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PRELIMINARY (DUE DILIGENCE) GEOTECHNICAL INVESTIGATION REPORT

12506 Heart Lake Road, Caledon, ON

Project #: 24-0825
Prepared for: Tribal Partners (Canada) Inc. and TPI Acquisitions II Inc.
Date: January 21, 2025

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January 21, 2025

Tribal Partners (Canada) Inc. and TPI Acquisitions II Inc.
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Attention: Carleigh Oude-Reimerink, Vice President, Development

SUBJECT: PRELIMINARY (DUE DILIGENCE) GEOTECHNICAL INVESTIGATION REPORT, 12506 HEART LAKE ROAD, CALEDON, ON

EnVision Consultants Ltd. is pleased to present the enclosed Preliminary (Due Diligence) Geotechnical Investigation Report for the above-noted property.

We thank you for utilizing EnVision for this assignment. If there are any questions regarding the enclosed report, please do not hesitate to contact us.

Yours sincerely,

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QUALITY MANAGEMENT

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1. EXECUTIVE SUMMARY

EnVision Consultants Ltd. (EnVision) was retained by Tribal Partners (Canada) Inc. and TPI Acquisitions II Inc. (the 'Client') to conduct preliminary geotechnical investigation work for due diligence purposes in support of the potential acquisition of the property located at 12506 Heart Lake Road, Caledon, ON (the 'Site').

The Site is located on the south side of Heart Lake Road, approximately 500 m southeast of the intersection of Heart Lake Road and Old School Road in a primarily agricultural and residential area in the Town of Caledon. The Site is irregular in shape, occupying an area of approximately 51.4 ha (126.9 acre) and is currently occupied primarily by agricultural land, with the exception of one (1) single-family residential home located on the northwestern portion of the Site and a farming operation (Broadway Farms) located on the south-central portion of the Site, comprising one (1) residential farm house and five (5) structures primarily used for storage.

It is our understanding that the proposed redevelopment of the Site includes the demolition of the existing on-site buildings and clearing of agricultural fields to facilitate the construction of four (4) single storey industrial buildings and associated parking and landscape areas, as well as a stormwater management pond and potential extension of Dougall Avenue.

EnVision conducted a due-diligence level geotechnical site investigation consisting of seventeen (17) boreholes, six (6) of which were converted to environmental-grade monitoring wells for the purposes of groundwater level observation and for hydrogeological studies.

The boreholes revealed a stratigraphy generally consisting of topsoil overlying fill material or disturbed native soils mixed with topsoil and organics. The native soils consisted of glacial till deposits of silty clay to clayey silt and sandy silt. Cohesionless deposits of silty sand, sandy silt, sand, and sand and gravel were also encountered within the boreholes at varying depths.

The groundwater levels measured in the monitoring wells ranged from 1.9m to 6.5m below the existing ground surface, corresponding to Elev. 270.9m to 265.4m. Water level readings may not have equilibrated with the stabilized piezometric levels at the time of the readings given the low permeability of the formations into which they were screened. A longer period of observation would be needed to determine the groundwater levels.

2. INTRODUCTION

EnVision Consultants Ltd. (EnVision) was retained by Tribal Partners (Canada) Inc. and TPI Acquisitions II Inc. (the 'Client') to conduct preliminary geotechnical investigation work for due diligence purposes in support of the potential acquisition of the property located at 12506 Heart Lake Road, Caledon, ON (the 'Site').

The Site is located on the south side of Heart Lake Road, approximately 500 m southeast of the intersection of Heart Lake Road and Old School Road in a primarily agricultural and residential area in the Town of Caledon. The Site is irregular in shape, occupying an area of approximately 51.4 ha (126.9 acre) and is currently occupied primarily by agricultural land, with the exception of one (1) single-family residential home located on the northwestern portion of the Site and a farming operation (Broadway Farms) located on the south-central portion of the Site, comprising one (1) residential farm house and five (5) structures primarily used for storage.

It is our understanding that the proposed redevelopment of the Site includes the demolition of the existing on-site buildings and clearing of agricultural fields to facilitate the construction of four (4) single storey industrial buildings and associated parking and landscape areas, as well as a stormwater management pond and potential extension of Dougall Avenue.

It is also assumed that underground utilities including watermains, storm and sanitary sewers will be installed along potential Dougall Avenue extension.

EnVision conducted a due-diligence level geotechnical site investigation consisting of seventeen (17) boreholes, six (6) of which were converted to environmental-grade monitoring wells for the purposes of groundwater level observation and for hydrogeological studies.

Phase One and Phase Two Environmental Site Assessment (ESA) and hydrogeological studies for the property were also completed by EnVision which are presented in separate reports.

This geotechnical investigation and reporting is of a preliminary nature since details on the proposed development are not known at this time. Additional geotechnical investigations will be required once the design details for various project components of the proposed development are available.

The location of the Site and the locations of boreholes are depicted on Drawing No. 1, attached.

This report is provided on the basis of the terms of reference presented above and on the assumption that the design will be in accordance with the applicable codes and standards. If there are any changes in the design features relevant to the geotechnical analyses, or if any questions arise concerning the geotechnical aspects of the codes and standards, this office should be contacted to review the design.

The site investigation and recommendations follow generally accepted practice for geotechnical consultants in Ontario. The format and contents are guided by client specific needs and economics and do not conform to generalized standards for services. Laboratory testing for most part follows ASTM or CSA Standards or modifications of these standards that have become standard practice.

This report has been prepared for Tribal Partners (Canada) Inc. and TPI Acquisitions II Inc. and its architect and designers. Third party use of this report without Envision consent is prohibited. The

limitation conditions presented in this report form an integral part of the report and must be considered in conjunction with this report. The findings and recommendations presented in this report are of a preliminary nature given that the design details are not available at the time of this report.

3. FIELD INVESTIGATION AND TESTING

3.1. FIELDWORK

The geotechnical field investigation consisted of drilling a total of seventeen (17) boreholes (BH24-1 through BH24-17) to depths ranging from 6.3m to 8.2m below ground surface (bgs). Six (6) boreholes BH24-1, BH24-3, BH24-7, BH24-9, BH24-14 and BH24-15 were equipped with monitoring wells.

The as-drilled borehole locations were surveyed by EnVision personnel using differential GPS equipment. The locations of the boreholes are presented on the Borehole Location Plan (Drawing No. 1) and the record of borehole log sheets are attached in Appendix A. A summary of borehole information is presented in *Table 3-1* below.

Table 3-1: Summary of Borehole Information

BOREHOLE ID	GROUND SURFACE ELEVATION (m)	BOREHOLE COORDINATES UTM NAD83, ZONE 17		DEPTH OF BOREHOLE (m)	MONITORING WELL
		NORTHING (m)	EASTING (m)		
BH24-1	271.9	4846386	594469	8.2	50 mm MW
BH24-2	271.5	4846500	594617	8.2	No MW
BH24-3	270.7	4846553	594811	6.7	50 mm MW
BH24-4	271.1	4846311	594651	6.7	No MW
BH24-5	271.3	4846417	594783	6.7	No MW
BH24-6	271.0	4846097	594835	6.7	No MW
BH24-7	271.1	4846277	594864	6.7	50 mm MW
BH24-8	271.0	4846356	595021	6.7	No MW
BH24-9	271.1	4845965	594956	6.7	50 mm MW
BH24-10	271.2	4846225	595034	6.7	No MW
BH24-11	271.8	4846166	595213	6.3	No MW
BH24-12	270.5	4845866	595118	6.7	No MW
BH24-13	271.5	4846045	595336	6.7	No MW
BH24-14	272.8	4846049	595336	8.2	50 mm MW
BH24-15	271.3	4845761	595223	6.7	50 mm MW

BOREHOLE ID	GROUND SURFACE ELEVATION (m)	BOREHOLE COORDINATES UTM NAD83, ZONE 17		DEPTH OF BOREHOLE (m)	MONITORING WELL
		NORTHING (m)	EASTING (m)		
BH24-16	272.6	4845904	595291	6.7	No MW
BH24-17	272.9	4845960	595422	6.7	No MW

The field work of borehole drilling was carried out between November 18 to 21, 2024, by Drilltech Drilling Ltd. with technical supervision provided by EnVision personnel. The boreholes were drilled using a CME-55 track-mounted drilling rig with solid stem augers. Split spoon samples were retrieved at regular intervals with a hammer weighing 624 N and dropping 760mm as per ASTM D1586. This sampling method recovers samples from the soil strata, and the number of blows required to drive the sampler 0.3m depth into the undisturbed soil (SPT 'N' values) gives an indication of the compactness condition or consistency of the sampled soil material. The SPT 'N' values are indicated on the Log of Borehole sheets (Refer to Appendix A).

The samples were logged in the field and returned to the EnVision laboratory for detailed examination by the geotechnical engineer and for laboratory testing.

Prior to drilling operations, underground utilities were cleared at the borehole locations by representatives of the public and private utilities locate companies.

Six (6) environmental-grade, flush threaded PVC monitoring wells of 50 mm diameter were installed for longer term groundwater level monitoring and for hydrogeological studies. The monitoring wells have not been decommissioned. The monitoring wells must be decommissioned in accordance with O. Reg. 903 (as amended) prior to construction.

3.2. GEOTECHNICAL LABORATORY TESTING

The geotechnical laboratory testing program consisted of the measurement of the natural moisture content of all available soil samples and these results are presented on the respective borehole log sheets. Grain size analyses were conducted on fifteen (15) selected samples. Atterberg Limits tests were conducted on eleven (11) samples, the results of which are presented on the respective borehole log sheets in Appendix A. Grain size distribution curves and the plasticity charts are presented in Appendix B.

Four (4) samples were tested for corrosivity parameters and water-soluble sulphates. Lab certificates of analyses are attached in Appendix D.

4. SUBSURFACE CONDITIONS

The borehole locations are shown on Drawing No. 1. The terms used in the record of boreholes and general notes on soil descriptions are presented as Drawings 1A and 1B in Appendix A. The subsurface conditions in the boreholes are presented in the individual borehole log sheets attached in Appendix A and are summarized in the following paragraphs. A generalized subsurface profile is shown on Drawing No. 2. For specific details, the individual boring log sheets should be consulted.

The stratigraphic boundaries shown on the borehole records are inferred from observations of drilling progress and non-continuous sampling and, therefore, represent transitions between soil types rather than exact planes of geological change. The subsurface conditions will vary beyond the borehole locations.

In general, the subsurface conditions in the boreholes consisted of a surficial layer of topsoil overlying fill materials or disturbed native soils generally consisting of silty clay to clayey silt mixed with topsoil and organics. Beneath the fill and disturbed soils, the native soils consisted of glacial till deposits of silty clay and clayey silt and sandy silt texture. Cohesionless deposits of silty sand, sandy silt, sand, and sand and gravel were also encountered within the boreholes at varying depths.

The groundwater levels measured in the monitoring wells ranged from 1.9m to 6.5m below the existing ground surface, corresponding to Elev. 270.9m to 265.4m.

4.1. SOIL CONDITIONS

4.1.1. TOPSOIL / FILL MATERIAL / DISTURBED NATIVE SOILS

A 180mm to 300mm thick layer of topsoil was encountered at the location of boreholes except BH24-13 where granular material (sand and gravel) was encountered below the ground surface.

Underlying the topsoil in the boreholes, generally firm to very stiff fill material or disturbed native soils generally consisting of silty clay to clayey silt mixed with topsoil and organics were encountered which extended to depths varying from 0.8m to 1.7m below the existing ground surface. Cohesionless disturbed soils consisting of sandy silt to silty sand were found in Boreholes BH24-1, BH24-2 and BH24-5 below topsoil which extended to depths of 0.5m to 0.8m below the existing ground surface. In BH24-15 disturbed sandy silt was found at a depth of 0.8m which extended to 1.5m. Cohesive fill/disturbed native soil was found to be in a firm to very stiff consistency based on measured SPT 'N' values ranging from 5 to 26 blows per 300mm of penetration. Natural moisture content measured in the tested fill/disturbed native soil samples generally ranged from 16% to 22%.

It should be noted that the disturbed native soil layer identified beneath this distinct upper topsoil layer also contains organics and is intermixed with topsoil, and as such, the thickness of stripping will be greater than the top layer thickness shown on the borehole log sheet. The topsoil thickness explored at borehole locations may not be representative for the site and should not be relied on to calculate topsoil quantities. Test pits should be carried out to explore and quantify the thickness of topsoil across the site more accurately.

4.1.2. GLACIAL TILL DEPOSITS OF SILTY CLAY TO CLAYEY SILT

Below fill material or disturbed native silty clay to clayey silt in all boreholes (BH24-1 through BH24-17) except BH24-15, glacial till deposits of silty clay to clayey silt were encountered which extended to depths varying from 5.6m to the termination depths of boreholes. In BH24-15, glacial till deposits of clayey silt were encountered at a depth of 3.3m which extended to the termination depth of 6.7m. Seams/lenses of sand/silty sand were also encountered within silty clay to clayey silt till. Glacial till deposits of sandy silt were also encountered within silty clay to clayey silt till at varying depths in boreholes BH24-1, BH24-4, BH24-5, BH24-8, BH24-10, BH24-11 and BH24-16. A cohesionless deposit of silty sand was also encountered within the glacial till deposits of silty clay to clayey silt in Borehole BH24-14.

Silty clay to clayey silt till was found to be in a stiff to hard consistency with measured SPT 'N' values ranging from 11 to more than 50 blows per 300mm of penetration. Natural moisture content measured in the silty clay till to clayey silt till samples generally ranged from 7% to 16%.

Cobbles and boulders are also expected in this glacial till deposit.

Grain size analyses were conducted on ten (10) selected silty clay till/clayey silt till samples. The tested samples contained 4% to 9% gravel, 27% to 44% sand, 37% to 46% silt and 12% to 24% clay size particles. Consistency (Atterberg) limits tests on the samples of silty clay till/clayey silt till indicated liquid limits of 17 to 25, plastic limits of 13 to 15 and plasticity indices of 4 to 10. The results of grain size distribution and Atterberg Limits tests on the silty clay till/clayey silt till samples are presented in Figures 1 and 4 respectively in Appendix B and are summarized in *Table 4-1*.

Table 4-1: Summary of Grain Size Distribution and Atterberg Limits Tests on Silty Clay Till/Clayey Silt Till Samples

BOREHOLE NO.	SAMPLE NO.	SAMPLE DEPTH (m)	GRAIN SIZE DISTRIBUTION				ATTERBERG LIMITS			SOIL TYPE
			GRAVEL (%)	SAND (%)	SILT (%)	CLAY (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	
BH24-01	SS4	2.3	4	27	45	24	25	15	10	CL
BH24-02	SS5	3.1	4	36	42	18	21	14	7	CL
BH24-03	SS3	1.5	5	30	44	21	24	15	9	CL
BH24-04	SS5	3.1	9	39	37	15	19	13	6	CL-ML
BH24-06	SS3	1.5	5	31	46	18	23	15	7	CL
BH24-09	SS6	4.6	6	44	38	12	17	13	4	CL-ML
BH24-10	SS4	2.3	4	37	40	19	21	14	7	CL

BOREHOLE NO.	SAMPLE NO.	SAMPLE DEPTH (m)	GRAIN SIZE DISTRIBUTION				ATTERBERG LIMITS			SOIL TYPE
			GRAVEL (%)	SAND (%)	SILT (%)	CLAY (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	
BH24-11	SS5	3.1	5	41	40	14	19	13	6	CL-ML
BH24-13	SS6	3.8	6	34	44	16	22	14	8	CL
BH24-15	SS6	3.8	7	41	38	14	18	13	5	CL-ML

4.1.3. GLACIAL TILL DEPOSITS OF SANDY SILT

Glacial till deposits of sandy silt were encountered in BH24-1, BH24-4, BH24-5, BH24-8, BH24-10, BH24-11, BH24-15 and BH24-16 at depths ranging from 1.5m to 7.2mbgs which extended to depths ranging from 2.4m to the maximum explored depths of 6.3m to 8.2mbgs.

