 1.0	120%	70%	130%	104%	80%	120%	NA	70%	130%
Lead	6461767		17	16	6.1%	< 1	118%	70%	130%	90%	80%	120%	96%	70%	130%
Molybdenum	6461767		<0.5	<0.5	NA	< 0.5	117%	70%	130%	100%	80%	120%	116%	70%	130%
Nickel	6461767		11	11	0.0%	< 1	113%	70%	130%	94%	80%	120%	108%	70%	130%
Selenium	6461767		<0.8	<0.8	NA	< 0.8	81%	70%	130%	97%	80%	120%	114%	70%	130%
Silver	6461767		<0.5	<0.5	NA	< 0.5	103%	70%	130%	88%	80%	120%	99%	70%	130%
Thallium	6461767		<0.5	<0.5	NA	< 0.5	88%	70%	130%	108%	80%	120%	120%	70%	130%
Uranium	6461767		<0.50	<0.50	NA	< 0.50	88%	70%	130%	82%	80%	120%	91%	70%	130%
Vanadium	6461767		19.6	18.1	8.0%	< 2.0	116%	70%	130%	83%	80%	120%	117%	70%	130%
Zinc	6461767		161	154	4.4%	< 5	129%	70%	130%	112%	80%	120%	NA	70%	130%
Chromium, Hexavalent	6461795	6461795	<0.2	<0.2	NA	< 0.2	102%	70%	130%	90%	80%	120%	85%	70%	130%
Cyanide, WAD	6461778		<0.040	<0.040	NA	< 0.040	108%	70%	130%	98%	80%	120%	100%	70%	130%
Mercury	6461767		<0.10	<0.10	NA	< 0.10	103%	70%	130%	96%	80%	120%	102%	70%	130%
Electrical Conductivity (2:1)	6461767		0.152	0.140	8.2%	< 0.005	96%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6461767		0.297	0.288	3.1%	NA									
pH, 2:1 CaCl2 Extraction	6464465		6.84	6.86	0.3%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.
For a multi-element scan for lab control standards and matrix spikes, up to 10% of analytes may exceed the quoted limits by up to 10% absolute and it is considered acceptable.

O. Reg. 153(511) - Metals & Inorganics (Soil)															
Electrical Conductivity (2:1)	6461764		1.58	1.49	5.9%	< 0.005	99%	80%	120%						

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

Certified By:

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis

RPT Date: Jan 27, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 to C10)	6459801		<5	<5	NA	< 5	84%	60%	140%	77%	60%	140%	88%	60%	140%
F2 (C10 to C16)	6461957		< 7	< 7	NA	< 10	125%	60%	140%	82%	60%	140%	102%	60%	140%
F3 (C16 to C34)	6461957		< 50	< 50	NA	< 50	125%	60%	140%	87%	60%	140%	110%	60%	140%
F4 (C34 to C50)	6461957		< 50	< 50	NA	< 50	82%	60%	140%	70%	60%	140%	69%	60%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	6459801		<0.05	<0.05	NA	< 0.05	118%	50%	140%	82%	50%	140%	66%	50%	140%
Vinyl Chloride	6459801		<0.02	<0.02	NA	< 0.02	103%	50%	140%	74%	50%	140%	66%	50%	140%
Bromomethane	6459801		<0.05	<0.05	NA	< 0.05	93%	50%	140%	52%	50%	140%	68%	50%	140%
Trichlorofluoromethane	6459801		<0.05	<0.05	NA	< 0.05	72%	50%	140%	100%	50%	140%	85%	50%	140%
Acetone	6459801		<0.50	<0.50	NA	< 0.50	112%	50%	140%	102%	50%	140%	94%	50%	140%
1,1-Dichloroethylene	6459801		<0.05	<0.05	NA	< 0.05	61%	50%	140%	79%	60%	130%	103%	50%	140%
Methylene Chloride	6459801		<0.05	<0.05	NA	< 0.05	75%	50%	140%	81%	60%	130%	110%	50%	140%
Trans- 1,2-Dichloroethylene	6459801		<0.05	<0.05	NA	< 0.05	65%	50%	140%	85%	60%	130%	98%	50%	140%
Methyl tert-butyl Ether	6459801		<0.05	<0.05	NA	< 0.05	86%	50%	140%	68%	60%	130%	71%	50%	140%
1,1-Dichloroethane	6459801		<0.02	<0.02	NA	< 0.02	95%	50%	140%	116%	60%	130%	109%	50%	140%
Methyl Ethyl Ketone	6459801		<0.50	<0.50	NA	< 0.50	100%	50%	140%	110%	50%	140%	109%	50%	140%
Cis- 1,2-Dichloroethylene	6459801		<0.02	<0.02	NA	< 0.02	93%	50%	140%	105%	60%	130%	103%	50%	140%
Chloroform	6459801		<0.04	<0.04	NA	< 0.04	101%	50%	140%	112%	60%	130%	109%	50%	140%
1,2-Dichloroethane	6459801		<0.03	<0.03	NA	< 0.03	102%	50%	140%	119%	60%	130%	110%	50%	140%
1,1,1-Trichloroethane	6459801		<0.05	<0.05	NA	< 0.05	93%	50%	140%	96%	60%	130%	98%	50%	140%
Carbon Tetrachloride	6459801		<0.05	<0.05	NA	< 0.05	74%	50%	140%	76%	60%	130%	77%	50%	140%
Benzene	6459801		<0.02	<0.02	NA	< 0.02	88%	50%	140%	93%	60%	130%	98%	50%	140%
1,2-Dichloropropane	6459801		<0.03	<0.03	NA	< 0.03	108%	50%	140%	95%	60%	130%	111%	50%	140%
Trichloroethylene	6459801		<0.03	<0.03	NA	< 0.03	101%	50%	140%	95%	60%	130%	88%	50%	140%
Bromodichloromethane	6459801		<0.05	<0.05	NA	< 0.05	108%	50%	140%	95%	60%	130%	96%	50%	140%
Methyl Isobutyl Ketone	6459801		<0.50	<0.50	NA	< 0.50	103%	50%	140%	103%	50%	140%	90%	50%	140%
1,1,2-Trichloroethane	6459801		<0.04	<0.04	NA	< 0.04	110%	50%	140%	102%	60%	130%	108%	50%	140%
Toluene	6459801		<0.05	<0.05	NA	< 0.05	93%	50%	140%	100%	60%	130%	112%	50%	140%
Dibromochloromethane	6459801		<0.05	<0.05	NA	< 0.05	102%	50%	140%	103%	60%	130%	105%	50%	140%
Ethylene Dibromide	6459801		<0.04	<0.04	NA	< 0.04	95%	50%	140%	108%	60%	130%	111%	50%	140%
Tetrachloroethylene	6459801		<0.05	<0.04	NA	< 0.05	96%	50%	140%	108%	60%	130%	112%	50%	140%
1,1,1,2-Tetrachloroethane	6459801		<0.04	<0.04	NA	< 0.04	101%	50%	140%	117%	60%	130%	108%	50%	140%
Chlorobenzene	6459801		<0.05	<0.05	NA	< 0.05	117%	50%	140%	108%	60%	130%	97%	50%	140%
Ethylbenzene	6459801		<0.05	<0.05	NA	< 0.05	85%	50%	140%	84%	60%	130%	89%	50%	140%
m & p-Xylene	6459801		<0.05	<0.05	NA	< 0.05	91%	50%	140%	95%	60%	130%	100%	50%	140%
Bromoform	6459801		<0.05	<0.05	NA	< 0.05	116%	50%	140%	114%	60%	130%	99%	50%	140%
Styrene	6459801		<0.05	<0.05	NA	< 0.05	103%	50%	140%	93%	60%	130%	102%	50%	140%
1,1,2,2-Tetrachloroethane	6459801		<0.05	<0.05	NA	< 0.05	90%	50%	140%	118%	60%	130%	107%	50%	140%
o-Xylene	6459801		<0.05	<0.05	NA	< 0.05	97%	50%	140%	95%	60%	130%	98%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T239421
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jan 27, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	6459801		<0.05	<0.05	NA	< 0.05	98%	50%	140%	111%	60%	130%	97%	50%	140%
1,4-Dichlorobenzene	6459801		<0.05	<0.05	NA	< 0.05	102%	50%	140%	112%	60%	130%	97%	50%	140%
1,2-Dichlorobenzene	6459801		<0.05	<0.05	NA	< 0.05	85%	50%	140%	109%	60%	130%	103%	50%	140%
n-Hexane	6459801		<0.05	<0.05	NA	< 0.05	83%	50%	140%	82%	60%	130%	99%	50%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6467940		<0.05	<0.05	NA	< 0.05	89%	50%	140%	80%	50%	140%	88%	50%	140%
Acenaphthylene	6467940		<0.05	<0.05	NA	< 0.05	81%	50%	140%	75%	50%	140%	78%	50%	140%
Acenaphthene	6467940		<0.05	<0.05	NA	< 0.05	90%	50%	140%	78%	50%	140%	90%	50%	140%
Fluorene	6467940		<0.05	<0.05	NA	< 0.05	88%	50%	140%	70%	50%	140%	75%	50%	140%
Phenanthrene	6467940		<0.05	<0.05	NA	< 0.05	86%	50%	140%	88%	50%	140%	101%	50%	140%
Anthracene	6467940		<0.05	<0.05	NA	< 0.05	86%	50%	140%	80%	50%	140%	98%	50%	140%
Fluoranthene	6467940		0.10	0.11	NA	< 0.05	85%	50%	140%	90%	50%	140%	86%	50%	140%
Pyrene	6467940		0.12	0.11	NA	< 0.05	80%	50%	140%	80%	50%	140%	81%	50%	140%
Benzo(a)anthracene	6467940		<0.05	<0.05	NA	< 0.05	71%	50%	140%	73%	50%	140%	96%	50%	140%
Chrysene	6467940		0.05	0.06	NA	<0.05	112%	50%	140%	90%	50%	140%	86%	50%	140%
Benzo(b)fluoranthene	6467940		<0.05	<0.05	NA	< 0.05	107%	50%	140%	78%	50%	140%	103%	50%	140%
Benzo(k)fluoranthene	6467940		<0.05	<0.05	NA	< 0.05	103%	50%	140%	95%	50%	140%	80%	50%	140%
Benzo(a)pyrene	6467940		<0.05	<0.05	NA	< 0.05	114%	50%	140%	95%	50%	140%	103%	50%	140%
Indeno(1,2,3-cd)pyrene	6467940		<0.05	<0.05	NA	< 0.05	90%	50%	140%	85%	50%	140%	105%	50%	140%
Dibenz(a,h)anthracene	6467940		<0.05	<0.05	NA	< 0.05	86%	50%	140%	85%	50%	140%	83%	50%	140%
Benzo(g,h,i)perylene	6467940		<0.05	<0.05	NA	< 0.05	106%	50%	140%	108%	50%	140%	98%	50%	140%

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

Certified By:

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

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

RPT Date: Jan 27, 2025

PARAMETER	Sample Id	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)										
Beryllium		123%	70%	130%	119%	80%	120%	138%	70%	130%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.
For a multi-element scan for lab control standards and matrix spikes, up to 10% of analytes may exceed the quoted limits by up to 10% absolute and it is considered acceptable.

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

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AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239421

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

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AGAT Laboratories

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webearth.agatlabs.com

Chain of Custody Record

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

Laboratory Use Only
Work Order #: 25T239421
Cooler Quantity: 1 lg
Arrival Temperatures: 3.2 | 3.9 | 3.8
Custody Seal Intact: ☐ Yes ☐ No ☑ N/A
Notes: 6 HT

Report Information:
Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aacnvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 (Indicate One)
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ (Indicate One)

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

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

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply): _____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	O. Reg 153: All Metals ☐ / 153 Metals (excl. Hydrides) ☐ / Hydride Metals ☐ / 153 Metals (incl. Hydrides) ☐	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☑ EC ☐ FOC ☐ Hg ☑ pH ☑ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
BH25-17 @ 0-2.5	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-18 @ 7.5-10	1/15/25		4	S			☑	☐	☑						☑									☑		
DUP 25-18	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-19 @ 2.5-5	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-20 @ 5-7.5	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-21 @ 5-10	1/15/25		4	S			☑	☐	☑						☑									☑		
DUP 25-21	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-22 @ 7.5-10	1/15/25		4	S			☑	☐	☑						☑									☑		
DUP 25-22	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-23 @ 5-7.5	1/15/25		4	S			☑	☐	☑						☑									☑		
BH25-24 @ 2.5-7.5	1/15/25		4	S			☑	☐	☑						☑									☑		

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsof [redacted]	1/16/25	11am	[redacted]	Jan 16	3:20pm
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 1 of 1
N°:

AGAT Laboratories

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680

ATTENTION TO: Ali Rasoul

PROJECT: 8368 BVD Puslinch Delineation

AGAT WORK ORDER: 25T239704

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead

TRACE ORGANICS REVIEWED BY: Radhika Chakraberty, Trace Organics Lab Manager

DATE REPORTED: Jan 27, 2025

PAGES (INCLUDING COVER): 22

VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	BH25-25 @ 7.	BH25-26 @ 7.	BH25-27 @	BH25-28 @ 7.	BH25-29 @ 2.		BH25-31 @ 7.	BH25-32 @
SAMPLE DESCRIPTION:				5-10	5-10	5-7.5	5-10	5-7.5	BH25-30 @ 0-5	5-10	5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				6463158	6463162	6463163	6463164	6463165	6463166	6463167	6463168
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	4	4	5	7	4	4
Barium	µg/g	220	2.0	19.5	21.5	20.1	19.1	47.0	37.2	21.4	19.2
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.6	<0.5	<0.5
Boron	µg/g	36	5	6	7	6	7	18	18	10	9
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.15	0.25	0.18	1.84	0.49	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.7	<0.5
Chromium	µg/g	70	5	7	8	7	7	16	20	8	8
Cobalt	µg/g	21	0.8	3.5	4.0	3.8	4.1	7.7	10.0	4.0	3.5
Copper	µg/g	92	1.0	16.0	15.6	15.8	17.5	22.3	46.7	15.8	14.8
Lead	µg/g	120	1	30	27	27	30	9	11	32	25
Molybdenum	µg/g	2	0.5	<0.5	<0.5	<0.5	<0.5	0.8	0.7	<0.5	0.6
Nickel	µg/g	82	1	6	7	7	7	16	21	7	6
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	<0.50	<0.50	<0.50	1.09	0.57	<0.50	<0.50
Vanadium	µg/g	86	2.0	11.5	12.9	12.9	12.9	21.3	26.2	13.8	13.0
Zinc	µg/g	290	5	233	222	184	288	77	81	219	211
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.486	0.120	0.153	0.102	0.233	0.233	0.212	0.106
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.991	0.618	0.437	0.562	0.586	0.477	0.513	0.223
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.88	6.86	6.87	6.85	7.26	10.4	7.89	7.37

