

GEOTECHNICAL INVESTIGATION

**PROPOSED TRUCK PARKING LOT
265 WOOLWICH STREET SOUTH
BRESLAU, ONTARIO**

CMT Project 24-070.R01

Prepared for:

786 Group Inc.

April 2, 2024





CMT Engineering Inc.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

April 2, 2024

24-070.R01

786 Group Inc.
1474 Laurier Avenue
Milton, ON
L9T 8T4

Attention: Mr. Irslan Maan

Dear Irslan:

**Re: Geotechnical Investigation
Proposed Truck Parking Lot
265 Woolwich Street South
Breslau, Ontario**

As requested, CMT Engineering Inc. conducted a geotechnical investigation at the above-referenced site, and we are pleased to present the enclosed report.

We trust that this information meets your present requirements, and we thank you for allowing us to undertake this project. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

A handwritten signature in black ink that reads 'Jake Feeney'. The signature is written in a cursive, flowing style.

Jake Feeney, P. Eng.

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1.0 INTRODUCTION

The services of CMT Engineering Inc. (CMT Inc.) were retained by Irsan Maan of 786 Group Inc. to conduct a geotechnical investigation for the proposed truck parking lot to be located at 265 Woolwich Street South in Breslau, Ontario. The investigation was completed in conjunction with a hydrogeological study by Hydrogeology Consulting Services (HCS) which will be provided under separate cover. The location of the site is shown on Drawing 1.

It is understood the project will comprise the construction of a new gravel surface truck parking lot.

The purpose of the geotechnical investigation was to assess the existing soil and groundwater conditions encountered in the boreholes. Included in the assessment are the soil classification and groundwater observations, as well as dewatering considerations; recommendations for site grading, site servicing, excavations, and backfilling; pavement design/drainage and design properties; and a summary of the laboratory test results.

The recommendations in this report are solely based on the soil conditions encountered in the boreholes advanced on the subject site.

2.0 EXISTING SITE CONDITIONS

Currently, the site comprises vacant agricultural land. The site is bounded by residential properties to the north and south, Woolwich Street South and commercial/industrial properties to the west. A small wooded area is located to the east of the site and agricultural land is located to the north, south and east of the site. In general, the site topography is relatively flat throughout the proposed parking lot area.

3.0 FIELD AND LABORATORY PROCEDURES

The field investigation was conducted on February 26, 2024 and comprised the advancement of six (6) boreholes (referenced as Boreholes 1 to 6) utilizing a Geoprobe 7822DT drillrig operated by employees of CMT Drilling Inc.

Boreholes 1 to 4 were advanced to depths of approximately 4.57 m (15.00 ft) below the existing ground surface. Boreholes 5 and 6 were advanced to depths of approximately 3.05 m (10.00 ft) below the existing ground surface.

Boreholes 1 to 4 were equipped with 38 mm diameter PVC monitoring wells comprising a 1.52 m long screens backfilled with filter sand and then riser pipe, backfilled with bentonite. The monitoring wells were installed according to the Ontario Water Resources Act, Regulation 903 (O.Reg. 903) by well technicians licensed by the Ministry of the Environment, Conservation and Parks (MECP), working for a contractor also licensed by the MECP. The monitoring wells are registered with the MECP and must be decommissioned in accordance

with O.Reg. 903 prior to future construction. The MECP well log records are provided in Appendix C.

Standard penetration testing (SPT) and sampling was carried out in all boreholes using 38 mm inside diameter split spoon sampling equipment and an automatic hammer, in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". SPT soil sampling was generally conducted at 0.76 m (2.5 ft) intervals to approximately 2.13 m (7.00 ft). Macro core (MC5) direct push sampling in accordance with ASTM D6282/D6282M-14 "Standard Guide for Direct Push Soil Sampling" was generally conducted below the SPT samples from 2.13 m (7.00 ft) in the boreholes.