Glacial till deposits of sandy silt were found to be in a compact to very dense state with measured SPT 'N' values of 20 to more than 50 blows per 300mm penetration. Natural moisture content measured in the selected samples of sandy silt till ranged from 7 to 14%.

Cobbles and boulders are also expected in the glacial till deposits.

Grain size analyses were conducted on three (3) selected sandy silt till samples. The tested samples contained 3% to 13% gravel, 21% to 39% sand, 43% to 66% silt and 10% clay size particles. Consistency (Atterberg) limits test on one sample of sandy silt till indicated a liquid limit of 19, plastic limit of 15 and plasticity index of less than 4. The results of grain size distribution and Atterberg Limits tests on sandy silt till samples are presented in Figures 2 and 4 respectively in Appendix B and are summarized in *Table 4-2*.

Table 4-2: Summary of Grain Size Distribution and Atterberg Limits Tests on Sandy Silt Till Samples

BOREHOLE NO.	SAMPLE NO.	SAMPLE DEPTH (m)	GRAIN SIZE DISTRIBUTION				ATTERBERG LIMITS			SOIL TYPE
			GRAVEL (%)	SAND (%)	SILT (%)	CLAY (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX	
BH24-01	SS8	7.6	3	21	66	10	-	-	NP	ML
BH24-08	SS6	4.6	13	33	44	10	19	15	NP	ML
BH24-16	SS4	2.3	8	39	43	10	-	-	NP	ML

4.1.4. COHESIONLESS DEPOSITS OF SILTY SAND, SAND, SAND AND GRAVEL

Water bearing cohesionless deposits of silty sand, sandy silt, and sand were encountered in Boreholes BH24-12, BH24-14 and BH24-17 at depths of 6.1m to 6.5m which extended to the termination depths of 6.7m in BH24-12 and BH24-17 and to 7m in BH24-14. In BH24-15, a cohesionless deposit of sand and gravel was encountered at a depth of 2.4m which extended to 3.3mbgs. Cohesionless deposits of silty sand, sand, and sand and gravel were found to be wet to saturated and in a dense to very state based on measured SPT 'N' values ranging from 32 to more than 50 blows per 300mm of penetration. Natural moisture contents measured in selected samples of cohesionless deposits generally ranged from 10% to 13%.

Grain size analyses were conducted on two (2) selected silty sand, and sand and gravel samples. The grain size distribution test results are summarized in *Table 4-3* and the gradation curves for the samples are presented in Figure 3 in Appendix B.

Table 4-3: Summary of Grain Size Distribution on Silty Sand and Sand and Gravel Samples

BOREHOLE NO.	SAMPLE NO.	SAMPLE DEPTH (m)	GRAIN SIZE DISTRIBUTION			
			GRAVEL (%)	SAND (%)	SILT (%)	CLAY (%)
BH24-14	SS9	6.1	2	50	44	4
BH24-15	SS4B+SS5A	2.4	45	46	9	

4.1.5. SILTY CLAY

Below glacial till deposits of clayey silt till in BH24-12, a cohesive deposit of silty clay was encountered at a depth of 5.6m which extended to 6.5mbgs. Silty clay was found to be in a hard consistency with measured SPT 'N' value of 32 blows per 300mm of penetration. Natural moisture content measured in the tested silty clay sample was 16%.

4.2. GROUNDWATER CONDITIONS

The groundwater levels measured in the monitoring wells are summarized in the table below and are also shown on the borehole log sheets attached in Appendix A. The groundwater levels measured on December 4, 13 and 17, 2024 in the monitoring wells installed in BH24-3, BH24-7 to BH24-9, BH24-14 and BH24-15 ranged from 1.9m to 5.1m below the existing ground surface, corresponding to Elev. 270.9m to 266.0m, as listed in *Table 4-4.* In BH24-1, the groundwater level measured on Dec. 13 and 17, 2024 was found to be at 6.3m (Elev. 265.6m) and 6.5m (Elev. 265.4m).

Table 4-4: Summary of Groundwater Levels Observed in the Monitoring Wells

BOREHOLE NO.	GROUND SURFACE ELEVATION (m)	SOIL TYPE AT SCREEN LOCATION/ (DEPTH m)	DATE OF OBSERVATION	*DEPTH OF GROUNDWATER (m)	*GROUNDWATER TABLE ELEVATION (m)
BH24-1	271.85	(4.6m – 7.6m) Silty Clay Till/Clayey Silt Till	Dec. 13, 2024 Dec. 17, 2024	6.25 6.46	265.60 265.39
BH24-3	270.68	(3.1m – 6.1m) Silty Clay Till/Clayey Silt Till	Dec. 4, 2024 Dec. 13, 2024 Dec. 17, 2024	3.24 2.92 1.91	267.44 267.76 268.77
BH24-7	271.11	(3.1m – 6.1m) Silty Clay Till/Clayey Silt Till	Dec. 13, 2024 Dec. 17, 2024	4.33 5.11	266.78 266.00
BH24-9	271.15	(3.1m – 6.1m) Silty Clay Till/Clayey Silt Till	Dec. 13, 2024 Dec. 17, 2024	Dry Dry	- -
BH24-14	272.75	(4.6m – 7.6m) Silty Clay Till/Clayey Silt Till /Silty Sand	Dec. 4, 2024 Dec. 13, 2024 Dec. 17, 2024	1.86 2.40 2.16	270.89 270.35 270.59
BH24-15	271.32	(3.1m – 6.1m) Sand and Gravel/ Clayey Silt Till	Dec. 13, 2024 Dec. 17, 2024	2.29 2.27	269.03 269.05

*The water level may not be the stabilized groundwater level due to the low permeable soils.

It should be noted that the groundwater levels can vary and are subject to seasonal fluctuations in response to weather events. The long-term groundwater table is expected to be slightly higher than that shown on *Table 4-4*. Water level readings may not have equilibrated with the stabilized piezometric levels at the time of the readings given the low permeability of the formations into which they were screened. A longer period of observation would be needed to determine the groundwater levels.

5. DISCUSSION AND PRELIMINARY RECOMMENDATIONS

This geotechnical investigation is for due diligence purposes with limited number of boreholes and is of a preliminary nature since details on the proposed development are not known. As such, our comments and recommendations are preliminary and may change once the design details of the proposed development are available. Additional investigations will be required for the detailed design stage. It is anticipated that the proposed development will consist of four (4) single storey industrial buildings (Building A, B, C and D), associated parking areas, a storm water management pond and potential extension of Dougall Ave to connect with Heart Lake Road. We further understand that the proposed buildings will be slab on grade structures (no basement).

The site is overlain by a thin layer of discrete topsoil, underlain by fill or disturbed soils which also contain organic soils and might also be considered as topsoil as far as stripping is concerned. The fill/disturbed native soil depths measured at the borehole locations ranged from 0.8m to 1.7m and is generally clayey/silty in texture. This layer is not likely viable for re-use as compacted fill in any engineered application due to its elevated water content and organic content.

5.1. SITE GRADING & ENGINEERED FILL

The site is proposed to be developed as an industrial development with an internal local roadway and driveways and parking areas, it is recommended that all fill to be placed for grading purposes be constructed as engineered fill to provide competent subgrade below road, driveways, and parking areas, etc.

Prior to placement of engineered fill, the topsoil, disturbed organic-rich soils and weak or compressible existing fill materials and disturbed native soils should be removed to expose inorganic competent native subgrade. The exposed subgrade should then be proof rolled with a heavy sheepsfoot roller to identify weak areas. Any weak or wet zones identified during proof-rolling should be sub-excavated and replaced with compacted competent material to establish stable and uniform conditions. Prior to placement of engineered fill, the subgrade should be inspected and approved by the Geotechnical Engineer.

General guidelines for the placement and preparation of engineered fill are presented in Appendix C.

5.2. ROADS/PAVEMENTS (PRELIMINARY)

The recommended pavement structure is provided in *Table 5-1* based on the subgrade soil properties determined from visual examination and textural classification of the soil samples. These values may need to be adjusted based on Town standards.

Assuming that traffic usage will be minor local, the following minimum pavement thickness is recommended for pavement to be constructed within the development:

Table 5-1: Recommended Pavement Structure Thickness (Preliminary)

PAVEMENT LAYER	COMPACTION REQUIREMENTS	PAVEMENT STRUCTURE THICKNESS (LIGHT DUTY)	PAVEMENT STRUCTURE THICKNESS (MEDIUM DUTY/DOUGALL AVE EXTENSION)
ASPHALTIC CONCRETE	96% Maximum Relative Density (MRD)*	40mm HL 3 or SP 12.5 60mm HL 8 or SP 19.0	40mm HL 3 or SP 12.5 85mm HL 8 or SP 19.0
OPSS GRANULAR A BASE (20MM CRUSHER RUN LIMESTONE)	100% SPMDD**	150mm	150mm
OPSS GRANULAR B TYPE II (50MM CRUSHER RUN LIMESTONE)	100% SPMDD	400mm to 600mm (locally thickened above 400mm based on the results of proofrolling)	400mm to 600mm (locally thickened above 400mm based on the results of proofrolling)

* Denotes Maximum Relative Density; ** Denotes Standard Proctor Maximum Dry Density, ASTM-D698

The subgrade of all pavements must be compacted to 98% SPMDD for at least the upper 300 mm unless accepted by the Geotechnical Engineer.

5.2.1. STRIPPING, SUB-EXCAVATION AND GRADING

The site should be stripped of all topsoil, existing unsuitable fill material and disturbed soils, both in cut and fill areas. Following stripping, the site should be graded to the subgrade level and approved. The subgrade should then be proof-rolled, in the presence of a Geotechnical Engineer, by at least several passes of a heavy compactor having a rated capacity of at least 8 tonnes. Any soft spots thus exposed should be removed and replaced by select fill material, similar to the existing subgrade soil and approved by the Geotechnical Engineer. The subgrade should then be re-compacted from the surface to at least 98% of its Standard Proctor Maximum Dry Density (SPMDD). The final subgrade should be cambered or otherwise shaped properly to facilitate rapid drainage and to prevent the formation of local depressions in which water could accumulate.

Owing to the clayey (i.e., impervious) nature of the subsoil at the site, proper cambering and allowing the water to escape towards the sides (where it can be removed by means of subdrains) is considered to be beneficial for this project. Otherwise, any water collected in the granular sub-base materials could be trapped thus causing problems due to softened subgrade, differential frost heave, etc. For the same reason damaging the subgrade during and after placement of the granular materials by heavy construction traffic should be avoided. If the moisture content of the local material cannot be maintained at ±2% of the optimum moisture content, imported granular material may need to be used.

Any fill required for re-grading the site or backfill should be select, clean material, free of topsoil, organic or other foreign and unsuitable matter. The fill should be placed in thin layers and compacted to at least 95% of its SPMDD. The degree of compaction should be increased to 98% within the top 0.5 m of the subgrade, or as per the Town's Standards. The compaction of the new fill should be checked by frequent field density tests.

5.2.2. CONSTRUCTION

Once the subgrade has been inspected and approved, the granular base and sub-base course materials should be placed in layers not exceeding 200 mm (uncompacted thickness) and should be compacted to at least 100% of their respective SPMDD. The grading of the material should conform to current OPS Specifications.

The placing, spreading, and rolling of the asphalt should be in accordance with OPS Specifications or, as required by the local authorities.

5.2.3. DRAINAGE REQUIREMENTS

Full-length subdrains are required beneath the roadway in accordance with OPSD 216.020 and the Town of Caledon Standards. The subdrains should be properly filtered to prevent the loss of (and clogging by) soil fines.

All paved surfaces should be sloped to provide satisfactory drainage towards catch basins. As discussed in Section 5.2.1, by means of good planning any water trapped in the granular sub-base materials should be drained rapidly towards subdrains or other interceptors.

5.3. SEWERS, WATERMAIN

As a part of the site development, new storm and sanitary sewers are assumed to be required to be installed along the proposed Dougall Ave extension. Sewers and watermain designs and installations should be in accordance with the Town of Caledon's Standards and Specifications.

5.3.1. TRENCHING

Based on the boreholes, the trenches will be dug through fill material and/or disturbed native soils, glacial till deposits of silty clay to clayey silt and sandy silt texture with lenses/layers of cohesionless deposits of sand and silty sand. Excavation in overburden can be carried out with heavy hydraulic backhoe. Contractor should also have on site adequate equipment to break and remove boulders that are expected to exist within the till deposits.

Groundwater seepage is anticipated from perched water in fill material and disturbed native soils. Based on groundwater level observations in December 2024, the groundwater was found to be in the range of 1.9m to 6.5m below the existing ground surface, corresponding to Elev. 265.40m to 270.9m. Lenses/layers of wet to saturated cohesionless soils consisting of sand and silty sand were encountered within glacial till deposits of silty clay to clayey silt.

It is expected that much of the water seepage should be controllable by the use of conventional pumping from collection sumps for trenches since most of the excavations are expected in less permeable silty clay to clayey silt till deposits based on limited boreholes. However, contractors should be prepared to employ more elaborate, advanced dewatering procedures such as well points if the flow from granular or sandy layers within the fill material or disturbed native material is not controlled by conventional methods.

Any excavation in cohesionless soils (sand, silty sand, sand and gravel and sandy silt till) below groundwater will require positive dewatering using well points. Otherwise, it will result in an unstable base and flowing sides. The groundwater level must be lowered and maintained at least 0.5 m below the base of the excavation which must be verified by means of piezometric readings in nearby monitoring wells or piezometers. For more comments on groundwater control, reference should be made to the hydrogeological report for the site.

All excavations must be carried out in accordance with the most recent Occupational Health and Safety Act (OHSA).

In accordance with OHSA, cohesionless soils; sand and gravel, silty sand, sand, sandy silt, sandy silt till, fill material and disturbed firm to stiff silty clay to clayey silt can be classified as Type 3 soil above groundwater table and Type 4 soil below groundwater table. The very stiff to hard silty clay till and clayey silt till can be classified as Type 2 Soil above the groundwater table and Type 3 soil below groundwater table. Note that the OHSA Soil Type in any trench will be governed by the highest Soil Type number encountered in such trench.

5.3.2. BEDDING

The very stiff to hard silty clay till/clayey silt till, compact to very dense sand silty till will provide adequate support for the watermain and sewer pipes and allow the use of normal Class B type bedding. The recommended minimum thickness of granular bedding below the invert of the pipes is 150 mm but this should be increased as dictated by the pipe diameter. If the subgrade is wet, the minimum bedding thickness should be increased to 250 mm.

The bedding material should consist of well graded granular material such as Granular 'A' or equivalent and conform to the current Ontario Provincial Standard specifications and/or standards set by the local municipalities. After installing the pipe on the bedding, a granular surround of approved bedding material, which extends at least 300 mm above the obvert of the pipe, or as set out by the Town standards or Regional Authority, should be placed. The subgrade condition must be inspected and approved by geotechnical personnel.

To avoid the loss of soil fines from the subgrade and road granulars, uniformly graded clear stone should not be used unless, below the granular bedding material, a suitable, approved filter fabric (geotextile) is placed. The geotextile should extend along the sides of the trench and should be wrapped all around the poorly graded bedding material. Written approval from the geotechnical engineer should be sought before using clear stone as bedding.

5.3.3. BACKFILLING OF TRENCHES

Based on visual and tactile examination, the select on-site excavated inorganic native soils are considered to be suitable for re-use as backfill in the service trenches provided their moisture contents at the time of construction are at or near (±2%) optimum. The organics in the fill and disturbed/reworked native soils must be separated and discarded from the excavated fill and disturbed soils.

The clayey till, especially when its consistency is hard, is likely to be excavated in cohesive chunks or blocks and will be difficult to compact in confined areas. For use as backfill, the clayey material will have to be pulverized and placed in thin layers. The clayey soils will have to be compacted using heavy equipment suitable for these soils which may be difficult to operate in the narrow confines of the trenches. Unless the clayey materials are properly pulverized and compacted in sufficiently thin lifts post-construction settlements could occur. Their use in narrow trenches such as laterals (where heavy compaction equipment cannot be operated) may not be feasible. In late fall and spring when warm dry weather cannot be guaranteed, it should be assumed that the excavated soils will not be suitable for reuse as trench backfill and allowances should be carried for Granular B backfill instead.