Certified By:

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PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	BH25-33 @ 7.	BH25-34 @ 7.	BH25-35 @ 7.	BH25-36 @ 2.	BH25-37 @	BH25-38 @
SAMPLE DESCRIPTION:				5-10	5-10	5-10	5-5	5-7.5	0-2.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
				6463169	6463170	6463171	6463172	6463173	6463174
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	4	12	5	9
Barium	µg/g	220	2.0	19.5	18.9	17.9	42.7	28.5	35.5
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	1.2	<0.5	1.3
Boron	µg/g	36	5	8	9	8	25	12	25
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.11	<0.10	1.11	0.55	1.62
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	5	7	8	7	28	13	32
Cobalt	µg/g	21	0.8	3.6	4.1	4.0	16.9	6.2	18.5
Copper	µg/g	92	1.0	13.9	18.8	16.3	30.0	23.5	42.1
Lead	µg/g	120	1	25	31	26	38	29	6
Molybdenum	µg/g	2	0.5	<0.5	0.5	<0.5	0.9	<0.5	<0.5
Nickel	µg/g	82	1	8	8	8	34	13	39
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50	<0.50	<0.50	0.57	<0.50	0.67
Vanadium	µg/g	86	2.0	12.1	13.7	13.1	35.1	20.1	37.4
Zinc	µg/g	290	5	207	250	233	123	154	85
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.126	0.133	0.129	0.175	0.240	0.322
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.234	0.178	0.129	0.648	0.859	0.821
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.11	6.96	6.90	6.87	6.88	6.82

Certified By: [redacted]

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AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6463158-6463174 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-25 @ 7.	BH25-26 @ 7.	BH25-27 @	BH25-28 @ 7.	BH25-29 @ 2.		BH25-31 @ 7.	BH25-32 @
SAMPLE DESCRIPTION:				5-10	5-10	5-7.5	5-10	5-7.5	BH25-30 @ 0-5	5-10	5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463158	6463162	6463163	6463164	6463165	6463166	6463167	6463168
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	10.5	8.7	9.0	9.9	10.2	9.4	9.8	7.1
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		75	80	80	80	75	85	85	75
Acridine-d9	%	50-140		90	75	95	90	90	85	100	85
Terphenyl-d14	%	50-140		75	105	105	95	95	90	70	100

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-33 @ 7.	BH25-34 @ 7.	BH25-35 @ 7.	BH25-36 @ 2.	BH25-37 @	BH25-38 @
SAMPLE DESCRIPTION:				5-10	5-10	5-10	5-5	5-7.5	0-2.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463169	6463170	6463171	6463172	6463173	6463174
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.8	11.8	8.1	7.6	8.3	8.9
Surrogate	Unit	Acceptable Limits							
Naphthalene-d8	%	50-140		85	70	90	85	85	70
Acridine-d9	%	50-140		115	85	110	110	105	100
Terphenyl-d14	%	50-140		80	85	90	80	90	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6463158-6463174 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-25 @ 7.	BH25-26 @ 7.	BH25-27 @	BH25-28 @ 7.	BH25-29 @ 2.		BH25-31 @ 7.	BH25-32 @
SAMPLE DESCRIPTION:				5-10	5-10	5-7.5	5-10	5-7.5	BH25-30 @ 0-5	5-10	5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463158	6463162	6463163	6463164	6463165	6463166	6463167	6463168
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	10.5	8.7	9.0	9.9	10.2	9.4	9.8	7.1
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		103	106	103	105	104	107	106	106
Terphenyl	%	60-140		77	95	85	90	86	84	88	87

Certified By:

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SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-33 @ 7.	BH25-34 @ 7.	BH25-35 @ 7.	BH25-36 @ 2.	BH25-37 @	BH25-38 @
		SAMPLE DESCRIPTION:		5-10	5-10	5-10	5-5	5-7.5	0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463169	6463170	6463171	6463172	6463173	6463174
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	9.8	11.8	8.1	7.6	8.3	8.9
Surrogate	Unit	Acceptable Limits							
Toluene-d8	%	50-140		96	107	105	102	102	104
Terphenyl	%	60-140		93	80	84	98	99	84

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6463158-6463174 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-25 @ 7.	BH25-26 @ 7.	BH25-27 @	BH25-28 @ 7.	BH25-29 @ 2.		BH25-31 @ 7.	BH25-32 @
SAMPLE DESCRIPTION:				5-10	5-10	5-7.5	5-10	5-7.5	BH25-30 @ 0-5	5-10	5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463158	6463162	6463163	6463164	6463165	6463166	6463167	6463168
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-25 @ 7.	BH25-26 @ 7.	BH25-27 @	BH25-28 @ 7.	BH25-29 @ 2.		BH25-31 @ 7.	BH25-32 @
SAMPLE DESCRIPTION:				5-10	5-10	5-7.5	5-10	5-7.5	BH25-30 @ 0-5	5-10	5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463158	6463162	6463163	6463164	6463165	6463166	6463167	6463168
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	10.5	8.7	9.0	9.9	10.2	9.4	9.8	7.1
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		103	106	103	105	104	107	106	106
4-Bromofluorobenzene	% Recovery	50-140		91	86	90	95	94	88	90	88

Certified By:

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AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

Parameter	Unit	G / S	RDL	BH25-33 @ 7. 5-10 Soil 2025-01-15 6463169	BH25-34 @ 7. 5-10 Soil 2025-01-15 6463170	BH25-35 @ 7. 5-10 Soil 2025-01-15 6463171	BH25-36 @ 2. 5-5 Soil 2025-01-15 6463172	BH25-37 @ 5-7.5 Soil 2025-01-15 6463173	BH25-38 @ 0-2.5 Soil 2025-01-15 6463174
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-17

DATE REPORTED: 2025-01-27

				BH25-33 @ 7.	BH25-34 @ 7.	BH25-35 @ 7.	BH25-36 @ 2.	BH25-37 @	BH25-38 @
		SAMPLE DESCRIPTION:		5-10	5-10	5-10	5-5	5-7.5	0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15	2025-01-15
Parameter	Unit	G / S	RDL	6463169	6463170	6463171	6463172	6463173	6463174
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.8	11.8	8.1	7.6	8.3	8.9
Surrogate	Unit	Acceptable Limits							
Toluene-d8	% Recovery	50-140		96	107	105	102	102	104
4-Bromofluorobenzene	% Recovery	50-140		92	92	92	97	87	93

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6463158-6463174 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Soil Analysis

RPT Date: Jan 27, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	6463605		<0.8	<0.8	NA	< 0.8	103%	70%	130%	83%	80%	120%	74%	70%	130%
Arsenic	6463605		3	3	NA	< 1	136%	70%	130%	91%	80%	120%	110%	70%	130%
Barium	6463605		58.0	59.7	2.9%	< 2.0	108%	70%	130%	98%	80%	120%	109%	70%	130%
Beryllium	6463605		<0.5	<0.5	NA	< 0.5	103%	70%	130%	102%	80%	120%	118%	70%	130%
Boron	6463605		9	9	NA	< 5	82%	70%	130%	103%	80%	120%	105%	70%	130%
Boron (Hot Water Soluble)	6463605		0.34	0.33	NA	< 0.10	87%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	6463605		<0.5	<0.5	NA	< 0.5	113%	70%	130%	96%	80%	120%	107%	70%	130%
Chromium	6463605		19	18	NA	< 5	112%	70%	130%	98%	80%	120%	94%	70%	130%
Cobalt	6463605		6.1	6.1	0.0%	< 0.8	100%	70%	130%	84%	80%	120%	116%	70%	130%
Copper	6463605		22.2	20.9	6.0%	< 1.0	115%	70%	130%	96%	80%	120%	90%	70%	130%
Lead	6463605		12	11	8.7%	< 1	121%	70%	130%	92%	80%	120%	95%	70%	130%
Molybdenum	6463605		<0.5	<0.5	NA	< 0.5	119%	70%	130%	93%	80%	120%	115%	70%	130%
Nickel	6463605		18	18	0.0%	< 1	111%	70%	130%	94%	80%	120%	106%	70%	130%
Selenium	6463605		<0.8	<0.8	NA	< 0.8	103%	70%	130%	95%	80%	120%	110%	70%	130%
Silver	6463605		<0.5	<0.5	NA	< 0.5	112%	70%	130%	95%	80%	120%	102%	70%	130%
Thallium	6463605		<0.5	<0.5	NA	< 0.5	108%	70%	130%	107%	80%	120%	116%	70%	130%
Uranium	6463605		<0.50	0.52	NA	< 0.50	94%	70%	130%	86%	80%	120%	87%	70%	130%
Vanadium	6463605		25.3	25.1	0.8%	< 2.0	127%	70%	130%	103%	80%	120%	113%	70%	130%
Zinc	6463605		67	69	2.9%	< 5	123%	70%	130%	95%	80%	120%	NA	70%	130%
Chromium, Hexavalent	6469048		<0.2	<0.2	NA	< 0.2	94%	70%	130%	97%	80%	120%	85%	70%	130%
Cyanide, WAD	6463168	6463168	<0.040	<0.040	NA	< 0.040	101%	70%	130%	89%	80%	120%	106%	70%	130%
Mercury	6463605		<0.10	<0.10	NA	< 0.10	103%	70%	130%	100%	80%	120%	98%	70%	130%
Electrical Conductivity (2:1)	6463605		1.11	1.03	7.5%	< 0.005	106%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6463605		5.23	5.36	2.5%	NA									
pH, 2:1 CaCl2 Extraction	6463592		6.83	6.85	0.3%	NA	101%	80%	120%						

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

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

O. Reg. 153(511) - Metals & Inorganics (Soil)															
pH, 2:1 CaCl2 Extraction	6463173	6463173	6.88	6.90	0.3%	NA	101%	80%	120%						

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

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T239704
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis

RPT Date: Jan 27, 2025

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 to C10)	6463174	6463174	<5	<5	NA	< 5	119%	60%	140%	98%	60%	140%	82%	60%	140%
F2 (C10 to C16)	6463169	6463169	< 10	< 10	NA	< 10	119%	60%	140%	117%	60%	140%	80%	60%	140%
F3 (C16 to C34)	6463169	6463169	< 50	< 50	NA	< 50	122%	60%	140%	115%	60%	140%	83%	60%	140%
F4 (C34 to C50)	6463169	6463169	< 50	< 50	NA	< 50	75%	60%	140%	124%	60%	140%	107%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6463169	6463169	<0.05	<0.05	NA	< 0.05	124%	50%	140%	80%	50%	140%	90%	50%	140%
Acenaphthylene	6463169	6463169	<0.05	<0.05	NA	< 0.05	118%	50%	140%	88%	50%	140%	73%	50%	140%
Acenaphthene	6463169	6463169	<0.05	<0.05	NA	< 0.05	113%	50%	140%	85%	50%	140%	80%	50%	140%
Fluorene	6463169	6463169	<0.05	<0.05	NA	< 0.05	116%	50%	140%	78%	50%	140%	73%	50%	140%
Phenanthrene	6463169	6463169	<0.05	<0.05	NA	< 0.05	117%	50%	140%	80%	50%	140%	75%	50%	140%
Anthracene	6463169	6463169	<0.05	<0.05	NA	< 0.05	95%	50%	140%	80%	50%	140%	80%	50%	140%
Fluoranthene	6463169	6463169	<0.05	<0.05	NA	< 0.05	120%	50%	140%	75%	50%	140%	73%	50%	140%
Pyrene	6463169	6463169	<0.05	<0.05	NA	< 0.05	116%	50%	140%	75%	50%	140%	73%	50%	140%
Benzo(a)anthracene	6463169	6463169	<0.05	<0.05	NA	< 0.05	109%	50%	140%	98%	50%	140%	85%	50%	140%
Chrysene	6463169	6463169	<0.05	<0.05	NA	< 0.05	117%	50%	140%	80%	50%	140%	85%	50%	140%
Benzo(b)fluoranthene	6463169	6463169	<0.05	<0.05	NA	< 0.05	112%	50%	140%	80%	50%	140%	73%	50%	140%
Benzo(k)fluoranthene	6463169	6463169	<0.05	<0.05	NA	< 0.05	122%	50%	140%	83%	50%	140%	88%	50%	140%
Benzo(a)pyrene	6463169	6463169	<0.05	<0.05	NA	< 0.05	109%	50%	140%	75%	50%	140%	83%	50%	140%
Indeno(1,2,3-cd)pyrene	6463169	6463169	<0.05	<0.05	NA	< 0.05	105%	50%	140%	78%	50%	140%	78%	50%	140%
Dibenz(a,h)anthracene	6463169	6463169	<0.05	<0.05	NA	< 0.05	99%	50%	140%	90%	50%	140%	78%	50%	140%
Benzo(g,h,i)perylene	6463169	6463169	<0.05	<0.05	NA	< 0.05	113%	50%	140%	83%	50%	140%	83%	50%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	99%	50%	140%	119%	50%	140%	115%	50%	140%
Vinyl Chloride	6463174	6463174	<0.02	<0.02	NA	< 0.02	117%	50%	140%	104%	50%	140%	79%	50%	140%
Bromomethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	66%	50%	140%	97%	50%	140%	71%	50%	140%
Trichlorofluoromethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	72%	50%	140%	90%	50%	140%	98%	50%	140%
Acetone	6463174	6463174	<0.50	<0.50	NA	< 0.50	96%	50%	140%	90%	50%	140%	116%	50%	140%
1,1-Dichloroethylene	6463174	6463174	<0.05	<0.05	NA	< 0.05	91%	50%	140%	96%	60%	130%	78%	50%	140%
Methylene Chloride	6463174	6463174	<0.05	<0.05	NA	< 0.05	68%	50%	140%	84%	60%	130%	98%	50%	140%
Trans- 1,2-Dichloroethylene	6463174	6463174	<0.05	<0.05	NA	< 0.05	130%	50%	140%	106%	60%	130%	86%	50%	140%
Methyl tert-butyl Ether	6463174	6463174	<0.05	<0.05	NA	< 0.05	98%	50%	140%	95%	60%	130%	97%	50%	140%
1,1-Dichloroethane	6463174	6463174	<0.02	<0.02	NA	< 0.02	90%	50%	140%	80%	60%	130%	66%	50%	140%
Methyl Ethyl Ketone	6463174	6463174	<0.50	<0.50	NA	< 0.50	101%	50%	140%	99%	50%	140%	100%	50%	140%
Cis- 1,2-Dichloroethylene	6463174	6463174	<0.02	<0.02	NA	< 0.02	80%	50%	140%	116%	60%	130%	94%	50%	140%
Chloroform	6463174	6463174	<0.04	<0.04	NA	< 0.04	105%	50%	140%	87%	60%	130%	128%	50%	140%
1,2-Dichloroethane	6463174	6463174	<0.03	<0.03	NA	< 0.03	73%	50%	140%	87%	60%	130%	65%	50%	140%
1,1,1-Trichloroethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	80%	50%	140%	78%	60%	130%	97%	50%	140%
Carbon Tetrachloride	6463174	6463174	<0.05	<0.05	NA	< 0.05	80%	50%	140%	86%	60%	130%	80%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T239704
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jan 27, 2025