Technical staff from CMT Inc. observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations. Representative samples from the boreholes at the following depths were submitted to the CMT Inc. laboratory in St. Clements, Ontario for grain size analyses:

- Borehole 1 - depth 2.13 m to 3.05 m (7.00 ft to 10.00 ft),
- Borehole 2 – depth 3.05 m to 4.57 m (10.00 ft to 15.00 ft),
- Borehole 3 - depth 3.05 m to 4.57 m (10.00 ft to 15.00 ft), and
- Borehole 4 – depth 3.05 m to 4.57 m (10.00 ft to 15.00 ft).

The borehole logs are provided in Appendix A and the grain size analyses are provided in Appendix B.

The ground surface elevations at the borehole locations were surveyed by CMT Inc. following the completion of the drilling. The concrete base of the Reitzel Bros Environmental sign was utilized as a temporary benchmark with an assumed elevation of 100.00 m. The ground surface elevations at the borehole locations ranged from approximately 99.00 m at Borehole 2 to 99.41 m at Borehole 6. The locations of the boreholes are shown in Drawing 2.

4.0 SUBSOIL CONDITIONS

The soils encountered in the boreholes are described briefly below and a more detailed stratigraphic description is provided on the borehole logs in Appendix A. The following paragraphs have been simplified into terms of major soil strata. The soil boundaries indicated have been inferred from non-continuous samples and observations of sampling and drilling resistance and typically represent transitions from one soil type to another rather than exact planes of geological change. Further, the subsurface conditions are anticipated to vary between and beyond the borehole locations.

4.1. Topsoil

Loose, moist, dark brown, silty, organic topsoil was encountered at the surface of all boreholes and was observed to range in thickness from approximately 300 mm to 450 mm (average 375 mm). The topsoil thickness should be expected to vary throughout the site. Materials noted as topsoil in this report were classified based on visual and textural evidence. Testing of organic content or for other nutrients was not carried out.

4.2. Silty Sand

Brown to grey silty sand with trace gravel was encountered underlying the sand and gravel at Boreholes 3 and 4 and underlying the topsoil at Borehole 6. The silty sand soils were considered to be very loose to compact, with SPT N-values ranging from approximately 5 to 27 blows per 0.3 m (average 13 blows per 0.3 m). The silty sand was considered to be moist to saturated, with moisture contents ranging from about 10.8% to 24.5% (average 19.4%).

4.3. Sand

Brown sand with some silt, some to no gravel and trace clay was encountered underlying the topsoil at Boreholes 1, 2, 3 and 5 and underlying the sand and gravel at Boreholes 2, 4 and 5. The sand was observed to extend to the termination depth of Borehole 2. The sand soils were considered to be loose to dense, with SPT N-values ranging from approximately 3 to 14 blows per 0.3 m (average 7 blows per 0.3 m). The sand was considered to be moist to saturated, with moisture contents ranging from about 5.0% to 25.1% (average 11.2%).

4.4. Sand and Gravel/Gravelly Sand

Brown to grey sand and gravel/gravelly sand with some silt and trace to no clay was encountered underlying the sand at Boreholes 1 to 5 and underlying the silty sand at Boreholes 3, 4 and 6. The sand and gravel/gravelly sand was observed to extend to the termination depth of Boreholes 1 and 3 to 6. The sand and gravel/gravelly sand soils were considered to be compact to very dense, with SPT N-values ranging from approximately 15 to 76 blows per 0.3 m (average 39 blows per 0.3 m). The sand and gravel/gravelly sand was considered to be moist to saturated, with moisture contents ranging from about 3.0% to 15.3% (average 8.5%).

4.5. Groundwater

Four (4) monitoring wells were installed as part of the geotechnical and hydrogeological investigation. The monitoring wells were installed and registered in accordance with the Ontario Water Resources Act, Regulation 903 (O.Reg. 903) by well technicians licensed by the Ministry of the Environment (MECP), working for a contractor also licensed by the MECP.

The following table provides a summary of the groundwater elevations in the monitoring wells, including the ground surface and bottom of monitoring well elevations, measured by CMT Engineering on April 1, 2024:

Borehole/ Monitoring Well No.	Ground Surface Elevation (m)	Approximate Elevation (and Depth) of Water in Monitoring Well (m)	Approximate Bottom of Monitoring Well Elevation (m)
		December 20, 2023	
1	99.17	96.60 (depth 2.57 m)	94.60
2	99.00	96.37 (depth 2.63 m)	94.43
3	99.34	96.66 (depth 2.68 m)	94.77
4	99.16	96.61 (depth 2.55 m)	94.59

It should be noted that groundwater conditions (particularly perched water) are generally dependent on the amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume.