The backfill should be placed in maximum 200 mm thick layers at or near (±2%) their optimum moisture content, and each layer should be compacted to at least 95% SPMDD. The degree of compaction should be increased to 98% within the top 1.0 m of the subgrade. Unsuitable materials such as organic soils, boulders, cobbles, frozen soils, etc. should not be included in the backfill.

The on-site excavated soils and especially the clayey soils should not be used in confined areas (e.g., around catch basins and laterals under roadways) where heavy compaction equipment cannot be operated. The use of imported granular fill together with an appropriate frost taper is required in confined areas and around structures, such as catch basins, basement walls.

Imported granular fill, which can be compacted with hand held equipment, should be used in confined areas. The excavated soils are not considered to be free draining. Where free draining backfill is required, imported granular fill such as OPSS Granular B should be used.

5.4. ENGINEERED FILL

In the areas where earth fill is required for site grading purposes, engineered fill may be constructed below foundations, road, driveways, parking areas, etc.

Based on the borehole information, all the existing fill material and disturbed/reworked native soils must be removed. The base must be thoroughly proof-rolled. Any loose soils detected during the proof rolling must be sub-excavated and replaced with engineered fill. Dewatering will be required for any excavation below groundwater. The stripped native subgrade must be examined and approved by a geotechnical engineer prior to placement of fill.

General guidelines for the placement and preparation of engineered fill are presented in Appendix C. Bearing capacity values of 150 kPa at SLS and 225 kPa at ULS can be used on engineered fill, provided that all the existing fill is removed and replaced with engineered fill and requirements in Appendix C are adhered to.

To reduce the risk of improperly placed engineered compacted fill, full-time supervision of the contractor is a requirement. Procedures can then be initiated to reduce the risk of settlement resulting from under-compacted fill as described below.

The following is a recommended procedure for engineered fill:

1 Prior to site work involving engineered fill, a site meeting to discuss all aspects must be convened. The surveyor, contractor, design engineer and geotechnical engineer must attend the meeting. At this meeting, the limits of the engineered fill will be defined. The contractor must notify all concerned parties the source of all fill material and fill samples must be provided to the geotechnical engineer for review, and approval before fill placement operations commence .

2 Detailed drawings indicating the lower and upper boundary of the engineered fill must be available at the site meeting and be approved by the geotechnical engineer.

3 The building footprint and base of the pad must be defined by offset stakes that remain in place until the footings and service connections are all constructed. Confirmation that the footings are within the pad, service lines are in place, and that the grade conforms to drawings, must be obtained by the owner in writing from the surveyor and geotechnical engineer. Without this confirmation no responsibility for the performance of the structure can be accepted by EnVision. Survey drawing of the pre and post fill locations and elevations will also be required.

4 The area must be stripped of all topsoil and fill materials and the exposed subgrade must be proof-rolled. Soft spots must be dug out. The stripped native subgrade must be examined and approved by a geotechnical engineer prior to placement of fill.

5 Based on results of water content tests, the existing fill appears to be wet of optimum moisture content and will require significant drying in the form of aeration prior to its reuse. The organics in the fill must be separated and discarded. The fill to be reused must be selected by a geotechnical technician.

6 The approved engineered fill must be compacted to 100% Standard Proctor Maximum Dry Density throughout. Granular fill is preferred since it will be easier to compact in the winter months. Engineered fill, which is susceptible to formation of ice lenses and difficult to compact in freezing temperatures should not be placed (where it will support footings) during the winter months. Engineered fill compacted to 100% SPMDD will settle under its own weight approximately 0.5% of the fill height and the structural engineer must be aware of this settlement. In addition to the settlement of the fill, additional settlement due to consolidation of the underlying soils from the structural and fill loads may occur.

7 Full-time geotechnical inspection by a geotechnical engineer during placement of engineered fill is required. Work cannot commence or continue without the presence of geotechnical representative.

8 The fill must be placed such that the specified geometry is achieved. Refer to sketches in Appendix C for minimum requirements. Take careful note that the projection of the compacted pad beyond the footing at footing level is a minimum of 2 m. The base of the compacted pad extends 2 m plus the depth of excavation beyond the edge of the footing.

9 All excavations must be done in accordance with the Occupational Health and Safety Regulations of Ontario.

10 After completion of the pad a second contractor may be selected to install footings. All excavations must be backfilled under full time supervision by a geotechnical engineer to the same degree as the engineered fill pad. Surface water cannot be allowed to pond in excavations or to be trapped in clear stone backfill. Clear stone backfill can only be used with the approval of a geotechnical engineer.

11 After completion of compaction, the surface of the pad must be protected from disturbance from traffic, rain, and frost.

12 If there is a delay in construction, the engineered fill pad must be inspected and accepted by the geotechnical engineer. The location of the structure must be reconfirmed that it remains within the pad.

13 The inorganic clayey silt, silty sand and sandy silt are considered suitable for use as engineered fill, provided that their moisture contents at the time of construction are at or near optimum. As mentioned before in this report, the clayey soils are likely to be excavated in cohesive chunks or blocks and will be difficult to compact. They should be pulverized and placed in thin layers not exceeding 150 to 200 mm and compacted using heavy equipment suitable for these types of soils (e.g. heavy sheep's foot compactors).

5.5. FOUNDATIONS

It is understood that the proposed single storey industrial buildings will consist of slab on grade structures. At the time of preparing this report, the finished floor elevations of these proposed buildings are not known to us.

All footings exposed to seasonal freezing conditions must have at least 1.4 metres of soil cover for frost protection.

The undisturbed native very stiff to hard or compact to dense soils, beneath any fill and disturbed native loose or firm to stiff soils, encountered in the boreholes are suitably competent to support the proposed buildings on conventional spread footings. Excavation to construct footings on native competent soils may require groundwater control. For more comments on groundwater control, refer to Section 5.3.1 of the report.

Based on the information from boreholes, it can be assumed that the spread and strip footings founded on undisturbed native very stiff to hard or compact to dense soils can be designed for a bearing capacity of 200 kPa at SLS (Serviceability Limit State), and for a factored geotechnical resistance of 300 kPa at ULS (Ultimate Limit State). All existing fill and loose or soft to firm soils must be removed and verification of removals documented by qualified geotechnical personnel.

Alternatively, the proposed buildings can also be supported by spread and strip footings founded on engineered fill for a bearing capacity of 150 kPa at the serviceability limit states (SLS) and for a factored geotechnical resistance of 225 kPa at the ultimate limit states (ULS), provided all requirements in Appendix C are adhered to.

Foundations designed to the specified bearing capacities at SLS are expected to settle less than 25 mm total and 19 mm differential.

Where it is necessary to place footings at different levels, the upper footing must be founded below an imaginary 10 horizontal to 7 vertical line drawn up from the base of the lower footing. The lower footing must be installed first to help minimize the risk of undermining the upper footing.

It should be noted that the recommended bearing capacities have been calculated by EnVision from the borehole information for the preliminary design stage only. The investigation and comments are necessarily on-going as new information of the underground conditions becomes available. For example, more specific information is available with respect to conditions between boreholes when foundation construction is underway. The interpretation between boreholes and the recommendations of this report must therefore be checked through field inspections provided by EnVision to validate the information for use during the construction stage.

5.6. SLAB ON GRADE AND PERMANENT DRAINAGE

The floor slab can be supported on grade provided all the existing fill materials and any surficially softened / disturbed native soil are removed and replaced with Granular 'B' Type 1 or 2 and the base is thoroughly compacted, then proof rolled. The granular fill should be placed in shallow lifts of 200mm and compacted to 98 percent of Standard Proctor Maximum Dry Density (SPMDD).

A capillary break should be constructed below the base of the concrete slab. The capillary break should consist of 200m of 19mm clear crushed stone (OPSS1010) with no fines.

Underfloor drainage is not anticipated provided the slab on grade is constructed on engineered fill with the specified capillary break and the finished floor elevation is at least 300mm above the exterior grades.

A filtered perimeter foundation (footing) subdrain must be installed around the face of the footing in accordance with the Ontario Building Code. Conceptual details of the foundation drainage system are illustrated in the attached Drawing No. 3. The foundation subdrain system must drain by gravity to a frost-free positive outlet, in accordance with the Town's Sewer By-Laws.

5.7. LATERAL EARTH PRESSURES ON PERMANENT FOUNDATION WALLS

The lateral earth pressures acting on foundation walls may be calculated using an earth pressure coefficient (K) value of 0.45 and unit weight of soil of 21 kN/ m^3.

5.8. EARTHQUAKE CONSIDERATIONS

Based on the existing borehole information and according to Table 4.1.8.4.A of OBC 2012, the subject site for the proposed buildings with slab on grade structures supported on native soils, the seismic site class can be taken as Class 'D'.

5.9. STORMWATER MANAGEMENT POND

It is understood that a storm water management pond will be constructed for the proposed development in the southwestern portion of the site. Two (2) boreholes BH24-1 and BH24-2 were drilled to a depth of 8.2m below ground surface in the vicinity of the proposed pond.

It is also understood that the design details of the pond are not available at the time of writing this report. Therefore, the recommendations provided in this report are preliminary in nature.

Based on the borehole information, the excavated soils for the pond will mainly consist of disturbed soils of sandy silt to silty sand and clayey silt texture and native soils consisting of silty clay till to clayey silt till. If the base of the pond is situated in stiff to hard silty clay till to clayey silt till, it is anticipated that the pond will not require a liner. Envision must review the final pond design to confirm the requirement for a liner.

For preliminary design purposes, the maximum side slopes of 4H:1V are recommended below the normal high groundwater level. Interior slopes above the normal high groundwater table could be constructed to a maximum of 3H:1V. A review of groundwater levels and slope stability should be conducted once preliminary grades and pond geometry are decided.

Groundwater level measured in the monitoring well installed in Borehole BH24-1 was at a depth of 6.3m, corresponding to Elev. 265.6m which may not have equilibrated with the stabilized piezometric levels at the time of the readings given the low permeability of the formations into which the monitoring well was screened. A longer period of observation would be needed to determine the groundwater levels.

Excavation of the overburden material can be carried out with heavy hydraulic backhoe. Any excavation in cohesionless soils below groundwater table will require positive dewatering using well points or eductors. Otherwise, it will result in an unstable base and flowing sides.

It should be noted that the till is a non-sorted sediment and therefore may contain boulders. Provisions must be made in the excavation contract for the removal of possible boulders in the till or obstructions in the fill material.

5.10. SOIL CORROSIVITY POTENTIAL AND SULPHATE ATTACK

Four (4) selected soil samples were submitted to ALS laboratories for laboratory analyses of pH, resistivity, redox potential, sulphide, chloride, along with water soluble sulphate concentrations to determine the corrosivity potential of the soil towards ferrous metal and the potential for sulphate attack on buried Portland cement concrete. Lab certificates of analyses are attached in Appendix D.

Table 5-2 summarizes the ANSI/AWWA rating for the tested soil samples for the potential for corrosion towards buried grey or ductile cast iron pipe and pipe appurtenances.

Table 5-2: A Summary of Results of ANSI/AWWA Soil Corrosivity Potential Rating

SAMPLE I.D.	SOIL TYPE	RESISTIVITY (ohms-cm)	PH	REDOX POTENTIAL (mv)	SULPHIDE (mg/Kg or (µg/g)	CHLORIDE (µg/g)	MOISTURE CONTENT (%)	TOTAL POINTS
BH24-5 SS2	SILTY CLAY TILL	5590 (0)	7.80 (0)	341 (0)	0.81 (2)	14.1 (0)	10.6 (1)	3
BH24-5 SS4	SILTY CLAY TILL	4720 (0)	7.8 (0)	340 (0)	0.68 (2)	23.2 (0)	11.6 (1)	3
BH24-13 SS3	SILTY CLAY TILL	4750 (0)	7.71 (0)	359 (0)	0.65 (2)	29.3 (0)	10.2 (1)	3
BH24-15 SS3	SANDY SILT TILL	6850 (0)	7.71 (0)	366 (0)	<0.22 (2)	7.7 (0)	11.2 (1)	3

A score of 10 points or more indicates soils potentially supportive of corrosion. Scoring of less than 10 on the basis of these test results is indicative, according to Table A.1 of ANSI/AWWA, C105/A21.5-10, of soil which is not unusually corrosive towards gray or ductile cast iron pipe.

There may be other over-riding factors that govern the need for corrosion protection, such as stray currents, application of de-icing salts to the roadway, etc. and these may play an important role in determining the protection measures needed.

The soil samples noted above were also submitted for laboratory analysis of water-soluble sulphates to assess the potential for degradation of buried concrete in contact with the encountered soils. The test results are summarized in *Table 5-3*. The soluble sulphate concentration of the tested samples ranged from <20 to 38 ug/g (20 to 38 ppm or <0.0020% to 0.0038%). These results suggest the potential for sulphate attack on concrete is considered "negligible" based on CSA Standard A23.1, *Concrete Materials and Methods of Concrete Construction*. It should, however, be noted that the final selection of the type of concrete should be made considering all design considerations.

Table 5-3: A Summary of Water-Soluble Soil Sulphate Content Test Results

SAMPLE I.D.	SOIL TYPE	PH	SULPHATE CONTENT (µg/g)
BH24-5 SS2	SILTY CLAY TILL	7.80	<20
BH24-5 SS4	SILTY CLAY TILL	7.80	38
BH24-13 SS3	SILTY CLAY TILL	7.71	24
BH24-15 SS3	SANDY SILT TILL	7.71	<20

6. GENERAL COMMENTS AND LIMITATIONS OF REPORT

EnVision Consultants Ltd. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, EnVision will assume no responsibility for interpretation of the recommendations in the report.

The comments given in this report are intended only for the preliminary guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc., would be much greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations, as well as their own interpretations of the factual borehole and test pit results, so that they may draw their own conclusions as to how the subsurface conditions may affect them.

This report is intended solely for the Client named. The material in it reflects our best judgment in light of the information available to EnVision at the time of preparation. Unless otherwise agreed in writing by EnVision Consultants Ltd. it shall not be used to express or imply warranty as to the fitness of the property for a particular purpose. No portion of this report may be used as a separate entity, it is written to be read in its entirety.

The conclusions and preliminary recommendations given in this report are based on information determined at the test hole locations. The information contained herein in no way reflects on the environment aspects of the project, unless otherwise stated. Subsurface and groundwater conditions between and beyond the test holes may differ from those encountered at the test hole locations, and conditions may become apparent during construction, which could not be detected or anticipated at the time of the site investigation. The benchmark and elevations used in this report are primarily to establish relative elevation differences between the test hole locations and should not be used for other purposes, such as grading, excavating, planning, development, etc.

The preliminary design recommendations given in this report are applicable only to the project described in the text and then only if constructed substantially in accordance with the details stated in this report.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EnVision Consultants Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We accept no responsibility for any decisions made or actions taken as a result of this report unless we are specifically advised of and participate in such action, in which case our responsibility will be as agreed to at that time.

6.1. SIGNATURES

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6.2. QUALIFIER

EnVision prepared this report solely for the use of the intended recipient in accordance with the professional services agreement. In the event a contract has not been executed, the parties agree that the EnVision General Terms and Conditions, which were provided prior to the preparation of this report, shall govern their business relationship.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment. The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the report are based on the observations and/or information available to EnVision at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by EnVision and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

EnVision disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, EnVision reserves the right to amend or supplement this report based on additional information, documentation or evidence.

EnVision makes no other representations whatsoever concerning the legal significance of its findings. The intended recipient is solely responsible for the disclosure of any information contained in this report. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. EnVision does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report.