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	6463174	6463174	<0.02	<0.02	NA	< 0.02	81%	50%	140%	74%	60%	130%	62%	50%	140%
1,2-Dichloropropane	6463174	6463174	<0.03	<0.03	NA	< 0.03	63%	50%	140%	70%	60%	130%	71%	50%	140%
Trichloroethylene	6463174	6463174	<0.03	<0.03	NA	< 0.03	85%	50%	140%	83%	60%	130%	80%	50%	140%
Bromodichloromethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	74%	50%	140%	65%	60%	130%	62%	50%	140%
Methyl Isobutyl Ketone	6463174	6463174	<0.50	<0.50	NA	< 0.50	112%	50%	140%	87%	50%	140%	84%	50%	140%
1,1,2-Trichloroethane	6463174	6463174	<0.04	<0.04	NA	< 0.04	87%	50%	140%	81%	60%	130%	87%	50%	140%
Toluene	6463174	6463174	<0.05	<0.05	NA	< 0.05	97%	50%	140%	75%	60%	130%	92%	50%	140%
Dibromochloromethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	61%	50%	140%	69%	60%	130%	75%	50%	140%
Ethylene Dibromide	6463174	6463174	<0.04	<0.04	NA	< 0.04	97%	50%	140%	69%	60%	130%	64%	50%	140%
Tetrachloroethylene	6463174	<0.05	<0.05	<0.05	NA	< 0.05	98%	50%	140%	69%	60%	130%	65%	50%	140%
1,1,1,2-Tetrachloroethane	6463174	6463174	<0.04	<0.04	NA	< 0.04	82%	50%	140%	64%	60%	130%	66%	50%	140%
Chlorobenzene	6463174	6463174	<0.05	<0.05	NA	< 0.05	69%	50%	140%	81%	60%	130%	95%	50%	140%
Ethylbenzene	6463174	6463174	<0.05	<0.05	NA	< 0.05	77%	50%	140%	62%	60%	130%	79%	50%	140%
m & p-Xylene	6463174	6463174	<0.05	<0.05	NA	< 0.05	97%	50%	140%	95%	60%	130%	92%	50%	140%
Bromoform	6463174	6463174	<0.05	<0.05	NA	< 0.05	63%	50%	140%	73%	60%	130%	61%	50%	140%
Styrene	6463174	6463174	<0.05	<0.05	NA	< 0.05	78%	50%	140%	70%	60%	130%	85%	50%	140%
1,1,2,2-Tetrachloroethane	6463174	6463174	<0.05	<0.05	NA	< 0.05	79%	50%	140%	92%	60%	130%	70%	50%	140%
o-Xylene	6463174	6463174	<0.05	<0.05	NA	< 0.05	76%	50%	140%	72%	60%	130%	95%	50%	140%
1,3-Dichlorobenzene	6463174	6463174	<0.05	<0.05	NA	< 0.05	69%	50%	140%	80%	60%	130%	100%	50%	140%
1,4-Dichlorobenzene	6463174	6463174	<0.05	<0.05	NA	< 0.05	81%	50%	140%	89%	60%	130%	104%	50%	140%
1,2-Dichlorobenzene	6463174	6463174	<0.05	<0.05	NA	< 0.05	67%	50%	140%	80%	60%	130%	94%	50%	140%
n-Hexane	6463174	6463174	<0.05	<0.05	NA	< 0.05	81%	50%	140%	95%	60%	130%	72%	50%	140%

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

Certified By:

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

RPT Date: Jan 27, 2025

PARAMETER	Sample Id	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)										
Arsenic		136%	70%	130%	91%	80%	120%	110%	70%	130%

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

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T239704

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Project Information:

Project: 8625 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8625
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 (Indicate One)
☑ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

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

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

Laboratory Use Only

Work Order #: 25T239704
Cooler Quantity: 1 @
Arrival Temperatures: 5.3 | 5.0 | 5.2
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: L I +

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☑ EC ☐ FOC ☐ Hg ☑ pH ☑ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Mctals Soil 93-101	Mctals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
BH25-25 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-26 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-27 @ 5-7.5	1/15/25		4	S			☑	☑						☑							☑				
BH25-28 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-29 @ 2.5-7.5	1/15/25		4	S			☑	☑						☑							☑				
BH25-30 @ 0-5	1/15/25		4	S			☑	☑						☑							☑				
BH25-31 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-32 @ 5-7.5	1/15/25		4	S			☑	☑						☑							☑				
BH25-33 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-34 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				
BH25-35 @ 7.5-10	1/15/25		4	S			☑	☑						☑							☑				

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsom [redacted]	1/17/25	8am	[redacted]	Jan 17	1:30PM
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 1 of 2
N°:

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aacnvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Project Information:

Project: 8625 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8625
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 (Indicate One)
☑ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☑ Coarse ☐ Fine

☐ Sewer Use
☐ Sanitary ☐ Storm
Region ____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
____ (Indicate One)

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

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

Laboratory Use Only

Work Order #: 25T239704
Cooler Quantity: 1 @
Arrival Temperatures: 5 | 5 | 5
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply): ____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

B	Biota
GW	Ground Water
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S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	All Metals / Hydride Metals	153 Metals (excl. Hydrides) / 153 Metals (Incl. Hydrides)	ORPs: B-HWS / Cl / CN / Cr6+ / EC / FOC / Hg / pH / SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: TP / NH3 / TKN / NO3 / NO2 / NO3+NO2	Volatiles: VOC / BTEX / THM	PHCs F1 - F4	ABNs	PAHs	PCBs: Total / Aroclors	Organochlorine Pesticides	TCLP: M&I / VOCs / ABNs / B(a)P / PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
BH25-36 @ 2.5-5	1/15/25		4	S			☑			☑							☑							☑			
BH25-37 @ 5-7.5	1/15/25		4	S			☑			☑							☑							☑			
BH25-38 @ 0-2.5	1/15/25		4	S			☑			☑							☑							☑			

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsom [redacted]	1/17/25	8am	[redacted]	Jan 17	1:30p
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Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 2 of 2

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CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680
ATTENTION TO: Ali Rasoul
PROJECT: 8368 BVD Puslinch Delineation
AGAT WORK ORDER: 25T240863
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Jan 30, 2025
PAGES (INCLUDING COVER): 53
VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5	25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472466	6472473	6472474	6472475	6472476	6472477	6472478	6472479
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	8	3	3	6	5	7	4	4
Barium	µg/g	220	2.0	45.4	22.8	20.8	50.0	56.1	46.8	44.1	43.2
Beryllium	µg/g	2.5	0.5	1.1	<0.5	<0.5	0.6	0.6	0.9	<0.5	<0.5
Boron	µg/g	36	5	25	7	7	8	10	21	7	7
Boron (Hot Water Soluble)	µg/g	NA	0.10	1.50	0.12	<0.10	0.63	0.59	1.90	0.14	0.26
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.5	<0.5
Chromium	µg/g	70	5	30	8	7	16	16	28	14	14
Cobalt	µg/g	21	0.8	17.0	3.7	3.5	7.8	7.9	16.8	6.2	5.3
Copper	µg/g	92	1.0	30.7	13.4	13.9	22.9	20.6	25.0	20.0	14.0
Lead	µg/g	120	1	19	24	29	44	42	6	117	42
Molybdenum	µg/g	2	0.5	0.6	<0.5	<0.5	0.6	0.6	<0.5	<0.5	<0.5
Nickel	µg/g	82	1	35	5	5	16	16	32	12	11
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.74	0.51	<0.50	0.63	0.68	0.68	<0.50	0.59
Vanadium	µg/g	86	2.0	39.5	15.0	12.8	24.9	26.2	36.7	23.4	24.0
Zinc	µg/g	290	5	93	151	200	215	196	71	168	190
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.220	0.113	0.153	0.174	0.249	0.162	0.174	0.122
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.674	0.496	0.347	0.591	0.542	1.16	0.271	0.144
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.55	7.70	7.77	7.60	7.73	7.94	7.58	7.37

Certified By:



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AGAT Laboratories

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472671	6472672	6472673	6472674	6472675	6472676	6472677	6472678
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	6	6	5	5	4	6	6
Barium	µg/g	220	2.0	48.1	54.9	75.7	41.9	52.7	54.4	58.7	59.4
Beryllium	µg/g	2.5	0.5	<0.5	0.8	0.8	<0.5	0.6	0.5	0.5	0.5
Boron	µg/g	36	5	8	18	19	9	12	11	8	8
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.19	1.25	1.45	0.77	0.38	0.36	0.58	0.50
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	0.6
Chromium	µg/g	70	5	15	24	23	13	19	17	16	17
Cobalt	µg/g	21	0.8	5.2	11.8	11.9	6.6	8.7	8.1	6.9	7.2
Copper	µg/g	92	1.0	15.7	29.6	24.0	18.5	22.0	20.2	22.1	21.7
Lead	µg/g	120	1	37	23	27	37	26	27	69	47
Molybdenum	µg/g	2	0.5	0.5	0.7	1.0	0.6	0.7	0.6	0.7	0.6
Nickel	µg/g	82	1	12	24	25	15	17	16	14	15
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.61	0.70	0.63	0.56	0.63	0.60	0.63	0.70
Vanadium	µg/g	86	2.0	24.9	33.9	32.8	21.6	27.5	26.3	27.1	28.4
Zinc	µg/g	290	5	203	129	105	193	140	143	286	214
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.180	0.221	0.284	0.184	0.194	0.130	0.204	0.142
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.118	0.876	1.07	1.14	0.621	0.341	0.170	0.164
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.42	6.51	7.67	7.47	7.69	7.74	7.48	7.51

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472679	6472680	6472681	6472682	6472683	6472684	6472685	6472686
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	4	6	5	3	6	2	10
Barium	µg/g	220	2.0	56.2	34.4	59.0	51.0	23.9	46.1	15.3	81.3
Beryllium	µg/g	2.5	0.5	0.5	<0.5	0.6	0.5	<0.5	0.7	<0.5	0.8
Boron	µg/g	36	5	9	8	12	14	9	12	<5	19
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.57	0.31	0.62	0.75	0.18	0.76	0.54	0.41
Cadmium	µg/g	1.2	0.5	0.6	<0.5	0.6	0.5	<0.5	0.8	<0.5	0.7
Chromium	µg/g	70	5	16	11	17	16	9	15	8	19
Cobalt	µg/g	21	0.8	6.7	4.7	8.0	7.7	4.1	7.5	2.7	9.7
Copper	µg/g	92	1.0	19.2	16.2	21.5	22.1	16.1	24.6	5.9	36.2
Lead	µg/g	120	1	54	36	49	42	25	44	7	130
Molybdenum	µg/g	2	0.5	0.6	<0.5	0.6	0.6	0.6	0.5	<0.5	1.3
Nickel	µg/g	82	1	14	9	17	15	7	15	5	19
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.64	0.53	0.64	0.54	<0.50	0.59	<0.50	0.63
Vanadium	µg/g	86	2.0	26.9	19.2	27.3	24.8	16.3	24.4	18.4	28.4
Zinc	µg/g	290	5	239	202	226	192	235	252	25	349
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.18
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.220	0.132	0.294	0.369	0.179	0.377	0.232	0.225
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.181	0.134	0.506	0.598	0.431	0.495	0.631	0.588
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.34	7.63	7.56	7.78	7.87	7.70	8.58	9.27

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62	25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-17	2025-01-17	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472687	6472688	6472689	6472719	6472724	6472725	6472726	6472727
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	9	5	6	5	6	7	6
Barium	µg/g	220	2.0	72.3	55.1	53.3	46.1	42.0	55.4	58.0	51.8
Beryllium	µg/g	2.5	0.5	1.0	1.2	0.6	0.6	0.5	0.6	0.6	0.6
Boron	µg/g	36	5	27	25	8	10	9	8	8	7
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.32	1.88	0.34	0.31	0.26	0.35	0.49	0.75
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.6	0.6	<0.5	0.6	0.8	0.7
Chromium	µg/g	70	5	25	30	16	15	14	16	15	15
Cobalt	µg/g	21	0.8	12.3	18.5	7.5	6.5	6.3	7.1	6.9	6.4
Copper	µg/g	92	1.0	17.4	30.0	18.8	18.9	18.6	21.8	21.7	18.1
Lead	µg/g	120	1	22	5	42	43	34	43	61	55
Molybdenum	µg/g	2	0.5	1.0	<0.5	0.5	0.7	0.6	0.6	0.7	0.6
Nickel	µg/g	82	1	27	37	14	13	12	14	14	13
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.56	0.60	0.50	0.56	<0.50	0.53	0.50	0.57
Vanadium	µg/g	86	2.0	33.0	37.5	26.0	25.1	24.1	26.9	25.0	25.4
Zinc	µg/g	290	5	109	81	245	276	223	241	336	266
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.386	0.222	0.126	0.200	0.145	0.234	0.216	0.244
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.423	1.09	0.149	0.152	0.231	0.159	0.374	0.161
pH, 2:1 CaCl2 Extraction	pH Units		NA	11.7	8.24	7.99	7.43	6.41	7.46	6.99	7.34

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472728	6472729	6472780	6472781	6472782	6472783	6472784	6472785
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	6	7	5	6	6	6	7
Barium	µg/g	220	2.0	62.3	51.6	60.4	64.4	79.2	17.2	54.0	71.2
Beryllium	µg/g	2.5	0.5	0.7	0.6	0.6	0.9	0.7	<0.5	0.6	<0.5
Boron	µg/g	36	5	7	8	9	17	17	17	18	7
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.49	0.46	0.48	0.63	0.29	0.12	0.44	0.50
Cadmium	µg/g	1.2	0.5	0.6	0.6	1.0	<0.5	<0.5	<0.5	0.7	1.0
Chromium	µg/g	70	5	17	15	16	22	19	6	15	16
Cobalt	µg/g	21	0.8	6.8	7.0	6.7	12.4	8.0	2.9	7.1	6.2
Copper	µg/g	92	1.0	20.7	19.2	19.9	42.2	32.5	13.5	22.0	23.3
Lead	µg/g	120	1	42	47	70	24	44	39	55	94
Molybdenum	µg/g	2	0.5	<0.5	0.6	0.8	0.6	0.8	<0.5	0.6	0.8
Nickel	µg/g	82	1	15	14	14	25	15	3	14	13
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.56	0.57	0.62	0.67	0.54	<0.50	0.58	0.71
Vanadium	µg/g	86	2.0	26.1	24.7	26.2	29.8	23.8	8.8	23.9	26.6
Zinc	µg/g	290	5	229	258	341	109	92	279	292	350
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.429	0.270	0.128	0.722	0.398	0.243	0.154	0.226
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.140	0.249	0.102	3.07	1.18	0.379	0.190	0.114
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.15	7.33	7.27	7.79	9.67	8.06	7.87	7.53