Recommendations with respect to dewatering conditions are provided in Section 5.4 of this report.

5.0 DISCUSSION AND RECOMMENDATIONS

It is understood the project will comprise the construction of a new gravel surfaced truck parking lot.

The following sections of the report provide an interpretation of the factual geotechnical data obtained during the investigation and is intended for the guidance of the design engineer. Where comments are made on construction, they are provided only to highlight those aspects which could affect the design of the project. Contractors bidding on or undertaking the work should make their own independent interpretation of the factual subsurface information provided as it affects their proposed construction means and methods, equipment selection, scheduling, pricing, and the like.

Utilizing the information gathered during the geotechnical investigation and assuming that the borehole information is representative of the subsoil conditions throughout the site, the following comments and recommendations are provided.

5.1. Soil Design Parameters

The following table provides estimated soil design parameters for imported granular fill, as well as the native soils encountered on the subject site. It should be noted that earth pressure coefficients (K_a , K_p , K_o) provided are for flat ground surface conditions and will differ for areas with slopes or embankments.

The estimated soil design parameters can be utilized for the design of perimeter shoring, foundations and retaining walls, as required:

Soil Type	Soil Density (kg/m ³)	Friction Angle (Degree)	Coefficient of Active Pressure (K_a)	Coefficient of Passive Pressure (K_p)	Coefficient of At-Rest Pressure (K_o)	Coefficient of Friction (μ)	Cohesion (Undrained) (kPa)
Imported Granular 'A' (OPSS 1010)	2,100	34°	0.28	3.54	0.44	0.45	0
Imported Granular 'B' (OPSS 1010)	2,050	33°	0.29	3.39	0.46	0.43	0
Silty Sand	1,800	32°	0.31	3.25	0.47	0.41	0
Sand	1,850	33°	0.29	3.39	0.46	0.43	0
Sand and Gravel	1,900	34°	0.28	3.54	0.44	0.45	0

5.2. Site Preparation

The site preparation for the proposed truck parking lot is anticipated to consist of the stripping of topsoil, the subexcavation of any loose/soft fill or native soils deemed not capable of supporting the design bearing capacity, removal or relocation of any existing services and buried piping (including any drainage tiles), followed site grading to achieve proposed grades.

5.2.1. Topsoil Stripping/Vegetation Grubbing

All existing topsoil and vegetation (including roots and all loose/disturbed soils associated with the roots) must be removed from within the proposed parking lot envelope to expose approved competent subgrade soils. The topsoil may be used in landscaped areas where some settlement can be tolerated; otherwise, it should be properly disposed of off-site.

The volume of topsoil removed during the stripping process is also relative to the equipment utilized for the stripping process as well as the moisture conditions at the time of stripping. If an excavator with a smooth bucket is utilized for stripping, there would generally be less potential for topsoil to become intermixed with the underlying relatively loose subsoil and therefore less concern of over-excavation to remove all topsoil. If the topsoil is stripped with wheeled equipment or bulldozers, then there is an increased potential for the topsoil and subsoil to become intermixed, subsequently requiring additional excavation to remove all topsoil. This is further influenced by rutting which can occur during wet conditions.

5.2.2. Removal/Relocation of Existing Services and Buried Piping

All existing services and buried pipes (including drainage tiles) that may be located within the proposed parking lot envelope must be removed/relocated. Any piping that is left in place that is no longer active must be completely sealed with watertight mechanical covers, concrete, or grout at termination points to prevent the migration of soils into pipe voids, which may result in potential settlement. All existing trench backfill material associated with any existing buried pipes must be subexcavated and the subsequent excavation must be backfilled with approved soils placed in accordance with Section 5.2.3 of this report.