EnVision has provided services to the intended recipient in accordance with the professional services agreement between the parties and in a manner consistent with that degree of care, skill and diligence normally provided by members of the same profession performing the same or comparable services in respect of projects of a similar nature in similar circumstances. It is understood and agreed by EnVision and the recipient of this report that EnVision provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by EnVision and the recipient of this report that EnVision makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

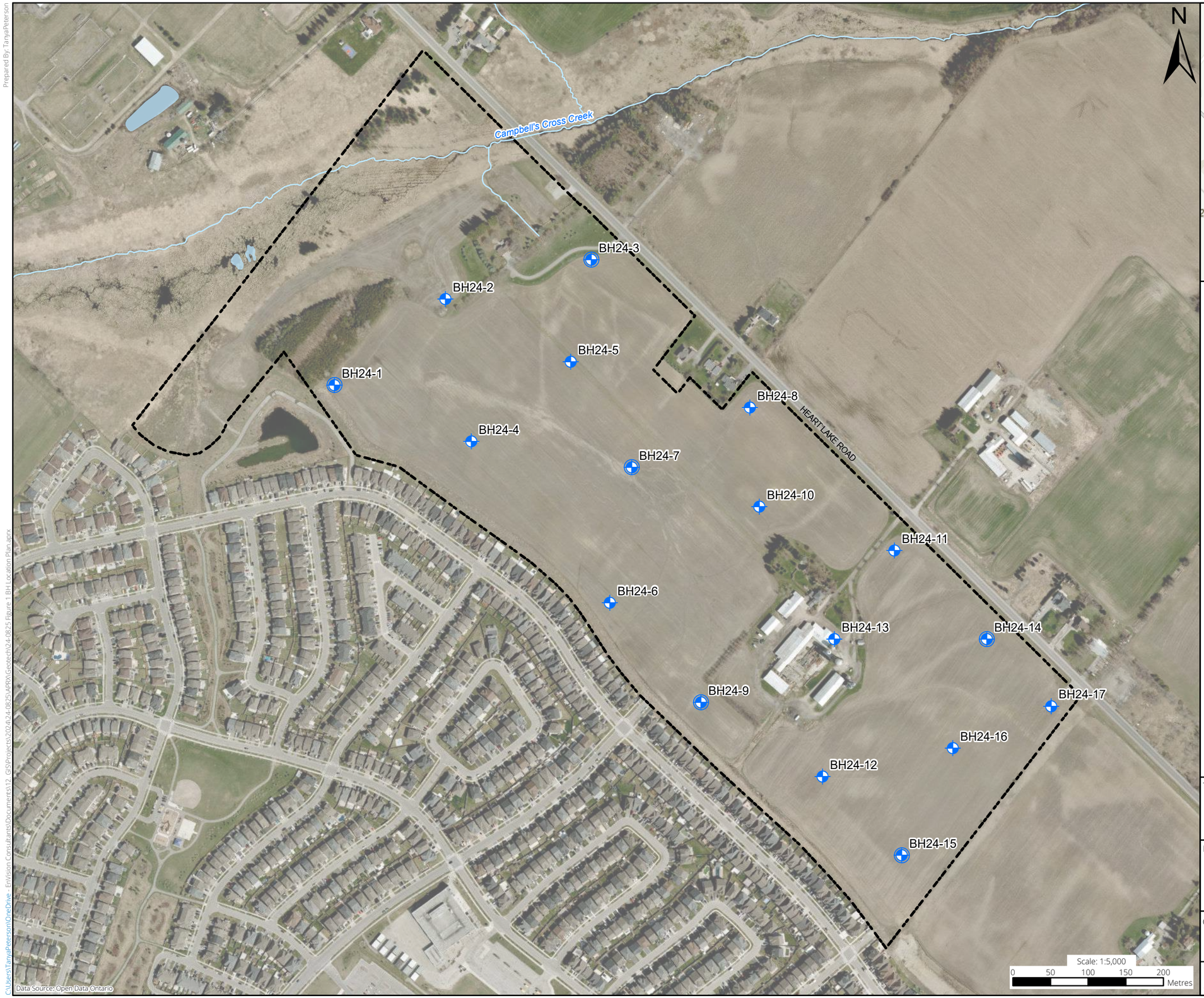
In preparing this report, EnVision has relied in good faith on information provided by others, as noted in the report. EnVision has reasonably assumed that the information provided is correct and EnVision is not responsible for the accuracy or completeness of such information.

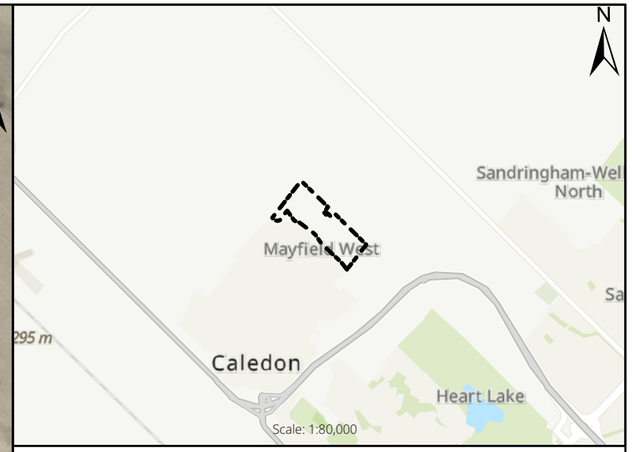
Unless otherwise agreed in writing by EnVision, the Report shall not be used to express or imply warranty as to the suitability of the site for a particular purpose. EnVision disclaims any responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions /or costs.

This limitations statement is considered an integral part of this report.

DRAWINGS

Drawing No.1	Borehole Location Plan
Drawing No. 2	Generalized Subsurface Profile
Drawing No. 3	Conceptual Drainage Recommendations





LEGEND

- SITE BOUNDARY
- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION

TITLE

BOREHOLE LOCATION PLAN

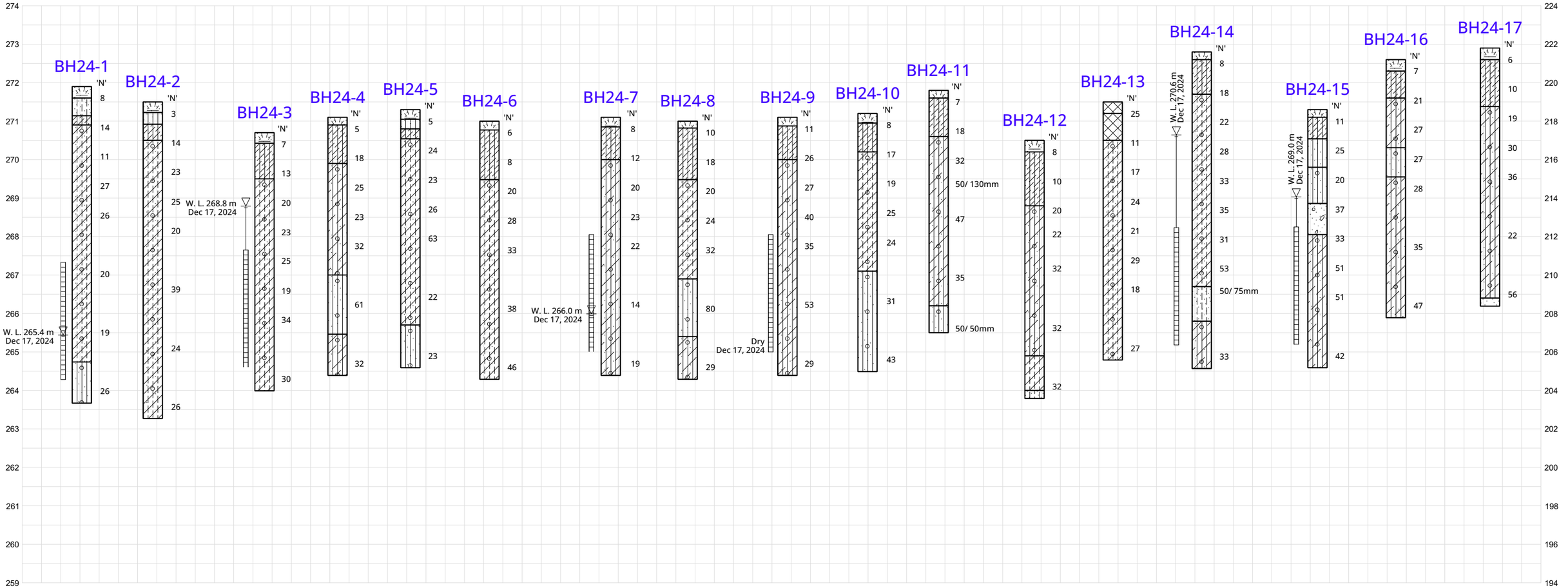
PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
12506 HEART LAKE ROAD
CALEDON, ONTARIO

CLIENT

TRIBAL PARTNERS (CANADA) INC. AND
TPI ACQUISITIONS II INC.

PROJECT NO.	DATE	PREPARED BY	APPROVED BY	DRAWING
24-0825	JANUARY 2025	TP	MB	1



LEGEND

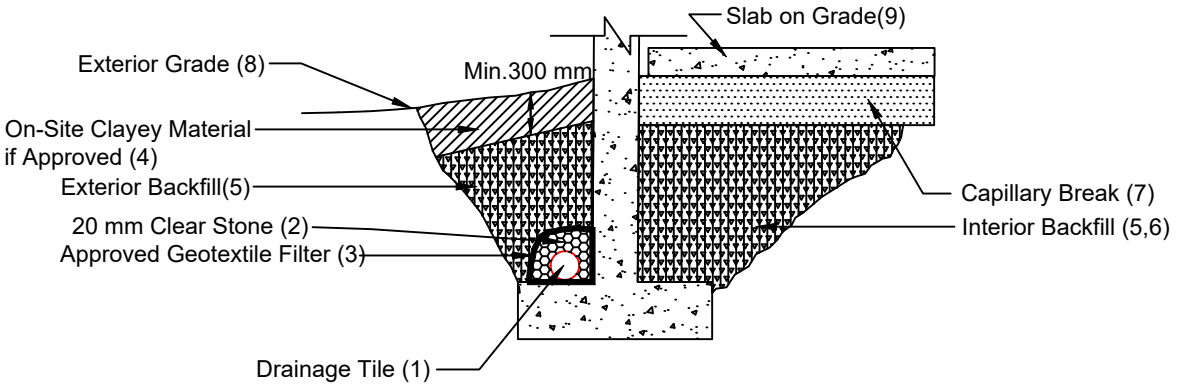
- Topsoil
- Fill
- Sand
- Sand and Gravel
- Silty Sand
- Sandy Silt
- Silty Clay
- Clayey Silt
- Clayey Silt Till
- Silty Clay Till
- Sandy Silt Till

TITLE
Generalize Subsurface Profile

PROJECT
Geotechnical Due Diligence Investigation
12506 Heart Lake Road, Caledon, Ontario

CLIENT
Tribal Partners, (Canada) Inc.

PROJECT NO.	DATE	PREPARED BY	APPROVED BY	DRAWING NO
24-0825	January 08, 2024	ZM	MB	1



EXTERIOR FOOTING

Notes

1. Drainage tile to consist of 100 mm (4") diameter weeping tile or equivalent perforated pipe leading to a positive sump or outlet.
2. 20 mm (3/4") clear stone - 150 mm (6") top and side of drain. If drain is not on footing, place100 mm (4 inches) of stone below drain .
3. Wrap the clear stone with an approved geotextile filter (Terrafix 270R or equivalent).
4. The on-site clayey material, if approved, can be used as backfill in the upper 300 mm.
5. The interior and exterior fill adjacent to foundation walls should be OPSS Granular 'B' Type I. Compact to at least 98% SPMDD.
6. Do not use heavy compaction equipment within 450 mm (18") of the wall. Do not fill or compact within 1.8 m (6') of the wall. Place fill on both sides simultaneously.
7. Capillary break to be at least 200 mm (8") of compacted clear 20 mm (3/4") stone or equivalent free draining material. A vapour barrier may be required for specialty floors (consult with architect).
8. Exterior grade to slope away from building at min. 2%.
9. Slab on grade should not be structurally connected to the wall or footing.
10. Review the geotechnical report for specific details.

	TITLE: Drainage and Backfill Recommendations - Slab on Grade Construction Without Underfloor Drainage	PROJECT: Geotechnical Due Diligence Investigation, 12506 Heart Lake Road, Caledon, Ontario				
		CLIENT: Tribal Partners, (Canada) Inc.				
		PROJECT NO.: 24-0825	DATE: January 08, 2024	PREPARED BY: ZM	APPROVED BY: MB	DRAWING NO: 3

APPENDIX A:

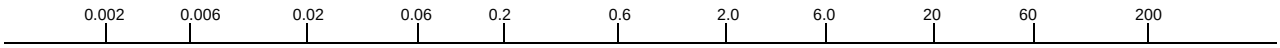
Notes on Sample Descriptions (Drawing 1A); Terms used in the Record of Borehole Logs (Drawing 1B); Record of Borehole Sheets (BH24-1 to BH24-17)

Drawing 1A: Notes On Sample Descriptions

1. All sample descriptions included in this report generally follow the Unified Soil Classification. Laboratory grain size analyses provided by EnVision also follow the same system. Different classification systems may be used by others, such as the system by the International Society for Soil Mechanics and Foundation Engineering (ISSMFE). Please note that, with the exception of those samples where a grain size analysis and/or Atterberg Limits testing have been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		



EQUIVALENT GRAIN DIAMETER IN MILLIMETRES

CLAY (PLASTIC) TO	FINE	MEDIUM	CRS.	FINE	COARSE
SILT (NONPLASTIC)	SAND			GRAVEL	

UNIFIED SOIL CLASSIFICATION

2. Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional preliminary geotechnical site investigation.

3. Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

Drawing 1B

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Explanation of Terms Used in the Record of Borehole

Sample Type

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO	Drive open
DS	Dimension type sample
FS	Foil sample
NR	No recovery
RC	Rock core
SC	Soil core
SS	Spoon sample
SH	Shelby tube sample
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample

Penetration Resistance

Standard Penetration Resistance (SPT), N:
The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in) required to drive a 50 mm (2 in) drive open sampler for a distance of 300 mm (12 in).

WH – Samples sinks under "weight of hammer"

Dynamic Cone Penetration Resistance, N_d:
The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in) to drive uncased a 50 mm (2 in) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in).

Textural Classification of Soils (ASTM D2487-10)

Classification	Particle Size
Boulders	> 300 mm
Cobbles	75 mm - 300 mm
Gravel	4.75 mm - 75 mm
Sand	0.075 mm - 4.75 mm
Silt	0.002 mm - 0.075 mm
Clay	<0.002 mm(*)

(*) Canadian Foundation Engineering Manual (4th Edition)

Coarse Grain Soil Description (50% greater than 0.075 mm)

Terminology	Proportion (*)
Trace	0-10%
Some	10-20%
Adjective (e.g. silty or sandy)	20-35%
And (e.g. sand and gravel)	> 35%

(*) Canadian Foundation Engineering Manual (4th Edition)

Soil Description

a) Cohesive Soils(*)

Consistency	Undrained Shear Strength (kPa)	SPT "N" Value
Very soft	<12	0-2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very stiff	100-200	15-30
Hard	>200	>30

(*) Hierarchy of Shear Strength prediction
1. Lab triaxial test
2. Field vane shear test
3. Lab. vane shear test
4. SPT "N" value
5. Pocket penetrometer

b) Cohesionless Soils

Density Index (Relative Density)	SPT "N" Value
Very loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very dense	>50

Soil Tests

w	Water content
w_p	Plastic limit
w_l	Liquid limit
C	Consolidation (oedometer) test
CID	Consolidated isotropically drained triaxial test
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement
D_R	Relative density (specific gravity, Gs)
DS	Direct shear test
ENV	Environmental/ chemical analysis
M	Sieve analysis for particle size
MH	Combined sieve and hydrometer (H) analysis
MPC	Modified proctor compaction test
SPC	Standard proctor compaction test
OC	Organic content test
U	Unconsolidated Undrained Triaxial Test
V	Field vane (LV-laboratory vane test)
γ	Unit weight

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LOG OF BOREHOLE BH24-1

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-21-2024 to Nov-21-2024
COMPILED BY FL
BH LOCATION: N 4846386 E 594469
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	CGD (ppm) 40 80 120 160	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.9	Ground Surface												
0.0 / 271.6	**TOPSOIL:** 300mm		1A	SS	8								
0.3 / 271.1	**SILTY SAND:** trace clay, trace rootlets, brown, moist, loose. (weathered/disturbed)		1B	SS									
0.8 / 270.9	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace rootlets, brown, moist, stiff. (disturbed)		2	SS	14		271						
1.0	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, stiff to very stiff.		3	SS	11		270						
							Bentonite						
			4	SS	27					CL			4 27 45 24
	grey below 3.1m		5	SS	26		269						
							268						
							Sand						
	occasional oxidized		6	SS	20		267						Auger grinding
							266						
	sand seams below 6.1m						Screen						
			7	SS	19		W. L. 265.4 m Dec 17, 2024						
							265						
264.7													
7.2	**SANDY SILT TILL:** trace to some clay, trace gravel, with silt seams, grey, wet, compact.												
			8	SS	26		Bentonite						3 21 66 10
263.7													
8.2	**END OF BOREHOLE**												

Notes:
1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 4.57m to 7.62m.