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472786	6472787	6472788	6472789	6472790	6472791	6472792	6472824
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	6	6	6	6	6	7	7
Barium	µg/g	220	2.0	71.8	58.1	52.8	74.2	75.0	61.2	58.5	62.4
Beryllium	µg/g	2.5	0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	7	7	6	5	5	6	6	6
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.45	0.51	0.80	0.60	0.65	0.50	0.49	0.43
Cadmium	µg/g	1.2	0.5	0.8	0.7	0.8	0.6	0.7	0.7	0.9	0.9
Chromium	µg/g	70	5	17	13	12	14	15	15	14	15
Cobalt	µg/g	21	0.8	7.3	5.8	5.4	6.5	6.7	6.0	6.2	6.6
Copper	µg/g	92	1.0	25.6	20.3	18.4	22.1	20.8	19.1	20.3	21.1
Lead	µg/g	120	1	77	64	66	58	57	61	74	68
Molybdenum	µg/g	2	0.5	0.8	0.6	0.6	0.5	0.5	0.6	0.6	0.6
Nickel	µg/g	82	1	15	12	11	13	13	13	12	13
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.71	0.64	0.54	0.57	0.61	0.60	0.61	0.62
Vanadium	µg/g	86	2.0	28.2	22.8	21.0	25.6	26.5	23.9	25.5	26.6
Zinc	µg/g	290	5	340	289	280	259	258	260	342	329
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.311	0.176	0.440	0.916	0.173	0.159	0.199	0.138
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.720	0.160	0.511	0.629	0.244	0.145	0.102	0.093
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.49	7.41	7.33	7.53	7.18	7.26	7.28	6.13

Certified By:

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472829	6472835	6472840	6472845	6472848	6472849
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	5	4	6	8	5
Barium	µg/g	220	2.0	44.7	44.5	38.3	57.4	68.2	72.2
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	6	6	<5	6	6	8
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.47	0.42	0.48	0.43	0.56	0.67
Cadmium	µg/g	1.2	0.5	<0.5	0.5	<0.5	0.8	0.9	<0.5
Chromium	µg/g	70	5	13	12	10	13	15	15
Cobalt	µg/g	21	0.8	5.4	5.5	4.5	5.5	6.4	5.0
Copper	µg/g	92	1.0	17.3	22.9	14.7	16.8	17.4	15.6
Lead	µg/g	120	1	38	39	34	78	100	50
Molybdenum	µg/g	2	0.5	0.6	0.7	0.8	0.7	0.8	1.2
Nickel	µg/g	82	1	11	11	9	12	12	11
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.50	<0.50	<0.50	0.63	0.66	0.62
Vanadium	µg/g	86	2.0	21.4	20.1	18.2	22.7	26.4	24.2
Zinc	µg/g	290	5	184	211	132	315	335	264
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.211	0.399	0.260	0.138	0.192	0.232
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	0.226	0.643	0.352	0.132	0.140	0.388
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.54	7.38	7.54	7.22	7.37	7.80

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2025-01-22

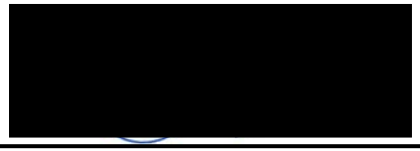
DATE REPORTED: 2025-01-30

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6472466-6472849 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5	25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472466	6472473	6472474	6472475	6472476	6472477	6472478	6472479
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	7.8	7.8	8.7	13.3	11.5	9.7	16.3	11.1
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		65	70	70	65	65	65	65	65
Acridine-d9	%	50-140		70	65	65	60	70	65	65	70
Terphenyl-d14	%	50-140		90	90	90	100	115	115	115	110

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472671	6472672	6472673	6472674	6472675	6472676	6472677	6472678
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		70	65	70	70	65	65	60	65
Acridine-d9	%	50-140		65	100	85	125	125	130	115	105
Terphenyl-d14	%	50-140		125	115	120	135	130	120	115	110

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472679	6472680	6472681	6472682	6472683	6472684	6472685	6472686
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	0.29	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	13.9	15.8	15.0	15.5	7.5	16.8	12.6	12.6
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		70	70	70	70	70	75	65	70
Acridine-d9	%	50-140		90	110	85	90	115	85	75	85
Terphenyl-d14	%	50-140		120	125	120	95	130	130	130	125

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62	25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472687	6472688	6472689	6472719	6472724	6472725	6472726	6472727
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	14.2	8.1	15.5	16.6	9.4	16.8	19.3	16.0
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		75	70	65	65	65	97	97	97
Acridine-d9	%	50-140		85	85	90	75	70	71	85	85
Terphenyl-d14	%	50-140		125	120	130	105	105	74	77	71

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472728	6472729	6472780	6472781	6472782	6472783	6472784	6472785
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		71	97	71	97	71	97	71	97
Acridine-d9	%	50-140		74	85	74	85	74	85	85	85
Terphenyl-d14	%	50-140		85	99	88	77	88	77	77	99

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472786	6472787	6472788	6472789	6472790	6472791	6472792	6472824
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7
Surrogate	Unit	Acceptable Limits									
Naphthalene-d8	%	50-140		75	75	75	75	70	65	65	70
Acridine-d9	%	50-140		70	95	90	115	115	80	110	65
Terphenyl-d14	%	50-140		90	105	85	100	70	75	90	85

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

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

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472829	6472835	6472840	6472845	6472848	6472849
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	16.3	16.8	16.1	17.3	17.1	11.3
Surrogate	Unit	Acceptable Limits							
Naphthalene-d8	%	50-140		70	70	70	70	88	70
Acridine-d9	%	50-140		60	85	85	85	74	90
Terphenyl-d14	%	50-140		80	70	65	85	88	70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6472466-6472849 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5	25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472466	6472473	6472474	6472475	6472476	6472477	6472478	6472479
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	56	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	56	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	7.8	7.8	8.7	13.3	11.5	9.7	16.3	11.1
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		99	106	103	103	100	102	103	102
Terphenyl	%	60-140		70	85	66	78	68	81	79	92

		SAMPLE DESCRIPTION:		25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472671	6472672	6472673	6472674	6472675	6472676	6472677	6472678
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	130	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	130	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	92	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		106	101	105	105	98	100	103	102
Terphenyl	%	60-140		85	71	76	68	86	90	75	69

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472679	6472680	6472681	6472682	6472683	6472684	6472685	6472686
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	103	<50	<50	59	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	102	<50	<50	59	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	113	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	13.9	15.8	15.0	15.5	7.5	16.8	12.6	12.6
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		108	102	99	105	103	110	105	102
Terphenyl	%	60-140		76	84	77	76	70	77	83	81

SAMPLE DESCRIPTION:				25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62	25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-17	2025-01-17	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472687	6472688	6472689	6472719	6472724	6472725	6472726	6472727
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	14.2	8.1	15.5	16.6	9.4	16.8	19.3	16.0
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		100	102	105	97	100	102	108	102
Terphenyl	%	60-140		83	76	76	73	78	69	72	68

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472728	6472729	6472780	6472781	6472782	6472783	6472784	6472785
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		103	103	103	98	107	106	104	105
Terphenyl	%	60-140		89	96	79	91	71	67	96	95

		SAMPLE DESCRIPTION:		25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472786	6472787	6472788	6472789	6472790	6472791	6472792	6472824
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7
Surrogate	Unit	Acceptable Limits									
Toluene-d8	%	50-140		104	100	102	102	104	104	104	105
Terphenyl	%	60-140		73	84	81	67	82	81	90	65

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472829	6472835	6472840	6472845	6472848	6472849
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	91	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	240	50	<50	<50	91	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	16.3	16.8	16.1	17.3	17.1	11.3
Surrogate	Unit	Acceptable Limits							
Toluene-d8	%	50-140		103	103	101	105	103	105
Terphenyl	%	60-140		70	66	92	73	70	74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6472466-6472849 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5	25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472466	6472473	6472474	6472475	6472476	6472477	6472478	6472479
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-39 @ 0-2.5	25-40 @ 7.5-10	25-41 @ 7.5-10	25-42 @ 2.5-5	25-43 @ 2.5-5	25-43 DUP	25-44 @ 7.5-10	25-45 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472466	6472473	6472474	6472475	6472476	6472477	6472478	6472479
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	7.8	7.8	8.7	13.3	11.5	9.7	16.3	11.1
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		99	106	103	103	100	102	103	102
4-Bromofluorobenzene	% Recovery	50-140		86	85	88	88	94	94	86	86

Certified By:

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ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472671	6472672	6472673	6472674	6472675	6472676	6472677	6472678
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-45 DUP	25-46 @ 5-7.5	25-47 @ 2.5-5	25-48 @ 2.5-5	25-49 @ 7.5-10	25-50 @ 5-7.5	25-51 @ 7.5-10	25-52 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472671	6472672	6472673	6472674	6472675	6472676	6472677	6472678
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.4	13.9	8.9	8.4	11.5	15.6	13.6	16.5
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		106	101	105	105	98	100	103	102
4-Bromofluorobenzene	% Recovery	50-140		90	93	92	94	90	95	87	95

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472679	6472680	6472681	6472682	6472683	6472684	6472685	6472686
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		DUP 25-52	25-53 @ 7.5-10	25-54 @ 5-7.5	25-55 @ 5-7.5	25-56 @ 5-7.5	25-57 @ 2.5-5	25-58 @ 2.5-5	25-59 @ 0-2.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17	2025-01-17
Parameter	Unit	G / S	RDL	6472679	6472680	6472681	6472682	6472683	6472684	6472685	6472686
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	13.9	15.8	15.0	15.5	7.5	16.8	12.6	12.6
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		108	102	99	105	103	110	105	102
4-Bromofluorobenzene	% Recovery	50-140		92	93	92	94	93	93	93	83

Certified By:

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PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62	25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-17	2025-01-17	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472687	6472688	6472689	6472719	6472724	6472725	6472726	6472727
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-60 @ 0-2.5	25-61 @ 2.5-5	25-62 @ 7.5-10	DUP 25-62	25-63 @ 7.5-10	25-64 @ 2.5-5	25-65 @ 5-7.5	25-66 @ 7.5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-17	2025-01-17	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472687	6472688	6472689	6472719	6472724	6472725	6472726	6472727
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	14.2	8.1	15.5	16.6	9.4	16.8	19.3	16.0
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		100	102	105	97	100	102	108	102
4-Bromofluorobenzene	% Recovery	50-140		91	88	88	91	90	93	94	93

Certified By:

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AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

SAMPLE DESCRIPTION:				25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472728	6472729	6472780	6472781	6472782	6472783	6472784	6472785
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-67 @ 7.5-10	25-68 @ 5-7.5	25-69 @ 7.5-10	25-70 @ 5-7.5	25-71 @ 2.5-5	25-72 @ 7.5-10	25-73 @ 5-7.5	25-74 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20
Parameter	Unit	G / S	RDL	6472728	6472729	6472780	6472781	6472782	6472783	6472784	6472785
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	22.3	14.8	14.6	13.1	11.8	4.4	19.9	15.8
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		103	103	103	98	107	106	104	105
4-Bromofluorobenzene	% Recovery	50-140		95	89	89	94	93	88	86	89

Certified By:

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PROJECT: 8368 BVD Puslinch Delineation

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ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472786	6472787	6472788	6472789	6472790	6472791	6472792	6472824
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-75 @ 5-7.5	25-76 @ 5-7.5	25-77 @ 7.5-10	25-78 @ 5-7.5	25-79 @ 7.5-10	25-80 @ 7.5-10	25-81 @ 7.5-10	25-82 @ 5-10
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-20	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472786	6472787	6472788	6472789	6472790	6472791	6472792	6472824
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	19.3	17.6	17.4	19.8	22.5	17.6	16.4	20.7
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		104	100	102	102	104	104	104	105
4-Bromofluorobenzene	% Recovery	50-140		89	86	91	90	90	90	93	94

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472829	6472835	6472840	6472845	6472848	6472849
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2025-01-22

DATE REPORTED: 2025-01-30

		SAMPLE DESCRIPTION:		25-83 @ 5-7.5	25-84 @ 5-7.5	25-85 @ 5-7.5	25-86 @ 7.5-10	25-87 @ 7.5-10	25-88 @ 5-7.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21	2025-01-21
Parameter	Unit	G / S	RDL	6472829	6472835	6472840	6472845	6472848	6472849
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	16.3	16.8	16.1	17.3	17.1	11.3
Surrogate	Unit	Acceptable Limits							
Toluene-d8	% Recovery	50-140		103	103	101	105	103	105
4-Bromofluorobenzene	% Recovery	50-140		91	93	94	95	92	90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON 406/19 T1 RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6472466-6472849 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

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Exceedance Summary

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
6472686	25-59 @ 0-2.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	µg/g	120	130
6472686	25-59 @ 0-2.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	349
6472726	25-65 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	336
6472780	25-69 @ 7.5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	341
6472781	25-70 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.722
6472781	25-70 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	3.07
6472784	25-73 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	292
6472785	25-74 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	350
6472786	25-75 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	340
6472789	25-78 @ 5-7.5	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.916
6472792	25-81 @ 7.5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	342
6472824	25-82 @ 5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	329
6472845	25-86 @ 7.5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	315
6472848	25-87 @ 7.5-10	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	335

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T240863
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Soil Analysis