It is a requirement of the Ontario Water Resources Act, Regulation 903, that any wells be decommissioned by an MECP licensed well contractor if they are no longer required. The four (4) monitoring wells that have been installed to determine static water levels and/or collect environmental samples can be decommissioned by an MECP licensed well contractor with a Class 1, Class 2, or Class 3 license in accordance with Reg. 903.

5.2.3. Site Grading and Structural Fill Placement

Following the removal of all topsoil and unsuitable soils, the exposed subgrade soils must be proof-rolled, and any soft or unstable areas must be subexcavated and replaced with approved fill materials. Any fill materials required to achieve the design site grades should be placed according to the following procedures:

- Prior to placement of any structural fill or bulk fill, the subgrade for the proposed parking lot must be prepared large enough to accommodate a 1:1 slope commencing a distance of 1.0 m beyond the outside edge of any foundations or pavement/concrete edge down to the approved competent founding soils,
- Soils approved for use as structural fill must be placed in loose lifts not exceeding 0.3 m (12") in depth for granular soils (recommended fill material) and 0.2 m (8") in depth for silts and clays (not recommended for this application), or the capacity of the compactor (whichever is less),
- Approved imported granular fill materials (OPSS 1010 Type II or Type III Granular 'B' recommended for this application) can be compacted utilizing adequate heavy vibratory smooth drum or padfoot compaction equipment,
- Fine-grained silt and clay soils (not recommended) must be compacted utilizing adequate heavy padfoot vibratory compaction equipment. It is imperative that if very stiff soils are utilized for structural fill, the material must be broken down (pulverized) to minimize voids and reduce the potential for settlement,
- Approved fill materials must be at suitable moisture contents (at or near to the optimum moisture content as determined by laboratory Proctor testing) to achieve the specified compaction. Soil moisture will also be dependent on weather conditions at the time of construction. Granular soils may require the addition of water in order to achieve the specified compaction,
- Approved structural fill materials that will support structures as well as slab-on-grades that will be subject to heavy loads or point loading (including any entrance slabs, concrete loading areas and other large expansive slabs) must be compacted to 100% standard Proctor maximum dry density (SPMDD),

- Approved bulk fill (bulk fill for driveways or surface-level parking areas) must be compacted to a minimum 95% SPMDD. It would be expected that the existing on-site soils, free of any deleterious materials, would be suitable for use as bulk fill; however, depending on the time of year and weather conditions when construction takes place, soils may require air-drying in order to achieve the specified density, and
- Granular 'B' subbase and Granular 'A' base materials for the driveways and paved areas must be compacted to 100% SPMDD.

Any wet soils (if encountered) will require significant air-drying along with working of the soils in order to achieve the specified compaction of 95% SPMDD for bulk fill for any driveways and surface-level parking areas. Utilizing the existing soils during site grading may be more achievable if work is completed during the generally drier summer months. It should be noted, however, that due to the nature of some soils, during hot dry weather, the addition of water may be required in order to achieve the specified compaction. Reuse of excavated soils on-site will be subject to approval from qualified geotechnical personnel.

It is imperative that if any very stiff soils are utilized as fill, the material must be broken down (pulverized) to minimize void space and reduce the potential for settlement. Problems associated with compacting very stiff soils include the potential for long-term settlement due to excessive void space caused by the generally blocky structure of the excavated soils. As such, very stiff, blocky material should not be used as structural fill. The contractor must have equipment on-site that can effectively break down (pulverize) the very stiff excavated soil into workable sizes (as required). Backfilling utilizing this material must be performed in thin lifts with considerable compactive effort applied, thereby reducing the void space, and minimizing long-term settlement. This process could be difficult and time-consuming.

The native soils can be easily disturbed and subject to strength losses, making travel on this material somewhat difficult with conventional rubber-tired construction equipment such as dump trucks and compactors. Conditions should be expected to worsen if the subgrade soils are in a wet to saturated state. Therefore, it is recommended that construction traffic be minimized, where possible, from driving on the native subgrade soils. Depending on the time of year, it may be required to construct a haul road utilizing a Granular 'B' base.