Ground Water Measurement in Well:

Date	W.L. Depth (mbgs)
Dec. 13, 2024	6.25
Dec. 17, 2024	6.46

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-REV 24-0825 - JAN-07-2025.GPJ 25-1-7

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LOG OF BOREHOLE BH24-2

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-21-2024 to Nov-21-2024
COMPILED BY FL
BH LOCATION: N 4846500 E 594617
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	PID (ppm) 40 80 120 160	CGD (ppm) 40 80 120 160	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.5	Ground Surface												
0.0 / 271.2	**TOPSOIL:** 275mm		1A	SS	3								
0.3 / 270.9	**SANDY SILT:** trace clay, trace topsoil/rootlets, dark brown, moist, very loose. (weathered/disturbed)		1B	SS			271						
0.6 / 270.5	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, brown, moist, stiff. (disturbed)		2	SS	14								
1.0	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, stiff to hard.		3	SS	23		270						
			4	SS	25		269						
			5	SS	20		268			CL			Auger grinding 4 36 42 18
	occasional oxidized ---------- grey		6	SS	39		267						
			7	SS	24		266						
			8	SS	26		265						
263.3							264						
8.2	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH24-3

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-21-2024 to Nov-21-2024
COMPILED BY FL
BH LOCATION: N 4846553 E 594811
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm)	Soil Head Space Vapors CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT; WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
270.7	Ground Surface							40 80 120 160	40 80 120 160	10 20 30			
0.0 / 270.4	**TOPSOIL:** 275mm		1	SS	7		270						
0.3	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, firm to stiff. (disturbed)												
1 / 269.5	brown below 0.9m		2	SS	13								
1.2	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, stiff to hard.						Bentonite						
2			3	SS	20	▽	269			CL			5 30 44 21
							W. L. 268.8 m Dec 17, 2024						
			4	SS	23		268						
3							Sand						
			5	SS	25								Auger grinding
							267						
4	occasional oxidized ---------- grey		6	SS	19								
							Screen						
			7	SS	34		266						
5													
							265						
6													
			8	SS	30		Bentonite						
264.0							264						
6.7	**END OF BOREHOLE**												

Notes:
1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 3.05m to 6.09m.

Ground Water Measurement in Well:

Date	W.L. Depth (mbgs)
Dec. 04, 2024	3.24
Dec. 13, 2024	2.92
Dec. 17, 2024	1.91

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

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

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LOG OF BOREHOLE BH24-4

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846311 E 594651
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	Soil Head Space Vapors CGD (ppm) 40 80 120 160	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.1	Ground Surface												
270.9 0.0	**TOPSOIL:** 200mm						271						
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, firm to very stiff. (disturbed)		1	SS	5								
1 269.9	silty sand lenses at 1.0m		2A	SS	18								
1.2	**CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, occasional oxidized, moist, very stiff to hard.		2B	SS			270						
2			3	SS	25								
	sand seams at 2.3m		4	SS	23		269						
3			5	SS	32		268			CL/ML			9 39 37 15
4 267.0													Auger grinding
4.1	**SANDY SILT TILL:** trace gravel, trace to some clay, greyish brown, moist, very dense.		6	SS	61		267						
5 265.5							266						
5.6	**CLAYEY SILT TILL:** sandy, trace gravel, grey, moist, hard.												
6			7	SS	32		265						
264.4													
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH24-5

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846417 E 594783
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION
271.3	Ground Surface						
0.0 / 271.1	**TOPSOIL:** 250mm						
0.3 / 270.8	**SANDY SILT:** trace clay, trace topsoil/rootlets, dark brown, moist, loose. (weathered/disturbed)		1	SS	5		271
0.5 / 270.5	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, brown, moist, firm. (disturbed)		2	SS	24		270
0.8	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, very stiff to hard.		3	SS	23		269
			4	SS	26		268
			5	SS	63		267
	occasional oxidized ---------- grey		6	SS	22		266
265.7							
5.6	**SANDY SILT TILL:** trace to some clay, trace gravel, grey, wet, compact.		7	SS	23		265
264.6							
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling. 1) Groundwater was at a depth of 6.1m during drilling.						

Soil Head Space Vapors: PID (ppm) 40 80 120 160; CGD (ppm) 40 80 120 160

PLASTIC LIMIT W_P | NATURAL MOISTURE CONTENT W | LIQUID LIMIT W_L; WATER CONTENT (%) 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-REV 24-0825 - JAN-07-2025.GPJ 25-1-7

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-6

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-19-2024 to Nov-19-2024
COMPILED BY FL
BH LOCATION: N 4846097 E 594835
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	Soil Head Space Vapors CGD (ppm) 40 80 120 160	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.0	Ground Surface												
0.0 / 270.8	**TOPSOIL:** 230mm												
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, sandy silt lenses, brown, moist, firm to stiff. (disturbed)		1	SS	6								
1	sandy silt seams /lenses at 1.0m		2	SS	8		270						
269.5													
1.5	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, occasional oxidized, greyish brown, moist, very stiff to hard.		3	SS	20					CL			5 31 46 18
2			4	SS	28		269						
3			5	SS	33		268						
4							267						
5			6	SS	38		266						Auger grinding
6							265						
264.3			7	SS	46								
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\circ^{\varepsilon_3}$ ε_3=3% Strain at Failure

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-7

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846277 E 594864
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION
271.1	Ground Surface						
0.0 / 270.9	**TOPSOIL:** 250mm						271
0.3	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff. (disturbed)		1	SS	8		
1 / 270.0			2	SS	12		270
1.1	**CLAYEY SILT TILL/SILTY CLAY TILL:** sandy, trace gravel, greyish brown, moist, stiff to very stiff.					Bentonite	
			3	SS	20		269
			4	SS	23		
						Sand	268
			5	SS	22		
							267
	occasional oxidized					Screen	
	----------						
	contains sand seams, grey		6	SS	14		266
						W. L. 266.0 m Dec 17, 2024	
							265
			7	SS	19	Bentonite	
264.4							
6.7	**END OF BOREHOLE**						

Notes:
1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 3.05m to 6.09m.

Ground Water Measurement in Well:

Date	W.L. Depth (mbgs)
Dec. 13, 2024	4.33
Dec. 17, 2024	5.11

Soil Head Space Vapors: PID (ppm) 40 80 120 160; CGD (ppm) 40 80 120 160

PLASTIC LIMIT W_P | NATURAL MOISTURE CONTENT W | LIQUID LIMIT W_L; WATER CONTENT (%) 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%) — GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-R01 24-0825 - JAN-07-2025.GPJ 25-1-7

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LOG OF BOREHOLE BH24-8

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846356 E 595021
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	Soil Head Space Vapors CGD (ppm) 40 80 120 160	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.0	Ground Surface												
270.8 0.0	**TOPSOIL:** 180mm												
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff to very stiff. (disturbed)		1	SS	10								
1			2	SS	18		270						
269.5													
1.5	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, occasional oxidized, greyish brown, moist, very stiff to hard.		3	SS	20								Auger grinding
2							269						
			4	SS	24								
3							268						
			5	SS	32								
266.9							267						
4.1	**SANDY SILT TILL:** some gravel, trace to some clay, greyish brown, moist, very dense.												Auger grinding
5			6	SS	80		266			ML			13 33 44 10
265.4													
5.6	**CLAYEY SILT TILL:** sandy, trace gravel, brownish grey to grey, moist, very stiff.												
6							265						
	grey below 6.3m		7	SS	29								
264.3													
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-9

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4845965 E 594956
CHECKED BY MB

ELEV / DEPTH (m)	DESCRIPTION	NUMBER	TYPE	"N" BLOWS 0.3 m	ELEVATION
271.1	Ground Surface				
0.0 / 270.9	**TOPSOIL:** 225mm				271
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff to very stiff. (disturbed)	1	SS	11	
		2	SS	26	270
270.0 / 1.1	**CLAYEY SILT TILL:** sandy, trace gravel, occasional oxidized, brown, moist, very stiff to hard.				Bentonite
		3	SS	27	269
		4	SS	40	Sand
		5	SS	35	268
	sandy silt till lenses at 4.6m				267
		6	SS	53	Screen
					266
		7	SS	29	265
264.4					Bentonite
6.7	**END OF BOREHOLE**				

Notes:
1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 3.05m to 6.09m.

Ground Water Measurement in Well:

Date	W.L. Depth (mbgs)
Dec. 13, 2024	Dry
Dec. 17, 2024	Dry

Soil Head Space Vapors: PID (ppm) 40 80 120 160; CGD (ppm) 40 80 120 160

PLASTIC LIMIT W_P — NATURAL MOISTURE CONTENT W — LIQUID LIMIT W_L; WATER CONTENT (%) 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)

GR	SA	SI	CL
6	44	38	12

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-10

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846225 E 595034
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	Soil Head Space Vapors CGD (ppm) 40 80 120 160	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.2	Ground Surface												
0.0 / 271.0	**TOPSOIL:** 250mm												
0.3	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff to very stiff. (disturbed)		1	SS	8		271						
270.2			2	SS	17		270						
1.0	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, occasional oxidized, moist, very stiff.		3	SS	19		269						
			4	SS	25					CL			4 37 40 19
			5	SS	24		268						Auger grinding
267.1													
4.1	**SANDY SILT TILL:** some clay, trace gravel, occasional oxidized, greyish brown, moist, dense.		6	SS	31		267						
							266						
	grey below 6.1m		7	SS	43		265						
264.5													
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; $\circ^{\varepsilon_3}$ ε_3=3% Strain at Failure

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-11

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-19-2024 to Nov-19-2024
COMPILED BY FL
BH LOCATION: N 4846166 E 595213
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	PID (ppm) 40 80 120 160	CGD (ppm) 40 80 120 160	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.8	Ground Surface												
0.0 / 271.8	**TOPSOIL:** 200mm												
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, firm to very stiff. (disturbed)		1	SS	7								
1 / 270.6	lenses of disturbed sandy silt at 0.5m		2	SS	18		271						
1.2	**CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, occasional oxidized, moist, hard.		3	SS	32		270						
2	inferred cobble at 2.4m		4	SS	50/ 130mm								Auger grinding
3			5	SS	47		269			CL-ML			Auger grinding 5 41 40 14
4							268						
5 / 266.2			6	SS	35		267						Auger grinding
5.6	**SANDY SILT TILL:** trace clay, trace gravel, greyish brown, moist, very dense.												
6 / 265.5			7	SS	50/ 50mm		266						
6.3	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-REV 24-0825 - JAN-07-2025.GPJ .25-1-7

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-12

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-19-2024 to Nov-19-2024
COMPILED BY FL
BH LOCATION: N 4845866 E 595118
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION
270.5	Ground Surface						
0.0 / 270.2	**TOPSOIL:** 300mm						
0.3	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff to very stiff. (disturbed)		1	SS	8		
	contains sandy silt lenses at 1.2m		2	SS	10		
268.8							
1.7	**CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, very stiff to hard.		3	SS	20		
			4	SS	22		
			5	SS	32		
	occasional oxidized						
	grey		6	SS	32		
264.9							
5.6	**SILTY CLAY:** trace sand, grey, moist, hard.		7A	SS	32		
264.0							
6.5 / 263.8	**SILTY SAND:** trace clay, grey, wet, dense.		7B	SS			
6.7	**END OF BOREHOLE**						

Notes:
1) Borehole was open upon completion of drilling.
1) Groundwater was at a depth of 6.5m during drilling.

Soil Head Space Vapors: PID (ppm) 40 80 120 160; CGD (ppm) 40 80 120 160

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

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-REV 24-0825 - JAN-07-2025.GPJ 25-1-7

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-13

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-20-2024 to Nov-20-2024
COMPILED BY FL
BH LOCATION: N 4846045 E 595336
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors: PID (ppm)	Soil Head Space Vapors: CGD (ppm)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.5	Ground Surface												
0.0 / 271.2	**FILL:** sand and gravel, trace silt, greyish brown, moist, compact		1A	SS	25								
0.3	**FILL:** silty clay, trace sand, trace organics, stone pieces, dark grey, moist, stiff to very stiff.		1B	SS SS									
270.5			2	SS	11								
1.0	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, stiff to very stiff.		3	SS	17								
			4	SS	24								
			5	SS	21								
	occasional oxidized		6	SS	29					CL			6 34 44 16
	grey		7	SS	18								
			8	SS	27								
264.8													
6.7	**END OF BOREHOLE**												

Notes:
1) Borehole was open upon completion of drilling.

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-14

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-18-2024 to Nov-18-2024
COMPILED BY FL
BH LOCATION: N 4846049 E 595336
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	PID (ppm)	CGD (ppm)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
272.8	Ground Surface							40 80 120 160	40 80 120 160	10 20 30			
0.0 / 272.6	**TOPSOIL:** 200mm												
0.2	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown to brown, moist, stiff to very stiff. (disturbed)		1	SS	8								
1 / 271.7			2	SS	18		272						
1.1	**SILTY CLAY TILL/CLAYEY SILT TILL:** sandy, trace gravel, trace oxidation, greyish brown, moist, very stiff to hard.		3	SS	22		271						
2			4	SS	28	Bentonite W. L. 270.6 m Dec 17, 2024	270						
3	occasional oxidized --- grey		5	SS	33		269						Wet spoon
4			6	SS	35	Sand	268						
5	contains sandy silt seams at 5.3m		7	SS	31		267						
6 / 266.7			8	SS	53	Screen			270	NP			
6.1	**SILTY SAND:** trace clay, trace gravel, contains clayey silt seams, inferred cobbles, grey, moist to wet, very dense.		9	SS	50/ 75mm		266						2 50 44 4
7 / 265.8	**CLAYEY SILT TILL:** sandy, trace gravel, grey, moist, hard.												
8 / 264.6			10	SS	33	Bentonite	265						
8.2	**END OF BOREHOLE** Notes: 1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 4.57m to 7.62m. Ground Water Measurement in Well: Date W.L. Depth (mbgs) Dec. 04, 2024 1.86 Dec. 13, 2024 2.40 Dec. 17, 2024 2.16												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION-SOIL-ROCK-OCTOBER-12-2021.GLB
ENVIRO PID(PPM) AND CGD(PPM)-2016-R01 24-0825 - JAN-07-2025.GPJ 25-1-7

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-15

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-18-2024 to Nov-18-2024
COMPILED BY FL
BH LOCATION: N 4845761 E 595223
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	PID (ppm)	CGD (ppm)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (WATER CONTENT %)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
271.3	Ground Surface												
0.0 / 271.1	**TOPSOIL:** 200mm												
0.2 / 270.5	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown, moist, stiff. (disturbed)		1	SS	11		271						
0.8 / 269.8	**SANDY SILT:** trace gravel, trace clay, trace rootlets, clayey silt lenses, brown, moist, compact. (weathered/disturbed)		2	SS	25		270 Bentonite						
1.5 / 268.9	**SANDY SILT TILL:** some clay, trace gravel, brown, moist, compact.		3	SS	20	▽							
			4A	SS			W. L. 269.0 m Dec 17, 2024						
2.4 / 268.1	**SAND AND GRAVEL:** trace silt, inferred cobbles/boulders, brown, wet, dense.		4B	SS	37		Sand						SS4B+SS5A 45 46 (9)
			5A	SS									Wet spoon
3.3	**CLAYEY SILT TILL:** sandy, trace gravel, occasional oxidized, greyish brown, moist, hard.		5B	SS	33		268						Auger grinding
			6	SS	51					CL-ML			Auger grinding 7 41 38 14
			7	SS	51		267 Screen						
	brownish grey below 6.1m						266						
			8	SS	42		265 Bentonite						
6.7 / 264.6	**END OF BOREHOLE**												

Notes:
1) 50mm diameter monitoring well was installed upon completion of drilling, screened from 3.05m to 6.09m.