RPT Date: Jan 30, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	6472466	6472466	<0.8	<0.8	NA	< 0.8	110%	70%	130%	84%	80%	120%	85%	70%	130%
Arsenic	6472466	6472466	8	8	2.2%	< 1	111%	70%	130%	87%	80%	120%	81%	70%	130%
Barium	6472466	6472466	45.4	46.9	3.2%	< 2.0	110%	70%	130%	99%	80%	120%	92%	70%	130%
Beryllium	6472466	6472466	1.1	1.0	NA	< 0.5	100%	70%	130%	95%	80%	120%	97%	70%	130%
Boron	6472466	6472466	25	24	NA	< 5	88%	70%	130%	91%	80%	120%	75%	70%	130%
Boron (Hot Water Soluble)	6472886		0.37	0.36	NA	< 0.10	107%	60%	140%	99%	70%	130%	94%	60%	140%
Cadmium	6472466	6472466	<0.5	<0.5	NA	< 0.5	86%	70%	130%	103%	80%	120%	90%	70%	130%
Chromium	6472466	6472466	30	31	3.0%	< 5	105%	70%	130%	91%	80%	120%	95%	70%	130%
Cobalt	6472466	6472466	17.0	16.7	1.5%	< 0.8	102%	70%	130%	88%	80%	120%	91%	70%	130%
Copper	6472466	6472466	30.7	31.9	3.7%	< 1.0	99%	70%	130%	96%	80%	120%	95%	70%	130%
Lead	6472466	6472466	19	18	5.7%	< 1	113%	70%	130%	94%	80%	120%	97%	70%	130%
Molybdenum	6472466	6472466	0.6	0.5	NA	< 0.5	117%	70%	130%	99%	80%	120%	96%	70%	130%
Nickel	6472466	6472466	35	34	3.1%	< 1	100%	70%	130%	89%	80%	120%	86%	70%	130%
Selenium	6472466	6472466	<0.8	<0.8	NA	< 0.8	99%	70%	130%	99%	80%	120%	92%	70%	130%
Silver	6472466	6472466	<0.5	<0.5	NA	< 0.5	113%	70%	130%	92%	80%	120%	92%	70%	130%
Thallium	6472466	6472466	<0.5	<0.5	NA	< 0.5	110%	70%	130%	97%	80%	120%	100%	70%	130%
Uranium	6472466	6472466	0.74	0.72	NA	< 0.50	110%	70%	130%	87%	80%	120%	93%	70%	130%
Vanadium	6472466	6472466	39.5	40.5	2.6%	< 2.0	125%	70%	130%	85%	80%	120%	92%	70%	130%
Zinc	6472466	6472466	93	94	0.7%	< 5	101%	70%	130%	98%	80%	120%	112%	70%	130%
Chromium, Hexavalent	6472466	6472466	<0.2	<0.2	NA	< 0.2	108%	70%	130%	88%	80%	120%	83%	70%	130%
Cyanide, WAD	6472897		<0.040	<0.040	NA	< 0.040	91%	70%	130%	99%	80%	120%	101%	70%	130%
Mercury	6472466	6472466	<0.10	<0.10	NA	< 0.10	114%	70%	130%	100%	80%	120%	99%	70%	130%
Electrical Conductivity (2:1)	6470400		0.456	0.437	4.2%	< 0.005	103%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6472466	6472466	0.674	0.677	0.4%	NA									
pH, 2:1 CaCl2 Extraction	6472675	6472675	7.69	7.66	0.4%	NA	100%	80%	120%						

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

O. Reg. 153(511) - Metals & Inorganics (Soil)															
Boron (Hot Water Soluble)	6472466	6472466	1.50	1.49	0.5%	< 0.10	107%	60%	140%	99%	70%	130%	97%	60%	140%
Chromium, Hexavalent	6472683	6472683	<0.2	<0.2	NA	< 0.2	109%	70%	130%	88%	80%	120%	84%	70%	130%
Cyanide, WAD	6472787	6472787	<0.040	<0.040	NA	< 0.040	91%	70%	130%	92%	80%	120%	87%	70%	130%
Electrical Conductivity (2:1)	6472466	6472466	0.220	0.194	12.9%	< 0.005	95%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6472683	6472683	0.431	0.372	14.5%	NA									

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

O. Reg. 153(511) - Metals & Inorganics (Soil)

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Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T240863
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Soil Analysis (Continued)

RPT Date: Jan 30, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Boron (Hot Water Soluble)	6472683	6472683	0.18	0.16	NA	< 0.10	106%	60%	140%	99%	70%	130%	95%	60%	140%
Chromium, Hexavalent	6472786	6472786	<0.2	<0.2	NA	< 0.2	106%	70%	130%	87%	80%	120%	86%	70%	130%
Cyanide, WAD	6472674	6472674	<0.040	<0.040	NA	< 0.040	101%	70%	130%	92%	80%	120%	101%	70%	130%
Electrical Conductivity (2:1)	6472683	6472683	0.179	0.198	10.4%	< 0.005	94%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6472786	6472786	0.720	0.694	3.7%	NA									

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

O. Reg. 153(511) - Metals & Inorganics (Soil)

Boron (Hot Water Soluble)	6472786	6472786	0.45	0.44	NA	< 0.10	106%	60%	140%	99%	70%	130%	92%	60%	140%
Electrical Conductivity (2:1)	6472786	6472786	0.311	0.284	9.0%	< 0.005	97%	80%	120%						

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

O. Reg. 153(511) - Metals & Inorganics (Soil)

Antimony	6472683	6472683	<0.8	<0.8	NA	< 0.8	111%	70%	130%	97%	80%	120%	78%	70%	130%
Arsenic	6472683	6472683	3	3	NA	< 1	120%	70%	130%	83%	80%	120%	81%	70%	130%
Barium	6472683	6472683	23.9	23.6	1.3%	< 2.0	105%	70%	130%	91%	80%	120%	91%	70%	130%
Beryllium	6472683	6472683	<0.5	<0.5	NA	< 0.5	115%	70%	130%	112%	80%	120%	122%	70%	130%
Boron	6472683	6472683	9	8	NA	< 5	98%	70%	130%	106%	80%	120%	105%	70%	130%
Cadmium	6472683	6472683	<0.5	<0.5	NA	< 0.5	96%	70%	130%	101%	80%	120%	87%	70%	130%
Chromium	6472683	6472683	9	9	NA	< 5	108%	70%	130%	108%	80%	120%	89%	70%	130%
Cobalt	6472683	6472683	4.1	3.8	NA	< 0.8	107%	70%	130%	90%	80%	120%	90%	70%	130%
Copper	6472683	6472683	16.1	15.7	2.6%	< 1.0	108%	70%	130%	104%	80%	120%	80%	70%	130%
Lead	6472683	6472683	25	26	1.3%	< 1	97%	70%	130%	95%	80%	120%	73%	70%	130%
Molybdenum	6472683	6472683	0.6	0.6	NA	< 0.5	112%	70%	130%	103%	80%	120%	94%	70%	130%
Nickel	6472683	6472683	7	7	2.9%	< 1	114%	70%	130%	96%	80%	120%	91%	70%	130%
Selenium	6472683	6472683	<0.8	<0.8	NA	< 0.8	77%	70%	130%	96%	80%	120%	95%	70%	130%
Silver	6472683	6472683	<0.5	<0.5	NA	< 0.5	99%	70%	130%	86%	80%	120%	83%	70%	130%
Thallium	6472683	6472683	<0.5	<0.5	NA	< 0.5	97%	70%	130%	87%	80%	120%	86%	70%	130%
Uranium	6472683	6472683	<0.50	<0.50	NA	< 0.50	92%	70%	130%	93%	80%	120%	78%	70%	130%
Vanadium	6472683	6472683	16.3	14.8	9.3%	< 2.0	130%	70%	130%	83%	80%	120%	87%	70%	130%
Zinc	6472683	6472683	235	228	3.2%	< 5	115%	70%	130%	108%	80%	120%	NA	70%	130%
Mercury	6472683	6472683	<0.10	<0.10	NA	< 0.10	100%	70%	130%	98%	80%	120%	101%	70%	130%

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

Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

O. Reg. 153(511) - Metals & Inorganics (Soil)

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T240863
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Soil Analysis (Continued)

RPT Date: Jan 30, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Antimony	6472786	6472786	<0.8	<0.8	NA	< 0.8	137%	70%	130%	82%	80%	120%	83%	70%	130%
Arsenic	6472786	6472786	7	7	11.3%	< 1	118%	70%	130%	91%	80%	120%	93%	70%	130%
Barium	6472786	6472786	71.8	66.2	8.2%	< 2.0	114%	70%	130%	99%	80%	120%	108%	70%	130%
Beryllium	6472786	6472786	0.6	<0.5	NA	< 0.5	86%	70%	130%	95%	80%	120%	94%	70%	130%
Boron	6472786	6472786	7	7	NA	< 5	86%	70%	130%	81%	80%	120%	75%	70%	130%
Cadmium	6472786	6472786	0.8	0.8	NA	< 0.5	119%	70%	130%	93%	80%	120%	102%	70%	130%
Chromium	6472786	6472786	17	15	NA	< 5	101%	70%	130%	92%	80%	120%	87%	70%	130%
Cobalt	6472786	6472786	7.3	6.3	15.6%	< 0.8	105%	70%	130%	92%	80%	120%	91%	70%	130%
Copper	6472786	6472786	25.6	28.4	10.4%	< 1.0	102%	70%	130%	94%	80%	120%	NA	70%	130%
Lead	6472786	6472786	77	72	6.5%	< 1	110%	70%	130%	98%	80%	120%	NA	70%	130%
Molybdenum	6472786	6472786	0.8	0.7	NA	< 0.5	122%	70%	130%	95%	80%	120%	101%	70%	130%
Nickel	6472786	6472786	15	13	15.3%	< 1	106%	70%	130%	92%	80%	120%	87%	70%	130%
Selenium	6472786	6472786	<0.8	<0.8	NA	< 0.8	103%	70%	130%	95%	80%	120%	99%	70%	130%
Silver	6472786	6472786	<0.5	<0.5	NA	< 0.5	109%	70%	130%	93%	80%	120%	97%	70%	130%
Thallium	6472786	6472786	<0.5	<0.5	NA	< 0.5	104%	70%	130%	NA	80%	120%	96%	70%	130%
Uranium	6472786	6472786	0.71	0.66	NA	< 0.50	109%	70%	130%	93%	80%	120%	100%	70%	130%
Vanadium	6472786	6472786	28.2	25.3	11.1%	< 2.0	111%	70%	130%	91%	80%	120%	89%	70%	130%
Zinc	6472786	6472786	340	297	13.5%	< 5	112%	70%	130%	94%	80%	120%	NA	70%	130%
Mercury	6472786	6472786	<0.10	<0.10	NA	< 0.10	119%	70%	130%	100%	80%	120%	101%	70%	130%

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

Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

Certified By:

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T240863
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis

RPT Date: Jan 30, 2025

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 to C10)	6472672	6472672	<5	<5	NA	< 5	97%	60%	140%	81%	60%	140%	98%	60%	140%
F2 (C10 to C16)	6472466	6472466	< 10	< 10	NA	< 10	105%	60%	140%	101%	60%	140%	116%	60%	140%
F2 (C10 to C16) minus Naphthalene	6472466	6472466	< 10	< 10	NA	< 10									
F3 (C16 to C34)	6472466	6472466	< 50	< 50	NA	< 50	113%	60%	140%	120%	60%	140%	118%	60%	140%
F3 (C16 to C34) minus PAHs	6472466	6472466	< 50	< 50	NA	< 50									
F4 (C34 to C50)	6472466	6472466	< 50	< 50	NA	< 50	81%	60%	140%	90%	60%	140%	84%	60%	140%
Terphenyl	6472466	6472466	< 1	< 1	0.0%	< 1									
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6472466	6472466	<0.05	<0.05	NA	< 0.05	106%	50%	140%	93%	50%	140%	88%	50%	140%
Acenaphthylene	6472466	6472466	<0.05	<0.05	NA	< 0.05	98%	50%	140%	88%	50%	140%	93%	50%	140%
Acenaphthene	6472466	6472466	<0.05	<0.05	NA	< 0.05	101%	50%	140%	78%	50%	140%	75%	50%	140%
Fluorene	6472466	6472466	<0.05	<0.05	NA	< 0.05	100%	50%	140%	73%	50%	140%	78%	50%	140%
Phenanthrene	6472466	6472466	<0.05	<0.05	NA	< 0.05	102%	50%	140%	75%	50%	140%	85%	50%	140%
Anthracene	6472466	6472466	<0.05	<0.05	NA	< 0.05	89%	50%	140%	98%	50%	140%	100%	50%	140%
Fluoranthene	6472466	6472466	<0.05	<0.05	NA	< 0.05	90%	50%	140%	85%	50%	140%	98%	50%	140%
Pyrene	6472466	6472466	<0.05	<0.05	NA	< 0.05	90%	50%	140%	80%	50%	140%	95%	50%	140%
Benzo(a)anthracene	6472466	6472466	<0.05	<0.05	NA	< 0.05	98%	50%	140%	75%	50%	140%	98%	50%	140%
Chrysene	6472466	6472466	<0.05	<0.05	NA	< 0.05	123%	50%	140%	83%	50%	140%	108%	50%	140%
Benzo(b)fluoranthene	6472466	6472466	<0.05	<0.05	NA	< 0.05	71%	50%	140%	88%	50%	140%	103%	50%	140%
Benzo(k)fluoranthene	6472466	6472466	<0.05	<0.05	NA	< 0.05	73%	50%	140%	75%	50%	140%	95%	50%	140%
Benzo(a)pyrene	6472466	6472466	<0.05	<0.05	NA	< 0.05	76%	50%	140%	78%	50%	140%	98%	50%	140%
Indeno(1,2,3-cd)pyrene	6472466	6472466	<0.05	<0.05	NA	< 0.05	81%	50%	140%	90%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene	6472466	6472466	<0.05	<0.05	NA	< 0.05	70%	50%	140%	93%	50%	140%	95%	50%	140%
Benzo(g,h,i)perylene	6472466	6472466	<0.05	<0.05	NA	< 0.05	75%	50%	140%	78%	50%	140%	93%	50%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	64%	50%	140%	72%	50%	140%	83%	50%	140%
Vinyl Chloride	6472672	6472672	<0.02	<0.02	NA	< 0.02	112%	50%	140%	94%	50%	140%	97%	50%	140%
Bromomethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	103%	50%	140%
Trichlorofluoromethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	69%	50%	140%	80%	50%	140%	92%	50%	140%
Acetone	6472672	6472672	<0.50	<0.50	NA	< 0.50	87%	50%	140%	96%	50%	140%	92%	50%	140%
1,1-Dichloroethylene	6472672	6472672	<0.05	<0.05	NA	< 0.05	61%	50%	140%	86%	60%	130%	79%	50%	140%
Methylene Chloride	6472672	6472672	<0.05	<0.05	NA	< 0.05	87%	50%	140%	91%	60%	130%	90%	50%	140%
Trans- 1,2-Dichloroethylene	6472672	6472672	<0.05	<0.05	NA	< 0.05	95%	50%	140%	61%	60%	130%	79%	50%	140%
Methyl tert-butyl Ether	6472672	6472672	<0.05	<0.05	NA	< 0.05	75%	50%	140%	80%	60%	130%	74%	50%	140%
1,1-Dichloroethane	6472672	6472672	<0.02	<0.02	NA	< 0.02	67%	50%	140%	69%	60%	130%	60%	50%	140%
Methyl Ethyl Ketone	6472672	6472672	<0.50	<0.50	NA	< 0.50	105%	50%	140%	87%	50%	140%	116%	50%	140%
Cis- 1,2-Dichloroethylene	6472672	6472672	<0.02	<0.02	NA	< 0.02	65%	50%	140%	62%	60%	130%	80%	50%	140%