Ground Water Measurement in Well:

Date	W.L. Depth (mbgs)
Dec. 13, 2024	2.29
Dec. 17, 2024	2.27

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-16

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-19-2024 to Nov-19-2024
COMPILED BY FL
BH LOCATION: N 4845904 E 595291
CHECKED BY MB

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	Soil Head Space Vapors CGD (ppm) 40 80 120 160	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
272.6	Ground Surface												
0.0 / 272.3	**TOPSOIL:** 300mm												
0.3 / 271.6	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, dark brown, moist, firm to very stiff. (disturbed)		1	SS	7		272						
1.0 / 270.3	**CLAYEY SILT TILL/SILTY CLAY TILL:** sandy, trace gravel, greyish brown, moist, very stiff.		2	SS	21								
			3	SS	27		271						
2.3 / 269.6	**SANDY SILT TILL:** some clay, trace gravel, greyish brown, moist, compact.		4	SS	27		270			NP			8 39 43 10
3.1	**CLAYEY SILT TILL/SILTY CLAY TILL:** sandy, trace gravel, greyish brown, moist, very stiff to hard.		5	SS	28		269						
			6	SS	35		268						
	occasional oxidized						267						
	grey		7	SS	47								
265.9							266						
6.7	**END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling.												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

ENVISION CONSULTANTS LTD

LOG OF BOREHOLE BH24-17

PROJECT: Preliminary Geotechnical (Due Diligence) Investigation
REF. NO.: 24-0825
CLIENT: Tribal Partners, (Canada) Inc.
Method: Solid Stem Augers
ENCL NO.:
PROJECT LOCATION: 12506 Heart Lake Road, Caledon, ON.
Diameter: 152mm
ORIGINATED BY AH
DATUM: Geodetic
Date: Nov-18-2024 to Nov-18-2024
COMPILED BY FL
BH LOCATION: N 4845960 E 595422
CHECKED BY MB

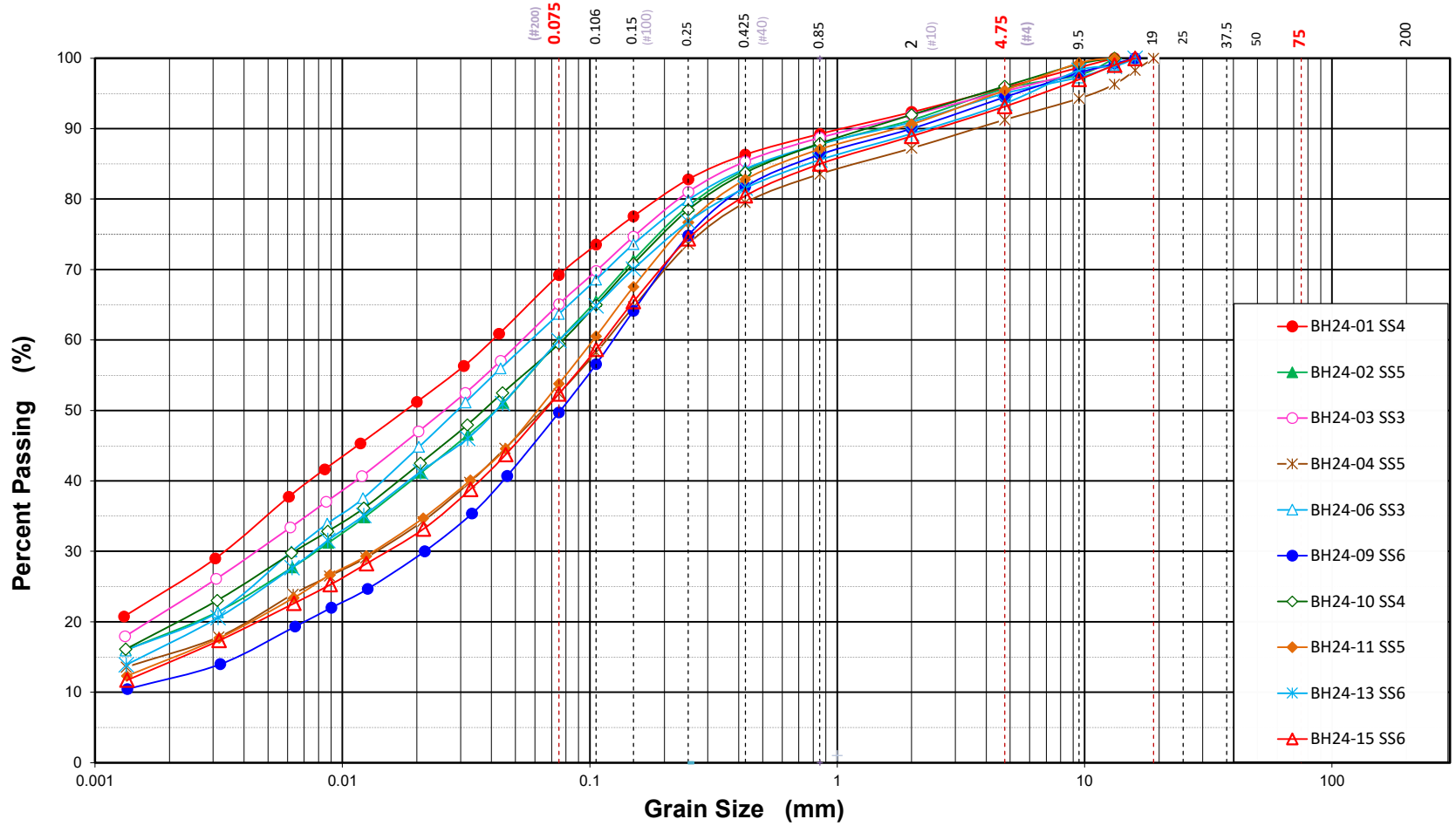
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors PID (ppm) 40 80 120 160	CGD (ppm) 40 80 120 160	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
272.9	Ground Surface												
0.0 / 272.6	**TOPSOIL:** 300mm		1	SS	6								
0.3 / 271.4	**CLAYEY SILT/SILTY CLAY:** sandy, trace gravel, trace topsoil/rootlets, sandy silt lenses, dark brown to brown, moist, firm to stiff. (disturbed)		2	SS	10		272						
1.5	**CLAYEY SILT TILL/SILTY CLAY TILL:** sandy, trace gravel, trace oxidation, greyish brown, moist, very stiff to hard.		3	SS	19		271						
			4	SS	30		270						
			5	SS	36		269						Auger grinding
	occasional oxidized ---------- grey		6	SS	22		268						Auger grinding
			7A	SS	56		267						
266.4 / 6.5 / 266.2 / 6.7	**SAND:** trace to some gravel, trace clay, grey, wet, very dense. **END OF BOREHOLE** Notes: 1) Borehole was open upon completion of drilling. 1) Groundwater was at a depth of 6.5m during drilling.		7B	SS									

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

APPENDIX B: *Grain Size Distribution Curves and Plasticity Chart (Figures 1 to 4)*

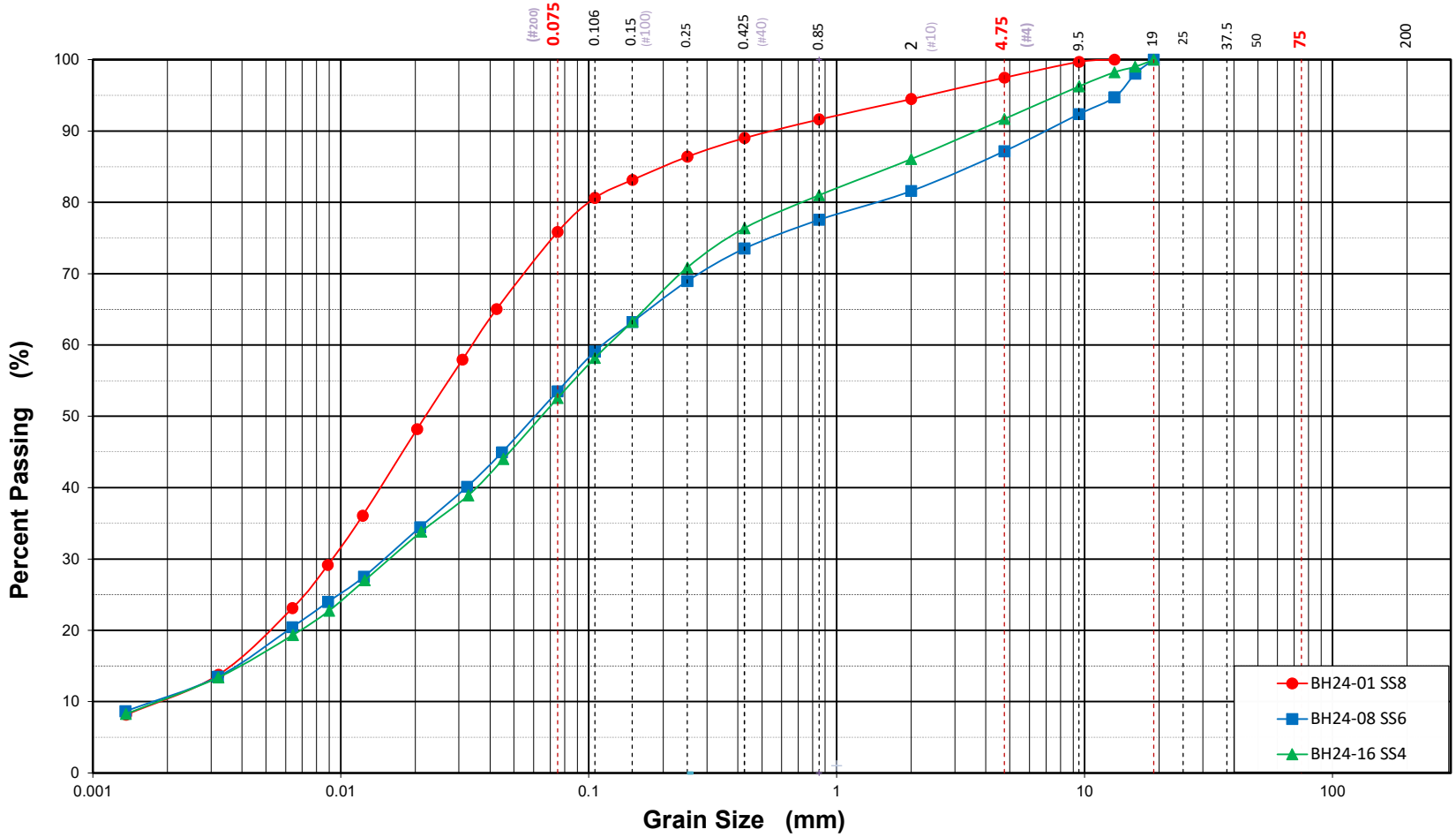
Particle Size Distribution (ASTM-D421/D422)



Silt and Clay		Sand			Gravel		Cobble +
Clay	Silt	Fine	Medium	Coarse	Fine	Coarse	

Project	12506 Heart Lake Road	Project No	24-0825
Location		Date	Dec-09-2024
Client		Figure No	1

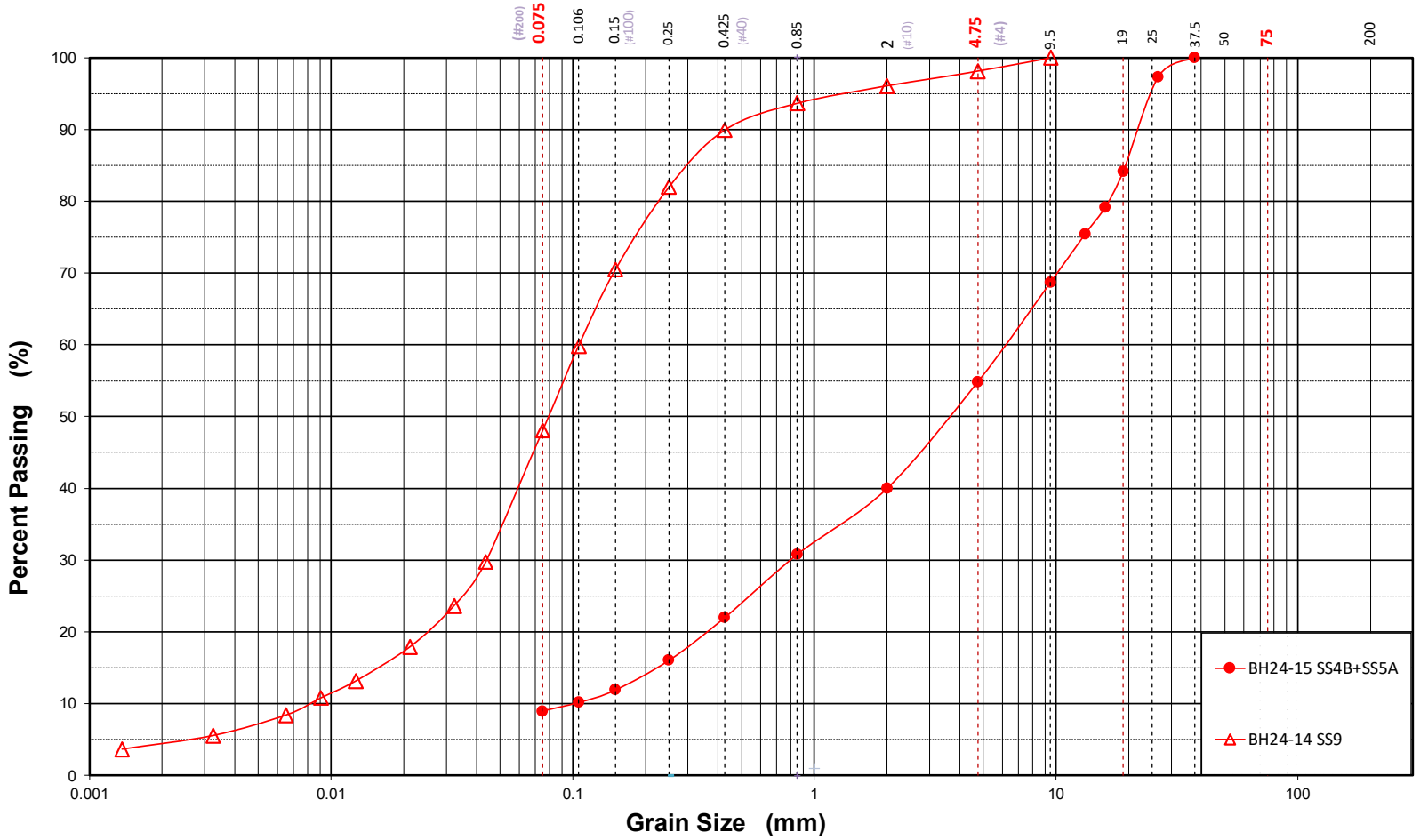
Particle Size Distribution (ASTM-D421/D422)



Silt and Clay		Sand			Gravel		Cobble +
Clay	Silt	Fine	Medium	Coarse	Fine	Coarse	

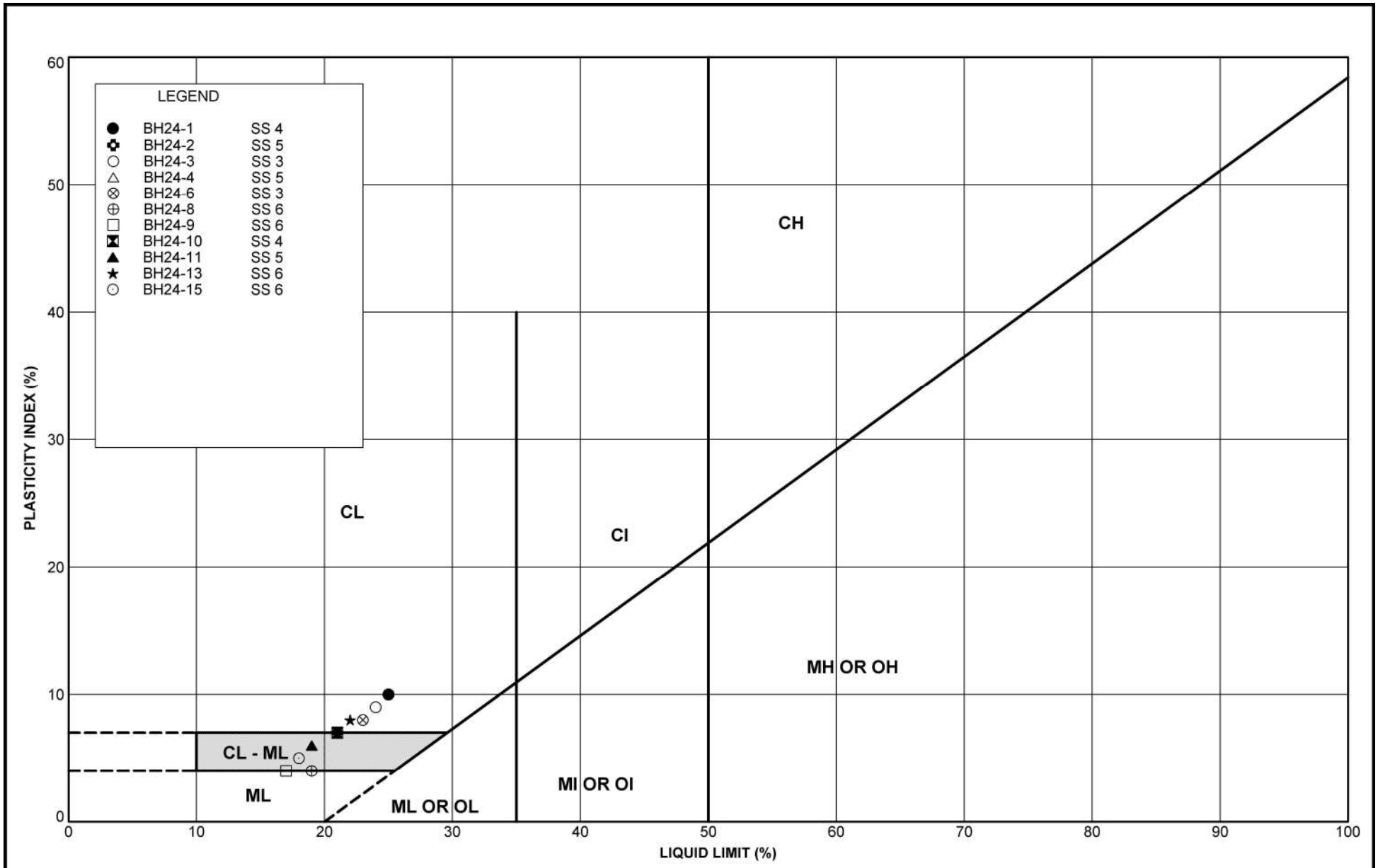
Project	12506 Heart Lake Road	Project No	24-0825
Location		Date	Dec-09-2024
Client		Figure No	2

Particle Size Distribution (ASTM-D421/D422)



Silt and Clay		Sand			Gravel		Cobble +
Clay	Silt	Fine	Medium	Coarse	Fine	Coarse	

Project	12506 Heart Lake Road	Project No	24-0825
Location		Date	Dec-09-2024
Client		Figure No	3



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PLASTICITY CHART

FIGURE NO.	4
JOB NO.	24-0825
DATE	Jan. 8, 2025

APPENDIX C: *Engineered Fill Requirements*

GENERAL REQUIREMENTS FOR ENGINEERED FILL

Compacted imported soil that meets specific engineering requirements and is free of organics and debris and that has been continually monitored on a full-time basis by a qualified geotechnical representative is classified as engineered fill. Engineered fill that meets these requirements and is bearing on suitable native subsoil can be used for the support of foundations.

Imported soil used as engineered fill can be removed from other portions of a site or can be brought in from other sites. In general, most of Ontario soils are too wet to achieve the 100% Standard Proctor Maximum Dry Density (SPMDD) and will require drying and careful site management if they are to be considered for engineered fill. Imported non-cohesive granular soil is preferred for all engineered fill. For engineered fill, we recommend use of OPSS Granular 'B' sand and gravel fill material.

Adverse weather conditions such as rain make the placement of engineered fill to the required degree of density difficult or impossible; engineered fill cannot be placed during freezing conditions, i.e. normally not between December 15 and April 1 of each year.

The location of the foundations on the engineered fill pad is critical and certification by a qualified surveyor that the foundations are within the stipulated boundaries is mandatory. Since layout stakes are often damaged or removed during fill placement, offset stakes must be installed and maintained by the surveyors during the course of fill placement so that the contractor and engineering staff are continually aware of where the engineered fill limits lie. Excavations within the engineered fill pad must be backfilled with the same conditions and quality control as the original pad.

To perform satisfactorily, engineered fill requires the cooperation of the designers, engineers, contractors and all parties must be aware of the requirements. The minimum requirements are as follows, however, the geotechnical report must be reviewed for specific information and requirements.

1. Prior to site work involving engineered fill, a site meeting to discuss all aspects must be convened. The surveyor, contractor, design engineer and geotechnical engineer must attend the meeting. At this meeting, the limits of the engineered fill will be defined. The contractor must make known where all fill material will be obtained from and samples must be provided to the geotechnical engineer for review, and approval before filling begins.

2. Detailed drawings indicating the lower boundaries as well as the upper boundaries of the engineered fill must be available at the site meeting and be approved by the geotechnical engineer.

3. The building footprint and base of the pad, including basements, garages, etc. must be defined by offset stakes that remain in place until the footings and service connections are all constructed. Confirmation that the footings are within the pad, service lines are in place, and that the grade conforms to drawings, must be obtained by the owner in writing from the surveyor and geotechnical engineer. Without this confirmation no responsibility for the performance of the structure can be accepted by a geotechnical engineer. Survey drawing of the pre and post fill location and elevations will also be required.

4. The area must be stripped of all topsoil and fill materials. Subgrade must be proof-rolled. Soft spots must be dug out. The stripped native subgrade must be examined and approved by a geotechnical engineer prior to placement of fill.

5. The approved engineered fill material must be compacted to 100% Standard Proctor Maximum Dry Density throughout. Engineered fill should not be placed during the winter months. Engineered fill compacted to 100% SPMDD will settle under its own weight approximately 0.5% of the fill height and the structural engineer must be aware of this settlement. In addition to the settlement of the fill, additional settlement due to consolidation of the underlying soils from the structural and fill loads will occur and should be evaluated prior to placing the fill.

6. Full-time geotechnical inspection by a geotechnical engineer during placement of engineered fill is required. Work cannot commence or continue without the presence of a geotechnical engineer.

7. The fill must be placed such that the specified geometry is achieved. Refer to the attached sketches for minimum requirements. Take careful note that the projection of the compacted pad beyond the footing at footing level is a minimum of 2 m. The base of the compacted pad extends 2 m plus the depth of excavation beyond the edge of the footing.

8. A bearing capacity of 150 kPa at SLS (225 kPa at ULS) can be used provided that all conditions outlined above are adhered to. A minimum footing width of 500 mm (20 inches) is suggested and footings must be provided with nominal steel reinforcement.

9. All excavations must be done in accordance with the Occupational Health and Safety Regulations of Ontario.

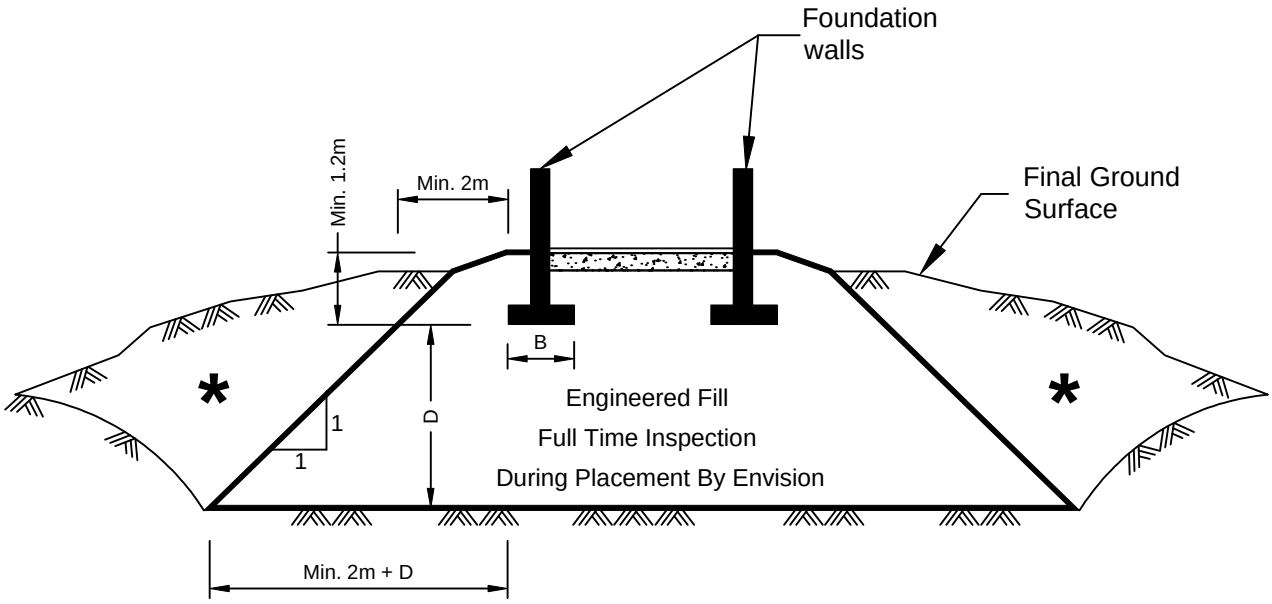
10. After completion of the engineered fill pad a second contractor may be selected to install footings. The prepared footing bases must be evaluated by engineering staff. prior to footing concrete placements. All excavations must be backfilled under full time supervision by a geotechnical engineer to the same degree as the engineered fill pad. Surface water cannot be allowed to pond in excavations or to be trapped in clear stone backfill. Clear stone backfill can only be used with the approval of a geotechnical engineer.

11. After completion of compaction, the surface of the engineered fill pad must be protected from disturbance from traffic, rain and frost. During the course of fill placement, the engineered fill must be smooth-graded, proof-rolled and sloped/crowned at the end of each day, prior to weekends and any stoppage in work in order to promote rapid runoff of rainwater and to avoid any ponding surface water. Any stockpiles of fill intended for use as engineered fill must also be smooth-bladed to promote runoff and/or protected from excessive moisture take up.

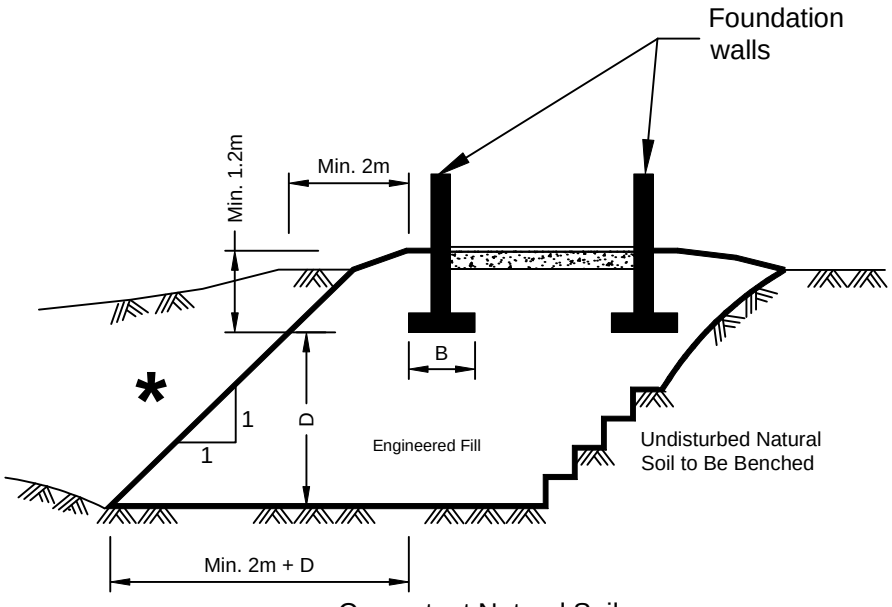
12. If there is a delay in construction, the engineered fill pad must be inspected and accepted by the geotechnical engineer. The location of the structure must be reconfirmed that it remains within the pad.

13. Each project will have its own unique requirements. For example, if perimeter sidewalks are to be constructed around the building, then the projection of the engineered fill beyond the foundation wall may need to be greater.

14. These guidelines are to be read in conjunction with EnVision report attached.



Competent Natural Soil To
Be Confirmed By Envision



Competent Natural Soil

* Backfill in this area to be
as per the Envision report.

APPENDIX D: *Laboratory Certificates of Analyses (Corrosivity and Sulphate)*

CERTIFICATE OF ANALYSIS

Work Order	:	**WT2435704**			
Client	:	**EnVision Consultants Ltd.**	Laboratory	:	ALS Environmental - Waterloo
Contact	:	Maqsooda Bibi	Account Manager	:	Emily Hansen
Address	:	6415 Northwest Drive U37-40 Mississauga Ontario Canada L4V 1X1	Address	:	60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	----	Telephone	:	+1 519 886 6910
Project	:	24-0825	Date Samples Received	:	29-Nov-2024 15:49
PO	:	----	Date Analysis Commenced	:	03-Dec-2024
C-O-C number	:	----	Issue Date	:	10-Dec-2024 13:45
Sampler	:	CLIENT			
Site	:	----			
Quote number	:	2024 Standing Offer			
No. of samples received	:	4			
No. of samples analysed	:	4			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Niral Patel		Centralized Prep, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
ohm cm	ohm centimetres (resistivity)
pH units	pH units
mV	millivolts
µS/cm	microsiemens per centimetre
%	percent
mg/kg	milligrams per kilogram