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SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jan 30, 2025

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Chloroform	6472672	6472672	<0.04	<0.04	NA	< 0.04	98%	50%	140%	84%	60%	130%	90%	50%	140%
1,2-Dichloroethane	6472672	6472672	<0.03	<0.03	NA	< 0.03	76%	50%	140%	81%	60%	130%	80%	50%	140%
1,1,1-Trichloroethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	70%	50%	140%	70%	60%	130%	67%	50%	140%
Carbon Tetrachloride	6472672	6472672	<0.05	<0.05	NA	< 0.05	75%	50%	140%	70%	60%	130%	98%	50%	140%
Benzene	6472672	6472672	<0.02	<0.02	NA	< 0.02	67%	50%	140%	66%	60%	130%	93%	50%	140%
1,2-Dichloropropane	6472672	6472672	<0.03	<0.03	NA	< 0.03	96%	50%	140%	62%	60%	130%	67%	50%	140%
Trichloroethylene	6472672	6472672	<0.03	<0.03	NA	< 0.03	88%	50%	140%	73%	60%	130%	95%	50%	140%
Bromodichloromethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	65%	50%	140%	69%	60%	130%	96%	50%	140%
Methyl Isobutyl Ketone	6472672	6472672	<0.50	<0.50	NA	< 0.50	93%	50%	140%	97%	50%	140%	87%	50%	140%
1,1,2-Trichloroethane	6472672	6472672	<0.04	<0.04	NA	< 0.04	82%	50%	140%	76%	60%	130%	77%	50%	140%
Toluene	6472672	6472672	<0.05	<0.05	NA	< 0.05	77%	50%	140%	66%	60%	130%	84%	50%	140%
Dibromochloromethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	69%	50%	140%	80%	60%	130%	63%	50%	140%
Ethylene Dibromide	6472672	6472672	<0.04	<0.04	NA	< 0.04	88%	50%	140%	98%	60%	130%	83%	50%	140%
Tetrachloroethylene	6472672	6472672	<0.05	<0.05	NA	< 0.05	87%	50%	140%	90%	60%	130%	78%	50%	140%
1,1,1,2-Tetrachloroethane	6472672	6472672	<0.04	<0.04	NA	< 0.04	72%	50%	140%	95%	60%	130%	75%	50%	140%
Chlorobenzene	6472672	6472672	<0.05	<0.05	NA	< 0.05	90%	50%	140%	68%	60%	130%	89%	50%	140%
Ethylbenzene	6472672	6472672	<0.05	<0.05	NA	< 0.05	71%	50%	140%	81%	60%	130%	75%	50%	140%
m & p-Xylene	6472672	6472672	<0.05	<0.05	NA	< 0.05	84%	50%	140%	102%	60%	130%	92%	50%	140%
Bromoform	6472672	6472672	<0.05	<0.05	NA	< 0.05	63%	50%	140%	69%	60%	130%	83%	50%	140%
Styrene	6472672	6472672	<0.05	<0.05	NA	< 0.05	88%	50%	140%	64%	60%	130%	91%	50%	140%
1,1,2,2-Tetrachloroethane	6472672	6472672	<0.05	<0.05	NA	< 0.05	68%	50%	140%	93%	60%	130%	60%	50%	140%
o-Xylene	6472672	6472672	<0.05	<0.05	NA	< 0.05	80%	50%	140%	61%	60%	130%	91%	50%	140%
1,3-Dichlorobenzene	6472672	6472672	<0.05	<0.05	NA	< 0.05	98%	50%	140%	62%	60%	130%	92%	50%	140%
1,4-Dichlorobenzene	6472672	6472672	<0.05	<0.05	NA	< 0.05	99%	50%	140%	60%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	6472672	6472672	<0.05	<0.05	NA	< 0.05	77%	50%	140%	60%	60%	130%	89%	50%	140%
n-Hexane	6472672	6472672	<0.05	<0.05	NA	< 0.05	65%	50%	140%	100%	60%	130%	75%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 to C10)	6472849	6472849	<5	<5	NA	< 5	118%	60%	140%	95%	60%	140%	80%	60%	140%
F2 (C10 to C16)	6472683	6472683	< 10	< 10	NA	< 10	115%	60%	140%	91%	60%	140%	105%	60%	140%
F2 (C10 to C16) minus Naphthalene	6472683	6472683	< 10	< 10	NA	< 10									
F3 (C16 to C34)	6472683	6472683	< 50	< 50	NA	< 50	111%	60%	140%	110%	60%	140%	126%	60%	140%
F3 (C16 to C34) minus PAHs	6472683	6472683	< 50	< 50	NA	< 50									
F4 (C34 to C50)	6472683	6472683	< 50	< 50	NA	< 50	84%	60%	140%	109%	60%	140%	86%	60%	140%
Terphenyl	6472683	6472683	< 1	< 1	0.0%	< 1									
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F2 (C10 to C16)	6472786	6472786	< 10	< 10	NA	< 10	115%	60%	140%	91%	60%	140%	86%	60%	140%
F3 (C16 to C34)	6472786	6472786	< 50	< 50	NA	< 50	111%	60%	140%	110%	60%	140%	112%	60%	140%
F4 (C34 to C50)	6472786	6472786	< 50	< 50	NA	< 50	84%	60%	140%	109%	60%	140%	109%	60%	140%

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SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jan 30, 2025

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6472786	6472786	<0.05	<0.05	NA	< 0.05	95%	50%	140%	75%	50%	140%	88%	50%	140%
Acenaphthylene	6472786	6472786	<0.05	<0.05	NA	< 0.05	104%	50%	140%	88%	50%	140%	83%	50%	140%
Acenaphthene	6472786	6472786	<0.05	<0.05	NA	< 0.05	102%	50%	140%	103%	50%	140%	83%	50%	140%
Fluorene	6472786	6472786	<0.05	<0.05	NA	< 0.05	111%	50%	140%	103%	50%	140%	80%	50%	140%
Phenanthrene	6472786	6472786	<0.05	<0.05	NA	< 0.05	114%	50%	140%	105%	50%	140%	73%	50%	140%
Anthracene	6472786	6472786	<0.05	<0.05	NA	< 0.05	113%	50%	140%	93%	50%	140%	78%	50%	140%
Fluoranthene	6472786	6472786	<0.05	<0.05	NA	< 0.05	117%	50%	140%	103%	50%	140%	78%	50%	140%
Pyrene	6472786	6472786	<0.05	<0.05	NA	< 0.05	117%	50%	140%	105%	50%	140%	75%	50%	140%
Benzo(a)anthracene	6472786	6472786	<0.05	<0.05	NA	< 0.05	105%	50%	140%	88%	50%	140%	85%	50%	140%
Chrysene	6472786	6472786	<0.05	<0.05	NA	< 0.05	122%	50%	140%	98%	50%	140%	80%	50%	140%
Benzo(b)fluoranthene	6472786	6472786	<0.05	<0.05	NA	< 0.05	101%	50%	140%	100%	50%	140%	80%	50%	140%
Benzo(k)fluoranthene	6472786	6472786	<0.05	<0.05	NA	< 0.05	104%	50%	140%	80%	50%	140%	73%	50%	140%
Benzo(a)pyrene	6472786	6472786	<0.05	<0.05	NA	< 0.05	101%	50%	140%	75%	50%	140%	90%	50%	140%
Indeno(1,2,3-cd)pyrene	6472786	6472786	<0.05	<0.05	NA	< 0.05	103%	50%	140%	95%	50%	140%	90%	50%	140%
Dibenz(a,h)anthracene	6472786	6472786	<0.05	<0.05	NA	< 0.05	102%	50%	140%	75%	50%	140%	73%	50%	140%
Benzo(g,h,i)perylene	6472786	6472786	<0.05	<0.05	NA	< 0.05	113%	50%	140%	85%	50%	140%	85%	50%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	99%	50%	140%	106%	50%	140%	90%	50%	140%
Vinyl Chloride	6472849	6472849	<0.02	<0.02	NA	< 0.02	110%	50%	140%	112%	50%	140%	99%	50%	140%
Bromomethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	118%	50%	140%	104%	50%	140%	108%	50%	140%
Trichlorofluoromethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	109%	50%	140%	101%	50%	140%	94%	50%	140%
Acetone	6472849	6472849	<0.50	<0.50	NA	< 0.50	101%	50%	140%	98%	50%	140%	87%	50%	140%
1,1-Dichloroethylene	6472849	6472849	<0.05	<0.05	NA	< 0.05	99%	50%	140%	116%	60%	130%	85%	50%	140%
Methylene Chloride	6472849	6472849	<0.05	<0.05	NA	< 0.05	91%	50%	140%	106%	60%	130%	92%	50%	140%
Trans- 1,2-Dichloroethylene	6472849	6472849	<0.05	<0.05	NA	< 0.05	102%	50%	140%	95%	60%	130%	92%	50%	140%
Methyl tert-butyl Ether	6472849	6472849	<0.05	<0.05	NA	< 0.05	80%	50%	140%	89%	60%	130%	62%	50%	140%
1,1-Dichloroethane	6472849	6472849	<0.02	<0.02	NA	< 0.02	87%	50%	140%	83%	60%	130%	72%	50%	140%
Methyl Ethyl Ketone	6472849	6472849	<0.50	<0.50	NA	< 0.50	99%	50%	140%	100%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	6472849	6472849	<0.02	<0.02	NA	< 0.02	91%	50%	140%	98%	60%	130%	87%	50%	140%
Chloroform	6472849	6472849	<0.04	<0.04	NA	< 0.04	83%	50%	140%	88%	60%	130%	81%	50%	140%
1,2-Dichloroethane	6472849	6472849	<0.03	<0.03	NA	< 0.03	88%	50%	140%	94%	60%	130%	97%	50%	140%
1,1,1-Trichloroethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	88%	50%	140%	83%	60%	130%	67%	50%	140%
Carbon Tetrachloride	6472849	6472849	<0.05	<0.05	NA	< 0.05	97%	50%	140%	95%	60%	130%	94%	50%	140%
Benzene	6472849	6472849	<0.02	<0.02	NA	< 0.02	93%	50%	140%	100%	60%	130%	79%	50%	140%
1,2-Dichloropropane	6472849	6472849	<0.03	<0.03	NA	< 0.03	69%	50%	140%	99%	60%	130%	74%	50%	140%
Trichloroethylene	6472849	6472849	<0.03	<0.03	NA	< 0.03	92%	50%	140%	94%	60%	130%	74%	50%	140%
Bromodichloromethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	76%	50%	140%	81%	60%	130%	65%	50%	140%

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25T240863
PROJECT: 8368 BVD Puslinch Delineation
ATTENTION TO: Ali Rasoul
SAMPLING SITE:7504 McLean Rd., Puslinch, ON
SAMPLED BY:E.F.

Trace Organics Analysis (Continued)

RPT Date: Jan 30, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl Isobutyl Ketone	6472849	6472849	<0.50	<0.50	NA	< 0.50	83%	50%	140%	109%	50%	140%	73%	50%	140%
1,1,2-Trichloroethane	6472849	6472849	<0.04	<0.04	NA	< 0.04	74%	50%	140%	94%	60%	130%	85%	50%	140%
Toluene	6472849	6472849	<0.05	<0.05	NA	< 0.05	89%	50%	140%	80%	60%	130%	89%	50%	140%
Dibromochloromethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	69%	50%	140%	82%	60%	130%	75%	50%	140%
Ethylene Dibromide	6472849	6472849	<0.04	<0.04	NA	< 0.04	91%	50%	140%	93%	60%	130%	76%	50%	140%
Tetrachloroethylene	6472849	6472849	<0.05	<0.05	NA	< 0.05	91%	50%	140%	94%	60%	130%	77%	50%	140%
1,1,1,2-Tetrachloroethane	6472849	6472849	<0.04	<0.04	NA	< 0.04	66%	50%	140%	67%	60%	130%	62%	50%	140%
Chlorobenzene	6472849	6472849	<0.05	<0.05	NA	< 0.05	95%	50%	140%	97%	60%	130%	78%	50%	140%
Ethylbenzene	6472849	6472849	<0.05	<0.05	NA	< 0.05	77%	50%	140%	94%	60%	130%	86%	50%	140%
m & p-Xylene	6472849	6472849	<0.05	<0.05	NA	< 0.05	95%	50%	140%	108%	60%	130%	105%	50%	140%
Bromoform	6472849	6472849	<0.05	<0.05	NA	< 0.05	84%	50%	140%	94%	60%	130%	94%	50%	140%
Styrene	6472849	6472849	<0.05	<0.05	NA	< 0.05	99%	50%	140%	95%	60%	130%	91%	50%	140%
1,1,2,2-Tetrachloroethane	6472849	6472849	<0.05	<0.05	NA	< 0.05	67%	50%	140%	85%	60%	130%	81%	50%	140%
o-Xylene	6472849	6472849	<0.05	<0.05	NA	< 0.05	74%	50%	140%	91%	60%	130%	116%	50%	140%
1,3-Dichlorobenzene	6472849	6472849	<0.05	<0.05	NA	< 0.05	78%	50%	140%	87%	60%	130%	99%	50%	140%
1,4-Dichlorobenzene	6472849	6472849	<0.05	<0.05	NA	< 0.05	78%	50%	140%	97%	60%	130%	88%	50%	140%
1,2-Dichlorobenzene	6472849	6472849	<0.05	<0.05	NA	< 0.05	67%	50%	140%	91%	60%	130%	79%	50%	140%
n-Hexane	6472849	6472849	<0.05	<0.05	NA	< 0.05	69%	50%	140%	88%	60%	130%	68%	50%	140%

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

Certified By:

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http://www.agatlabs.com

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

RPT Date: Jan 30, 2025

PARAMETER	Sample Id	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)										
Antimony	6472786	137%	70%	130%	82%	80%	120%	83%	70%	130%

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

Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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

Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25T240863

PROJECT: 8368 BVD Puslinch Delineation

ATTENTION TO: Ali Rasoul

SAMPLING SITE:7504 McLean Rd., Puslinch, ON

SAMPLED BY:E.F.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories
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Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Laboratory Use Only
Work Order #: 25T240863
Cooler Quantity: 4 @ 9
Arrival Temperatures: See attached
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: Loose Ice

Report Information:
Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 (Indicate One)
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
____ (Indicate One)