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	BH24-5 SS2	BH24-5 SS4	BH24-13 SS3	BH24-15 SS3	----
Client sample ID					BH24-5 SS2	BH24-5 SS4	BH24-13 SS3	BH24-15 SS3	----
Client sampling date / time					20-Nov-2024 00:00	20-Nov-2024 00:00	20-Nov-2024 00:00	18-Nov-2024 00:00	----
					WT2435704-001	WT2435704-002	WT2435704-003	WT2435704-004	----
					Result	Result	Result	Result	----
Physical Tests									
Conductivity (1:2 leachate)	----	E100-L/WT	5.00	µS/cm	179	212	219	146	----
Moisture	----	E144/WT	0.25	%	10.6	11.6	10.2	11.2	----
Oxidation-reduction potential [ORP]	----	E125/WT	0.10	mV	341	340	359	366	----
pH (1:2 soil:CaCl2-aq)	----	E108A/WT	0.10	pH units	7.80	7.80	7.71	7.71	----
Resistivity	----	EC100R/WT	100	ohm cm	5590	4720	4570	6850	----
Inorganics									
Sulfides, acid volatile	----	E396-L/WT	0.20	mg/kg	0.81	0.68	0.65	<0.22	----
Leachable Anions & Nutrients									
Chloride, soluble ion content	16887-00-6	E236.Cl/WT	5.0	mg/kg	14.1	23.2	29.3	7.7	----
Sulfate, soluble ion content	14808-79-8	E236.SO4/WT	20	mg/kg	<20	38	24	<20	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2435704**	Page	: 1 of 9
Client	: **EnVision Consultants Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Maqsooda Bibi	Account Manager	: Emily Hansen
Address	: 6415 Northwest Drive U37-40 Mississauga ON Canada L4V 1X1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 24-0825	Date Samples Received	: 29-Nov-2024 15:49
PO	: ----	Issue Date	: 10-Dec-2024 13:45
C-O-C number	: ----		
Sampler	: CLIENT		
Site	: ----		
Quote number	: 2024 Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Inorganics : Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E396-L	20-Nov-2024	06-Dec-2024	14 days	17 days	× EHT	06-Dec-2024	7 days	0 days	✓
Inorganics : Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E396-L	20-Nov-2024	06-Dec-2024	14 days	17 days	× EHT	06-Dec-2024	7 days	0 days	✓
Inorganics : Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E396-L	20-Nov-2024	06-Dec-2024	14 days	17 days	× EHT	06-Dec-2024	7 days	0 days	✓
Inorganics : Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E396-L	18-Nov-2024	06-Dec-2024	14 days	19 days	× EHT	06-Dec-2024	7 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Chloride by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E236.Cl	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Chloride by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E236.Cl	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Chloride by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E236.Cl	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Water Extractable Chloride by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E236.Cl	18-Nov-2024	09-Dec-2024	30 days	22 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Sulfate by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E236.SO4	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Sulfate by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E236.SO4	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Sulfate by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E236.SO4	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	09-Dec-2024	28 days	0 days	✓
Leachable Anions & Nutrients : Water Extractable Sulfate by IC										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E236.SO4	18-Nov-2024	09-Dec-2024	30 days	22 days	✓	09-Dec-2024	28 days	0 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E100-L	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	10-Dec-2024	30 days	20 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E100-L	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	10-Dec-2024	30 days	20 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E100-L	20-Nov-2024	09-Dec-2024	30 days	20 days	✓	10-Dec-2024	30 days	20 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E100-L	18-Nov-2024	09-Dec-2024	30 days	22 days	✓	10-Dec-2024	30 days	22 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E144	20-Nov-2024	----	----	----		03-Dec-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E144	20-Nov-2024	----	----	----		03-Dec-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E144	20-Nov-2024	----	----	----		03-Dec-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E144	18-Nov-2024	----	----	----		03-Dec-2024	----	15 days	
Physical Tests : ORP by Electrode										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E125	20-Nov-2024	03-Dec-2024	180 days	14 days	✓	04-Dec-2024	180 days	15 days	✓
Physical Tests : ORP by Electrode										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E125	20-Nov-2024	03-Dec-2024	180 days	14 days	✓	04-Dec-2024	180 days	15 days	✓
Physical Tests : ORP by Electrode										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E125	20-Nov-2024	03-Dec-2024	180 days	14 days	✓	04-Dec-2024	180 days	15 days	✓
Physical Tests : ORP by Electrode										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E125	18-Nov-2024	03-Dec-2024	180 days	16 days	✓	04-Dec-2024	180 days	16 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-13 SS3	E108A	20-Nov-2024	03-Dec-2024	30 days	14 days	✓	06-Dec-2024	30 days	17 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS2	E108A	20-Nov-2024	03-Dec-2024	30 days	14 days	✓	06-Dec-2024	30 days	17 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-5 SS4	E108A	20-Nov-2024	03-Dec-2024	30 days	14 days	✓	06-Dec-2024	30 days	17 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH24-15 SS3	E108A	18-Nov-2024	03-Dec-2024	30 days	16 days	✓	05-Dec-2024	30 days	18 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)	E396-L	1799456	1	14	7.1	4.7	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1793080	2	33	6.0	5.0	✓
Moisture Content by Gravimetry	E144	1793096	2	36	5.5	5.0	✓
ORP by Electrode	E125	1793092	2	39	5.1	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1793095	2	39	5.1	5.0	✓
Water Extractable Chloride by IC	E236.Cl	1801839	2	35	5.7	5.0	✓
Water Extractable Sulfate by IC	E236.SO4	1801840	2	35	5.7	5.0	✓
Laboratory Control Samples (LCS)							
Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)	E396-L	1799456	1	14	7.1	4.7	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1793080	4	33	12.1	10.0	✓
Moisture Content by Gravimetry	E144	1793096	2	36	5.5	5.0	✓
ORP by Electrode	E125	1793092	2	39	5.1	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1793095	2	39	5.1	5.0	✓
Water Extractable Chloride by IC	E236.Cl	1801839	4	35	11.4	10.0	✓
Water Extractable Sulfate by IC	E236.SO4	1801840	4	35	11.4	10.0	✓
Method Blanks (MB)							
Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)	E396-L	1799456	1	14	7.1	4.7	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1793080	2	33	6.0	5.0	✓
Moisture Content by Gravimetry	E144	1793096	2	36	5.5	5.0	✓
Water Extractable Chloride by IC	E236.Cl	1801839	2	35	5.7	5.0	✓
Water Extractable Sulfate by IC	E236.SO4	1801840	2	35	5.7	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L ALS Environmental - Waterloo	Soil/Solid	CSSS Ch. 15 (mod)/APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Conductance is measured in the fluid that is observed in the upper layer.
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A ALS Environmental - Waterloo	Soil/Solid	MECP E3530	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C) and is carried out in accordance with procedures described in the Analytical Protocol (prescriptive method). A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling, or decanting and then analyzed using a pH meter and electrode. This method is equivalent to ASTM D4972 and is acceptable for topsoil analysis.
ORP by Electrode	E125 ALS Environmental - Waterloo	Soil/Solid	APHA 2580 (mod)	Oxidation Redution Potential (ORP) is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed in the analysis, measured in mV.
Moisture Content by Gravimetry	E144 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Water Extractable Chloride by IC	E236.Cl ALS Environmental - Waterloo	Soil/Solid	EPA 300.1	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection using a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Anions are measured in the fluid that is observed in the upper layer.
Water Extractable Sulfate by IC	E236.SO4 ALS Environmental - Waterloo	Soil/Solid	EPA 300.1	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection using a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Anions are measured in the fluid that is observed in the upper layer.
Acid Volatile Sulfide in Soil by Colourimetry (0.2 mg/kg)	E396-L ALS Environmental - Waterloo	Soil/Solid	APHA 4500S2J	This analysis is carried out in accordance with the method described in APHA 4500 S2-J. After extraction the Acid Volatile Sulphide is determined colourimetrically.
Resistivity Calculation for Soil Using E100-L	EC100R ALS Environmental - Waterloo	Soil/Solid	APHA 2510 B	Soil Resistivity (calculated) is determined as the inverse of the conductivity of a 2:1 water:soil leachate (dry weight). This method is intended as a rapid approximation for Soil Resistivity. Where high accuracy results are required, direct measurement of Soil Resistivity by the Wenner Four-Electrode Method (ASTM G57) is recommended.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 ALS Environmental - Waterloo	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Leach 1:2 Soil : 0.01CaCl2 - As Received for pH	EP108A ALS Environmental - Waterloo	Soil/Solid	MOEE E3137A	A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling or decanting and then analyzed using a pH meter and electrode.
Preparation of ORP by Electrode	EP125 ALS Environmental - Waterloo	Soil/Solid	APHA 2580 (mod)	Field-moist sample is extracted in a 1:2 ratio with DI water and then analyzed by ORP meter.
Anions Leach 1:10 Soil:Water (Dry)	EP236 ALS Environmental - Waterloo	Soil/Solid	EPA 300.1	5 grams of dried soil is mixed with 50 grams of distilled water for a minimum of 30 minutes. The extract is filtered and analyzed by ion chromatography.
Distillation for Acid Volatile Sulfide in Soil	EP396-L ALS Environmental - Waterloo	Soil/Solid	APHA 4500S2J	Acid Volatile Sulfide is determined by colourimetric measurement on a sediment sample that has been treated with hydrochloric acid within a purge and trap system, where the evolved hydrogen sulfide gas is carried into a basic solution by argon gas for analysis.

QUALITY CONTROL REPORT

Work Order	: **WT2435704**	Page	: 1 of 6
Client	: EnVision Consultants Ltd.	Laboratory	: ALS Environmental - Waterloo
Contact	: Maqsooda Bibi	Account Manager	: Emily Hansen
Address	: 6415 Northwest Drive U37-40 Mississauga ON Canada L4V 1X1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 24-0825	Date Samples Received	: 29-Nov-2024 15:49
PO	: ----	Date Analysis Commenced	: 03-Dec-2024
C-O-C number	: ----	Issue Date	: 10-Dec-2024 13:45
Sampler	: CLIENT		
Site	: ----		
Quote number	: 2024 Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Nik Perkio	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
Niral Patel		Waterloo Centralized Prep, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1793080)											
WT2435655-002	Anonymous	Conductivity (1:2 leachate)	----	E100-L	5.00	µS/cm	397	395	0.505%	20%	----
Physical Tests (QC Lot: 1793083)											
WT2435731-002	Anonymous	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	7.79	7.80	0.128%	5%	----
Physical Tests (QC Lot: 1793085)											
WT2435731-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	342	346	1.16%	25%	----
Physical Tests (QC Lot: 1793086)											
WT2435655-004	Anonymous	Moisture	----	E144	0.25	%	13.1	11.6	12.6%	20%	----
Physical Tests (QC Lot: 1793090)											
WT2435704-004	BH24-15 SS3	Conductivity (1:2 leachate)	----	E100-L	5.00	µS/cm	146	144	0.966%	20%	----
Physical Tests (QC Lot: 1793092)											
EO2410696-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	308	306	0.651%	25%	----
Physical Tests (QC Lot: 1793095)											
EO2410696-001	Anonymous	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	6.75	6.72	0.445%	5%	----
Physical Tests (QC Lot: 1793096)											
WT2435495-001	Anonymous	Moisture	----	E144	0.25	%	14.8	13.9	6.09%	20%	----
Inorganics (QC Lot: 1799456)											
WT2435655-004	Anonymous	Sulfides, acid volatile	----	E396-L	0.23	mg/kg	<0.23	<0.23	0.23	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 1793081)											
WT2435655-001	Anonymous	Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	36	36	0.8	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 1793082)											
WT2435655-001	Anonymous	Chloride, soluble ion content	16887-00-6	E236.Cl	5.0	mg/kg	84.5	83.6	1.08%	30%	----
Leachable Anions & Nutrients (QC Lot: 1801839)											
WT2435704-004	BH24-15 SS3	Chloride, soluble ion content	16887-00-6	E236.Cl	5.0	mg/kg	7.7	7.8	0.04	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 1801840)											
WT2435704-004	BH24-15 SS3	Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	<20	<20	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1793080)						
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	<5.00	----
Physical Tests (QCLot: 1793086)						
Moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 1793090)						
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	<5.00	----
Physical Tests (QCLot: 1793096)						
Moisture	----	E144	0.25	%	<0.25	----
Inorganics (QCLot: 1799456)						
Sulfides, acid volatile	----	E396-L	0.2	mg/kg	<0.20	----
Leachable Anions & Nutrients (QCLot: 1793081)						
Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	<20	----
Leachable Anions & Nutrients (QCLot: 1793082)						
Chloride, soluble ion content	16887-00-6	E236.Cl	5	mg/kg	<5.0	----
Leachable Anions & Nutrients (QCLot: 1801839)						
Chloride, soluble ion content	16887-00-6	E236.Cl	5	mg/kg	<5.0	----
Leachable Anions & Nutrients (QCLot: 1801840)						
Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	<20	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1793080)									
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	1410 µS/cm	97.9	90.0	110	----
Physical Tests (QCLot: 1793083)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1793086)									
Moisture	----	E144	0.25	%	50 %	98.9	90.0	110	----
Physical Tests (QCLot: 1793090)									
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	1410 µS/cm	97.9	90.0	110	----
Physical Tests (QCLot: 1793095)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1793096)									
Moisture	----	E144	0.25	%	50 %	98.9	90.0	110	----
Inorganics (QCLot: 1799456)									
Sulfides, acid volatile	----	E396-L	0.2	mg/kg	100 mg/kg	77.0	70.0	130	----
Leachable Anions & Nutrients (QCLot: 1793081)									
Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	1000 mg/kg	95.5	80.0	120	----
Leachable Anions & Nutrients (QCLot: 1793082)									
Chloride, soluble ion content	16887-00-6	E236.Cl	5	mg/kg	1000 mg/kg	98.6	80.0	120	----
Leachable Anions & Nutrients (QCLot: 1801839)									
Chloride, soluble ion content	16887-00-6	E236.Cl	5	mg/kg	1000 mg/kg	99.0	80.0	120	----
Leachable Anions & Nutrients (QCLot: 1801840)									
Sulfate, soluble ion content	14808-79-8	E236.SO4	20	mg/kg	1000 mg/kg	95.6	80.0	120	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Physical Tests (QCLot: 1793080)									
QC-1793080-003	RM	Conductivity (1:2 leachate)	----	E100-L	3310 µS/cm	103	70.0	130	----
Physical Tests (QCLot: 1793085)									
QC-1793085-001	RM	Oxidation-reduction potential [ORP]	----	E125	475 mV	97.5	90.0	110	----
Physical Tests (QCLot: 1793090)									
QC-1793090-003	RM	Conductivity (1:2 leachate)	----	E100-L	3310 µS/cm	102	70.0	130	----
Physical Tests (QCLot: 1793092)									
QC-1793092-001	RM	Oxidation-reduction potential [ORP]	----	E125	475 mV	98.1	90.0	110	----
Leachable Anions & Nutrients (QCLot: 1793081)									
QC-1793081-003	RM	Sulfate, soluble ion content	14808-79-8	E236.SO4	170 mg/kg	81.2	70.0	130	----
Leachable Anions & Nutrients (QCLot: 1793082)									
QC-1793082-003	RM	Chloride, soluble ion content	16887-00-6	E236.Cl	402 mg/kg	76.3	70.0	130	----
Leachable Anions & Nutrients (QCLot: 1801839)									
QC-1801839-003	RM	Chloride, soluble ion content	16887-00-6	E236.Cl	756 mg/kg	102	70.0	130	----
Leachable Anions & Nutrients (QCLot: 1801840)									
QC-1801840-003	RM	Sulfate, soluble ion content	14808-79-8	E236.SO4	539 mg/kg	92.6	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo
Work Order Reference
WT2435704

Telephone : +1 519 886 6910

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distr
Company:	Envision Consultants Ltd.	Select Report Format: ☑ PDF ☑ EX
Contact:	Maqsooda Bibi	Quality Control (QC) Report with Report
Address:	6415 Northwest Drive Unit 37-40 Mississauga / ON	☐ Criteria on Report - provide details below if box
Phone:	647-919-0887	Select Distribution: ☑ EMAIL
		Email 1 or Fax: mbibi@envisionconsulta
		Email 2

e Level Below (Rush Turnaround Time (TAT) is not available for all tests)
dard TAT if received by 3 pm - business days)
us. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
weekend emergency - contact ALS to confirm TAT and surcharge
ired for E2,E or P:

Invoice To	Same as Report To ☑ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Company:	Envision Consultants Ltd.	Email 1 or Fax: payables@envisionconsultants.ca
Contact:	Account Payables	Email 2: mbibi@envisionconsultants.ca

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	24-0825	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Corrosivity Package with Redox	Number of Containers
	BH24-5 SS2	20-Nov-24	AM	Soil	R	1
	BH24-5 SS4	20-Nov-24	AM	Soil	R	1
	BH24-13 SS3	20-Nov-24	AM	Soil	R	1
	BH24-15 SS3	18-Nov-24	AM	Soil	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ Yes ☑ No

Are samples for human drinking water use?
☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐ See rubber ✓

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
0.4			3.6		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: VK	Date: 11/29/24	Time: 4:00PM	Received by: Kiran	Date: 11/29/24	Time: 15:49	Received by: VM	Date: 29-11-24	Time: 17:55

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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SW-487 GW-486