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

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

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply): ____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
25-39 @ 0-2.5	1/17/25		4	S		
25-40 @ 7.5-10	1/17/25		4	S		
25-41 @ 7.5-10	1/17/25		4	S		
25-42 @ 2.5-5	1/17/25		4	S		
25-43 @ 2.5-5	1/17/25		4	S		
25-43 DUP	1/17/25		4	S		
25-44 @ 7.5-10	1/17/25		4	S		
25-45 @ 7.5-10	1/17/25		4	S		
25-45 DUP	1/17/25		4	S		
25-46 @ 5-7.5	1/17/25		4	S		
25-47 @ 2.5-5	1/17/25		4	S		

Field Filtered - Metals, Hg, CrVI

O. Reg 153 — Metals and Inorganics; ☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides); ORPs: ☐ B-HWS ☐ Cr ☐ CN⁻ ☐ Cr⁶⁺ ☑ EC ☐ FOC ☐ Hg ☑ pH ☑ SAR; Full Metals Scan; Regulation/Custom Metals; Nutrients: ☐ TP ☐ NH_4 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2; Volatiles: ☐ VOC ☐ BTEX ☐ THM; PHCs F1 - F4; ABNs; PAHs; PCBs: ☐ Total ☐ Aroclors; Organochlorine Pesticides; TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs; Sewer Use; Mctals Soil 93-101; Mctals Water 93-196; CCME F1-F4/VOCs Soil 91-248; CCME F1-F4/VOCs Water 91-249; CCME F1-F4/ BTEX Water 91-315; Sieve & texture (75 Micron)

| | | |

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Laboratory Use Only

Work Order #:

Cooler Quantity: 4 lg

Arrival Temperatures: see pg 1

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

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

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

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

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

Project Information:

Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
25-48 @ 2.5-5	1/17/25		4	S		
25-49 @ 7-5.10	1/17/25		4	S		
25-50 @ 5-7.5	1/17/25		4	S		
25-51 @ 7.5-10	1/17/25		4	S		
25-52 @ 7.5-10	1/17/25		4	S		
DUP 25-52	1/17/25		4	S		
25-53 @ 7.5-10	1/17/25		4	S		
25-54 @ 5-7.5	1/17/25		4	S		
25-55 @ 5-7.5	1/17/25		4	S		
25-56 @ 5-7.5	1/17/25		4	S		
25-57 @ 2.5-5	1/17/25		4	S		

Field Filtered - Metals, Hg, CrVI

O. Reg 153

Metals and Inorganics	☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☑ EC ☐ FOC ☐ Hg ☑ pH ☑ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
☑		☑							☑							☑			
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☑		☑							☑							☑			

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsom [redacted]	1/22/25	11am	[redacted]	Jan 22	1:30pm
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 2 of 5

N°:

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Project Information:

Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

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

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

Sample Matrix Legend

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

Laboratory Use Only

Work Order #:
Cooler Quantity: 4 19
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI	O. Reg 153																								
								Metals and Inorganics	☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cr ☐ CN ☑ Cr⁶⁺ ☑ EC ☐ FOC ☐ Hg ☑ pH ☑ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☑ M&I ☑ VOCs ☑ ABNs ☑ B(a)P ☑ PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
25-58 @ 2.5-5	1/17/25		4	S				☑		☑						☑				☑					☑						
25-59 @ 0-2.5	1/17/25		4	S				☑		☑						☑				☑					☑						
25-60 @ 0-2.5	1/17/25		4	S				☑		☑						☑				☑					☑						
25-61 @ 2.5-5	1/17/25		4	S				☑		☑						☑				☑					☑						
25-62 @ 7.5-10	1/20/25		4	S				☑		☑						☑				☑					☑						
DUP 25-62	1/20/25		3	S				☑		☑						☑				☑					☑						
25-63 @ 7.5-10	1/20/25		4	S				☑		☑						☑				☑					☑						
25-64 @ 2.5-5	1/20/25		4	S				☑		☑						☑				☑					☑						
25-65 @ 5-7.5	1/20/25		4	S				☑		☑						☑				☑					☑						
25-66 @ 7.5-10	1/20/25		4	S				☑		☑						☑				☑					☑						
25-67 @ 7.5-10	1/20/25		4	S				☑		☑						☑				☑					☑						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsom [redacted]	1/22/25	11am	[redacted]	Jan 22	1:30pm
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 3 of 5
N°:

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Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, ON
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aacnvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Project Information:

Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

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

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

Laboratory Use Only

Work Order #:
Cooler Quantity: 4 9
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
25-68 @ 5-7.5	1/20/25		4	S		
25-69 @ 7.5-10	1/20/25		3	S		
25-70 @ 5-7.5	1/20/25		3	S		
25-71 @ 2.5-5	1/20/25		3	S		
25-72 @ 7.5-10	1/20/25		3	S		
25-73 @ 5-7.5	1/20/25		3	S		
25-74 @ 5-7.5	1/20/25		3	S		
25-75 @ 5-7.5	1/20/25		3	S		
25-76 @ 5-7.5	1/20/25		3	S		
25-77 @ 7.5-10	1/20/25		3	S		
25-78 @ 5-7.5	1/20/25		3	S		

| Metals and Inorganics | Field Filtered - Metals, Hg, CrVI | O. Reg 153 | | |

AGAT Laboratories

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Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

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Contact: Dr. Ali Rasoul
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1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@"; tdemers@" ; ckennedy@"

Project Information:

Project: 8368 BVD Puslinch Delineation
Site Location: 7504 McLean Rd., Puslinch, ON
Sampled By: E.F.
AGAT Quote #: 16288129079 PO: 8368
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☑ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

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

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

Laboratory Use Only

Work Order #:
Cooler Quantity: 4 1a 1
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
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Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	O. Reg 153: All Metals / 153 Metals (excl. Hydrides) / Hydride Metals / 153 Metals (incl. Hydrides)	O. Reg 153: ORPs: B-HWS, Cl, CN, Cr6+, EC, FOC, Hg, pH, SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: TP, NH3, TKN, NO3, NO2, NO3+NO2	Volatiles: VOC, BTEX, THM	PHCs F1 - F4	ABNs	PAHs	PCBs: Total, Aroclors	Organochlorine Pesticides	TCLP: M&I, VOCs, ABNs, B(a)P, PCBs	Sewer Use	Metals Soil 93-101	Metals Water 93-196	CCME F1-F4/VOCs Soil 91-248	CCME F1-F4/VOCs Water 91-249	CCME F1-F4/ BTEX Water 91-315	Sieve & texture (75 Micron)
25-79 @ 7.5-10	1/20/25		3	S			☑		☑							☑							☑			
25-80 @ 7.5-10	1/20/25		3	S			☑		☑							☑							☑			
25-81 @ 7.5-10	1/21/25		3	S			☑		☑							☑							☑			
25-82 @ 5-10	1/21/25		3	S			☑		☑							☑							☑			
25-83 @ 5-7.5	1/21/25		3	S			☑		☑							☑							☑			
25-84 @ 5-7.5	1/21/25		3	S			☑		☑							☑							☑			
25-85 @ 5-7.5	1/21/25		3	S			☑		☑							☑							☑			
25-86 @ 7.5-10	1/21/25		3	S			☑		☑							☑							☑			
25-87 @ 7.5-10	1/21/25		3	S			☑		☑							☑							☑			
25-88 @ 5-7.5	1/21/25		3	S			☑		☑							☑							☑			

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulson [redacted]	1/22/25	11am	[redacted]	Jan 22	1:30p
Samples Relinqu [redacted]	Date	Time	[redacted]	Date	Time
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 5 of 5

AGAT Laboratories

Sample Temperature Log

Client: A & A

COC# or Work Order #:

# of Coolers: 4 Large

# of Submissions:

	Arrival Temperatures - Branch/Driver	Arrival Temperatures - Laboratory
Cooler #1:	3.0 / 2.9 / 3.2	/ /
Cooler #2:	2.1 / 1.5 / 1.1	/ /
Cooler #3:	1.3 / 1.2 / 1.0	/ /
Cooler #4:	3.2 / 3.8 / 4.0	/ /
Cooler #5:	/ /	/ /
Cooler #6:	/ /	/ /
Cooler #7:	/ /	/ /
Cooler #8	/ /	/ /
Cooler #9:	/ /	/ /
Cooler #10:	/ /	/ /

Loose ice

IR Gun ID:

Taken By: [redacted]

Date (yyyy/mm/dd): 2025/01/22 **Time:** 1 : 30 AM / PM

IR Gun ID:

Taken By:

Date (yyyy/mm/dd): **Time:** : AM / PM

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

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http://www.agatlabs.com

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
16 Young Street
WOODSTOCK, ON N4S3L4
(519) 266-4680
ATTENTION TO: Ali Rasoul
PROJECT: 8368 - BVD Puslinch
AGAT WORK ORDER: 25L245525
SOIL ANALYSIS REVIEWED BY: Chuandi Zhang, Inorganic Supervisor
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Feb 18, 2025
PAGES (INCLUDING COVER): 14
VERSION*: 1

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

*Notes

Disclaimer:

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

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Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP Metals

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

		SAMPLE DESCRIPTION:		BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509219	6509220	6509221	6509222	6509223	6509224	6509225	6509226
Antimony Leachate	µg/L	-	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Arsenic Leachate	µg/L	-	5	<5	<5	<5	<5	<5	<5	<5	<5
Barium Leachate	µg/L	-	100	<100	<100	<100	<100	<100	<100	<100	<100
Beryllium Leachate	µg/L	-	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Boron Leachate	µg/L	-	500	<500	<500	<500	<500	<500	<500	<500	<500
Cadmium Leachate	µg/L	-	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium Leachate	µg/L	-	10	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt Leachate	µg/L	-	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper Leachate	µg/L	-	6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9
Lead Leachate	µg/L	-	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Molybdenum Leachate	µg/L	23	1.5	<1.5	<1.5	2.6	<1.5	<1.5	<1.5	<1.5	<1.5
Nickel Leachate	µg/L	-	10	<10	<10	<10	<10	<10	<10	<10	<10
Selenium Leachate	µg/L	-	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver Leachate	µg/L	0.3	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium Leachate	µg/L	-	2	<2	<2	<2	<2	<2	<2	<2	<2
Vanadium Leachate	µg/L	-	0.6	<0.6	8.9	9.6	2.6	0.8	6.4	2.2	0.6
Zinc Leachate	µg/L	-	20	<20	<20	<20	<20	<20	<20	<20	<20

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP Metals

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

		SAMPLE DESCRIPTION:		BH25-62	BH25-70	BH25-79	BH25-86
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509227	6509228	6509229	6509230
Antimony Leachate	µg/L	-	0.6	<0.6	<0.6	<0.6	<0.6
Arsenic Leachate	µg/L	-	5	<5	<5	<5	<5
Barium Leachate	µg/L	-	100	<100	<100	<100	<100
Beryllium Leachate	µg/L	-	0.8	<0.8	<0.8	<0.8	<0.8
Boron Leachate	µg/L	-	500	<500	<500	<500	<500
Cadmium Leachate	µg/L	-	0.20	<0.20	<0.20	<0.20	<0.20
Chromium Leachate	µg/L	-	10	<10	<10	<10	<10
Cobalt Leachate	µg/L	-	0.3	<0.3	<0.3	<0.3	<0.3
Copper Leachate	µg/L	-	6.9	<6.9	<6.9	<6.9	<6.9
Lead Leachate	µg/L	-	1.0	<1.0	<1.0	<1.0	<1.0
Molybdenum Leachate	µg/L	23	1.5	<1.5	2.8	<1.5	3.5
Nickel Leachate	µg/L	-	10	<10	<10	<10	<10
Selenium Leachate	µg/L	-	5.0	<5.0	<5.0	<5.0	<5.0
Silver Leachate	µg/L	0.3	0.10	<0.10	<0.10	<0.10	<0.10
Thallium Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5
Uranium Leachate	µg/L	-	2	<2	<2	<2	<2
Vanadium Leachate	µg/L	-	0.6	1.3	10.2	0.9	3.4
Zinc Leachate	µg/L	-	20	<20	<20	<20	<20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6509219-6509230 Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP BNA

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

		SAMPLE DESCRIPTION:		BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509219	6509220	6509221	6509222	6509223	6509224	6509225	6509226
Bis(2-chloroethyl)ether Leachate	µg/L	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether Leachate	µg/L	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Chloroaniline Leachate	µg/L	10	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3,3'-Dichlorobenzidine Leachate	µg/L	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diethyl phthalate Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethylphthalate Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dinitrophenol Leachate	µg/L	10	10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene Leachate	µg/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene Leachate	µg/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dinitrotoluene (2,4 & 2,6) Leachate	µg/L	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol Leachate	µg/L	0.75	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SPLP BNAs-EXTR				Y	Y	Y	Y	Y	Y	Y	Y
Surrogate	Unit	Acceptable Limits									
2-Fluorophenol	%	50-140		62	65	69	67	70	61	63	61
phenol-d6 surrogate	%	50-140		81	90	80	81	90	79	71	64
2,4,6-Tribromophenol	%	50-140		72	62	76	62	60	65	68	64
Chrysene-d12	%	50-140		110	94	94	67	110	91	100	77

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP BNA

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

		SAMPLE DESCRIPTION:		BH25-62	BH25-70	BH25-79	BH25-86
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509227	6509228	6509229	6509230
Bis(2-chloroethyl)ether Leachate	µg/L	5	0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether Leachate	µg/L	4	0.5	<0.5	<0.5	<0.5	<0.5
p-Chloroaniline Leachate	µg/L	10	1.0	<1.0	<1.0	<1.0	<1.0
3,3'-Dichlorobenzidine Leachate	µg/L	0.5	0.5	<0.5	<0.5	<0.5	<0.5
Diethyl phthalate Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5
Dimethylphthalate Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dinitrophenol Leachate	µg/L	10	10	<10	<10	<10	<10
2,4-Dinitrotoluene Leachate	µg/L		0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene Leachate	µg/L		0.5	<0.5	<0.5	<0.5	<0.5
Dinitrotoluene (2,4 & 2,6) Leachate	µg/L	5	0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol Leachate	µg/L	0.75	0.2	<0.2	<0.2	<0.2	<0.2
SPLP BNAs-EXTR				Y	Y	Y	Y
Surrogate	Unit	Acceptable Limits					
2-Fluorophenol	%	50-140		70	71	76	80
phenol-d6 surrogate	%	50-140		80	74	79	104
2,4,6-Tribromophenol	%	50-140		103	61	92	62
Chrysene-d12	%	50-140		64	107	78	78

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6509219-6509230 Leachate was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP. This is a validated, unaccredited procedure.
2,4 & 2,6-Dinitrotoluene is a calculated parameter. The calculated value is the sum of 2,4-Dinitrotoluene and 2,6-Dinitrotoluene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP VOCs

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

SAMPLE DESCRIPTION:				BH25-4	BH25-10	BH25-18	BH25-27	BH25-33	BH25-39	BH25-46	BH25-55
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509219	6509220	6509221	6509222	6509223	6509224	6509225	6509226
Bromomethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Trans 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Cis 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform Leachate	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride Leachate	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide Leachate	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene Leachate	µg/L	0.55	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene Total Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		98	100	110	104	106	110	101	105

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

O. Reg. 406/19 - SPLP VOCs

DATE RECEIVED: 2025-02-06

DATE REPORTED: 2025-02-18

		SAMPLE DESCRIPTION:		BH25-62	BH25-70	BH25-79	BH25-86
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2025-02-05	2025-02-05	2025-02-05	2025-02-05
Parameter	Unit	G / S	RDL	6509227	6509228	6509229	6509230
Bromomethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Trans 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Cis 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Chloroform Leachate	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride Leachate	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide Leachate	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene Leachate	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene Leachate	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene Leachate	µg/L	0.55	0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene Total Leachate	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		108	100	98	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

6509219-6509230 Leachate was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: [redacted]

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch
ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario
SAMPLED BY:E. Fulsom

Soil Analysis

RPT Date: Feb 18, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 406/19 - SPLP Metals															
Antimony Leachate	6504967		<0.6	<0.6	NA	< 0.6	99%	70%	130%	99%	80%	120%	101%	70%	130%
Arsenic Leachate	6504967		<5	<5	NA	< 5	96%	70%	130%	97%	80%	120%	97%	70%	130%
Barium Leachate	6504967		<100	<100	NA	< 100	103%	70%	130%	103%	80%	120%	106%	70%	130%
Beryllium Leachate	6504967		<0.8	<0.8	NA	< 0.8	93%	70%	130%	95%	80%	120%	96%	70%	130%
Boron Leachate	6504967		<500	<500	NA	< 500	98%	70%	130%	101%	80%	120%	101%	70%	130%
Cadmium Leachate	6504967		<0.20	<0.20	NA	< 0.20	100%	70%	130%	104%	80%	120%	102%	70%	130%
Chromium Leachate	6504967		<10	<10	NA	< 10	95%	70%	130%	98%	80%	120%	95%	70%	130%
Cobalt Leachate	6504967		<0.3	<0.3	NA	< 0.3	97%	70%	130%	100%	80%	120%	99%	70%	130%
Copper Leachate	6504967		<6.9	<6.9	NA	< 6.9	95%	70%	130%	101%	80%	120%	96%	70%	130%
Lead Leachate	6504967		<1.0	<1.0	NA	< 1.0	96%	70%	130%	103%	80%	120%	100%	70%	130%
Molybdenum Leachate	6504967		4.0	4.0	NA	< 1.5	103%	70%	130%	104%	80%	120%	106%	70%	130%
Nickel Leachate	6504967		<10	<10	NA	< 10	95%	70%	130%	98%	80%	120%	97%	70%	130%
Selenium Leachate	6504967		<5.0	<5.0	NA	< 5.0	110%	70%	130%	113%	80%	120%	112%	70%	130%
Silver Leachate	6504967		<0.10	<0.10	NA	< 0.10	98%	70%	130%	100%	80%	120%	101%	70%	130%
Thallium Leachate	6504967		<0.5	<0.5	NA	< 0.5	99%	70%	130%	102%	80%	120%	104%	70%	130%
Uranium Leachate	6504967		<2	<2	NA	< 2	97%	70%	130%	98%	80%	120%	102%	70%	130%
Vanadium Leachate	6504967		<0.6	0.6	NA	< 0.6	97%	70%	130%	100%	80%	120%	99%	70%	130%
Zinc Leachate	6504967		<20	<20	NA	< 20	95%	70%	130%	113%	80%	120%	112%	70%	130%

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

Certified By: [redacted]

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

Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC
AGAT WORK ORDER: 25L245525
PROJECT: 8368 - BVD Puslinch
ATTENTION TO: Ali Rasoul
SAMPLING SITE:Puslinch, Ontario
SAMPLED BY:E. Fulsom

Trace Organics Analysis

RPT Date: Feb 18, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 406/19 - SPLP BNA															
Bis(2-chloroethyl)ether Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	109%	50%	140%	101%	50%	140%	77%	50%	140%
Bis(2-chloroisopropyl)ether Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	126%	50%	140%	108%	50%	140%	87%	50%	140%
p-Chloroaniline Leachate	6509230	6509230	< 1.0	< 1.0	NA	< 1.0	96%	50%	140%	68%	50%	140%	72%	50%	140%
3,3'-Dichlorobenzidine Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	75%	30%	130%	87%	30%	130%	78%	30%	130%
Diethyl phthalate Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	112%	50%	140%	69%	50%	140%	99%	50%	140%
Dimethylphthalate Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	93%	50%	140%	70%	50%	140%	95%	50%	140%
2,4-Dinitrophenol Leachate	6509230	6509230	< 10	< 10	NA	< 10	76%	30%	130%	88%	30%	130%	107%	30%	130%
2,4-Dinitrotoluene Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	93%	50%	140%	67%	50%	140%	107%	50%	140%
2,6-Dinitrotoluene Leachate	6509230	6509230	< 0.5	< 0.5	NA	< 0.5	101%	50%	140%	82%	50%	140%	104%	50%	140%
2,4,6-Trichlorophenol Leachate	6509230	6509230	< 0.2	< 0.2	NA	< 0.2	96%	50%	140%	108%	50%	140%	107%	50%	140%
O. Reg. 406/19 - SPLP VOCs															
Bromomethane Leachate	6517627		<0.20	<0.20	NA	< 0.20	97%	50%	140%	83%	50%	140%	113%	50%	140%
1,1-Dichloroethylene Leachate	6517627		<0.30	<0.30	NA	< 0.30	76%	50%	140%	102%	60%	130%	104%	50%	140%
Trans 1,2-Dichloroethylene Leachate	6517627		<0.20	<0.20	NA	< 0.20	68%	50%	140%	89%	60%	130%	90%	50%	140%
1,1-Dichloroethane Leachate	6517627		<0.30	<0.30	NA	< 0.30	91%	50%	140%	114%	60%	130%	107%	50%	140%
Cis 1,2-Dichloroethylene Leachate	6517627		<0.20	<0.20	NA	< 0.20	81%	50%	140%	113%	60%	130%	87%	50%	140%
Chloroform Leachate	6517627		<0.20	<0.20	NA	< 0.20	90%	50%	140%	115%	60%	130%	97%	50%	130%
1,2-Dichloroethane Leachate	6517627		<0.20	<0.20	NA	< 0.20	74%	50%	140%	107%	60%	130%	108%	50%	140%
Carbon Tetrachloride Leachate	6517627		<0.20	<0.20	NA	< 0.20	74%	50%	140%	99%	60%	130%	104%	50%	140%
1,2-Dichloropropane Leachate	6517627		<0.20	<0.20	NA	< 0.20	80%	50%	140%	115%	60%	130%	112%	50%	140%
Trichloroethylene Leachate	6517627		<0.20	<0.20	NA	< 0.20	80%	50%	140%	108%	60%	130%	110%	50%	140%
1,1,2-Trichloroethane Leachate	6517627		<0.20	<0.20	NA	< 0.20	112%	50%	140%	113%	60%	130%	110%	50%	140%
Ethylene Dibromide Leachate	6517627		<0.10	<0.10	NA	< 0.10	79%	50%	140%	119%	60%	130%	107%	50%	140%
Tetrachloroethylene Leachate	6517627		<0.20	<0.20	NA	< 0.20	101%	50%	140%	109%	60%	130%	103%	50%	140%
1,1,1,2-Tetrachloroethane Leachate	6517627		<0.10	<0.10	NA	< 0.10	91%	50%	140%	109%	60%	130%	98%	50%	140%
1,1,2,2-Tetrachloroethane Leachate	6517627		<0.10	<0.10	NA	< 0.10	110%	50%	140%	105%	60%	130%	104%	50%	140%
1,4-Dichlorobenzene Leachate	6517627		<0.10	<0.10	NA	< 0.10	101%	50%	140%	109%	60%	130%	92%	50%	140%
1,2-Dichlorobenzene Leachate	6517627		<0.10	<0.10	NA	< 0.10	92%	50%	140%	91%	60%	130%	102%	50%	140%

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

Certified By:

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Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Arsenic Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Barium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Beryllium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cadmium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cobalt Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Copper Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Lead Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Molybdenum Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Nickel Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Thallium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Vanadium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Zinc Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Bis(2-chloroethyl)ether Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
Bis(2-chloroisopropyl)ether Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
p-Chloroaniline Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
3,3'-Dichlorobenzidine Leachate	ORG-91-5114	modified from EPA 3510 & EPA 8270E & MOEC E3265	GC/MS
Diethyl phthalate Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
Dimethylphthalate Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
2,4-Dinitrophenol Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
2,4-Dinitrotoluene Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
2,6-Dinitrotoluene Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
Dinitrotoluene (2,4 & 2,6) Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
2,4,6-Trichlorophenol Leachate	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C, 8270E & ON MOECC E3265	GC/MS
Chrysene-d12	ORG-91-5114	modified from EPA 1312, 3510, 8270E & MOE E3265	GC/MS
SPLP BNAs-EXTR	LAB-93-4030	EPA SW-846 1312	PH METER
Bromomethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trans 1,2-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Cis 1,2-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

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Method Summary

CLIENT NAME: A & A ENVIRONMENTAL CONSULTANTS INC

AGAT WORK ORDER: 25L245525

PROJECT: 8368 - BVD Puslinch

ATTENTION TO: Ali Rasoul

SAMPLING SITE:Puslinch, Ontario

SAMPLED BY:E. Fulsom

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene Total Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

Results relate only to the items tested. Results apply to samples as received.

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Have feedback? Scan here for a quick survey!

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 25L045525

Cooler Quantity: 1 LRG

Arrival Temperatures: Triage Free 6.0

Depot Temperatures: 6.4 6.7 6.5

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: A & A Environmental Consultants Inc.

Contact: Dr. Ali Rasoul

Address: 16 Young St
Woodstock, Ontario

Phone: 519-266-4680 Fax: 519-266-3666

Reports to be sent to:

1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@", tdemers@", ckennedy@",

Regulatory Requirements:

(Please check all applicable boxes)

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

☑ Regulation 406
Table 1 *Indicate One*
☑ Ind/Com
☐ Res/Park
☐ Agriculture
☐ Regulation 558
☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
_____ *Region*
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

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

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

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

_____

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

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

Project Information:

Project: 8368-BVD Puslinch

Site Location: Puslinch, Ontario

Sampled By: E. Fulsom

AGAT Quote #: 29117325681 PO: 8368-BVD Puslinch

Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:

Contact:

Address:

Email:

Legal Sample ☐

Sample Matrix Legend

GW	Ground Water	**SD**	Sediment
O	Oil	**SW**	Surface Water
P	Paint	**R**	Rock/Shale
S	Soil		

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs: Aroclors ☐	O. Reg 406: Regulation 406 Characterization Package	O. Reg 406: pH, Metals, BTEX, F1-F4	O. Reg 406: EC, SAR	O. Reg 406: Regulation 406 SPLP Rainwater Leach mSPLP: ☑ Metals ☑ VOCs ☑ SVOCs ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ Metals ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	O.Reg 406/19 SPLP - A+						Potentially Hazardous or High Concentration (Y/N)
1. BH25-4	Feb 05/25	AM PM	3	S												☑		☑							
2. BH25-10	Feb 05/25	AM PM	3	S												☑		☑							
3. BH25-18	Feb 05/25	AM PM	3	S												☑		☑							
4. BH25-27	Feb 05/25	AM PM	3	S												☑		☑							
5. BH25-33	Feb 05/25	AM PM	3	S												☑		☑							
6. BH25-39	Feb 05/25	AM PM	3	S												☑		☑							
7. BH25-46	Feb 05/25	AM PM	3	S												☑		☑							
8. BH25-55	Feb 05/25	AM PM	3	S												☑		☑							
9. BH25-62	Feb 05/25	AM PM	3	S												☑		☑							
10. BH25-70	Feb 05/25	AM PM	3	S												☑		☑							
11. BH25-79	Feb 05/25	AM PM	3	S												☑		☑							

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
E. Fulsom [redacted]	2/6/25	12pm	[redacted]	250625	3:01 PM
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
			[redacted]	Feb. 6/25	6:34
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page 1 of 2

N°:

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AGAT Laboratories

Have feedback? Scan here for a quick survey!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: A & A Environmental Consultants Inc.
Contact: Dr. Ali Rasoul
Address: 16 Young St
Woodstock, Ontario
Phone: 519-266-4680 Fax: 519-266-3666
Reports to be sent to:
1. Email: arasoul@aaenvironmental.ca, vsowden@"
2. Email: sscott@", tdemers@", ckennedy@",

Project Information:

Project: 8368- BVD Puslinch
Site Location: Puslinch, Ontario
Sampled By: E. Fulsom
AGAT Quote #: 29117325681 PO: 8368 - BVD Puslinch
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

Regulatory Requirements:

(Please check all applicable boxes)

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

☑ Regulation 406
Table 1 (Indicate One)
☑ Ind/Com ☐ Res/Park ☐ Agriculture
☐ Regulation 558
☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
_____ Region
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ Indicate One

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

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

Legal Sample ☐

Sample Matrix Legend

GW	Ground Water	**SD**	Sediment
O	Oil	**SW**	Surface Water
P	Paint	**R**	Rock/Shale
S	Soil		

Laboratory Use Only

Work Order #: 25L245525
Cooler Quantity: 1 LRG
Arrival Temperatures:
Depot Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CSR

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs: Arocolors ☐	O. Reg 406: Regulation 406 Characterization Package pH, Metals, BTEX, F1-F4	O. Reg 406: EC, SAR	O. Reg 406: Regulation 406 SPLP Rainwater Leach mSPLP: ☑ Metals ☑ VOCs ☐ SVOCs ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	O.Reg 406/19 SPLP - ABNs	Metals Water 93-215		F1-F4/VOCs Water 91-249				Potentially Hazardous or High Concentration (Y/N)
1. BH25-86	Feb 05/25	AM PM	3	S											☑			☑							
2.		AM PM																						
3.		AM PM																						
4.		AM PM																						
5.		AM PM																						
6.		AM PM																						
7.		AM PM																						
8.		AM PM																						
9.		AM PM																						
10.		AM PM																						
11.		AM PM																						

Samples Relinquished By (Print Name and Sign): E. Fulsom [redacted]	Date: 2/6/25	Time: 12pm	Samples Received By (Print Name and Sign): [redacted]	Date: 020625	Time: 3:01 PM
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date: 6/2/25	Time: 6:45 PM
Samples Relinquished By (Print Name and Sign):	Date:	Time:			

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Document ID: GN-FB-1911-QR3

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Date Issued: Jan 18, 2024