5.2.4 Fill Removal

Any existing fill (including any existing trench backfill), as well as any native soil that has inadequate bearing capacity or has been disturbed by demolition/construction processes and is deemed unsuitable to support the parking lot, must be sub-excavated from within the proposed parking lot envelope expose approved competent subgrade soils. It would also be sound construction practice to subexcavate any existing unsuitable fill, if encountered, from the parking lot area; however, this may not be cost-effective. At a minimum, thorough inspection will be required at the time of construction to assess the existing fill to ensure there is no buried topsoil or other deleterious materials within the subgrade. Review of the subgrade and potential changes to the design of the parking lot structure, as required, will be addressed at the time of construction.

Prior to reusing excavated material on-site as potential bulk fill, thorough field inspection and approval by qualified geotechnical personnel would be required to ensure that existing fill materials are not comprised of organics, topsoil, or other deleterious materials.

5.3. Excavations

All excavations must be carried out in accordance with Ontario Regulation 213/91 (Reg 213/91) of the Occupational Health and Safety Act and Regulations for Construction Projects.

Type 3 Soils – In general the native soils, in a drained state, encountered in the boreholes are considered to be Type 3 soils under the regulation and if trenched, must be sloped from the bottom of the excavation having a minimum gradient of 1 horizontal to 1 vertical. Soils underlain by Type 4 soils that are exposed in the excavation must be treated as Type 4 soils (see below).

Type 4 Soils - In general, any wet to saturated soils (if encountered) would be classified as Type 4 soils under Reg 213/91. Type 4 soils must be sloped from the bottom of the excavation at a minimum gradient of 3 horizontal to 1 vertical.

If it is not practical to excavate according to the above requirements, then a trench support system (designed in accordance with the Ontario Health and Safety Act Regulations) may be utilized. When using a temporary trench support system consisting of trench boxes to reduce the lateral extent of the excavations, it should be noted that the support system is intended primarily to protect workers as opposed to controlling lateral soil movement. Any voids between the excavation walls and the support system should be immediately filled to reduce the potential for loss of ground and to provide support to existing adjacent utilities and structures, and it is recommended that the excavation be carried out in short sections, with the support system installed immediately upon

excavation completion. If the excavation is not a trench, no worker should be required to be closer to a wall of the excavation than the height of the excavated wall.

Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils, if encountered. As such, it may be necessary to increase the width of the excavation to accommodate sloughing/caving soils.

5.4. Construction Dewatering Considerations

Monitoring wells were installed in the boreholes to measure static groundwater levels. The groundwater levels were measured to range from approximately 2.55 m to 2.68 m below the existing ground surface. It should be noted that groundwater conditions (particularly perched water) are generally dependent on the amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume. As such, provisions for site dewatering should be part of the site development and construction process.

Seepage control requirements during construction will depend upon the area of work on the site, the depth of the excavations, the time of year, the amount of precipitation and the control of surface water. As required, seepage should generally be adequately controlled using conventional construction dewatering techniques such as pumping from sump pits. However, if heavy seepage occurs, it may be necessary to increase the number of pumps during construction.

Dewatering should be performed in accordance with OPSS 517 and the control of water must be in accordance with OPSS 518. It is the responsibility of the contractor to propose a suitable dewatering system based on the groundwater elevation at the time of construction. Collected water should discharge a sufficient distance away from the excavation to prevent re-entry. Sediment control measures must be installed at the discharge point of the dewatering system to avoid any potential adverse impacts on the environment.

5.5. Service Pipe Bedding

The native soils encountered in the geotechnical investigation are generally considered suitable for indirect support of the site service pipes. Should instability due to wet soil conditions be encountered, it may be necessary to increase the thickness of the granular base and utilize 19 mm clear stone to create an adequate supporting base for the service pipes and/or manholes. Pipe embedment, cover, and backfill for both flexible and rigid pipes should be in accordance with all current and applicable OPSD, OPSS and OBC standards and guidelines and as follows.

Flexible Pipes – The pipe bedding should be shaped to receive the bottom of the pipe. If necessary, pipe culvert frost treatment should be undertaken in accordance with OPSD-803.031. The trench excavations should be symmetrical with respect to the centreline of the pipe. The granular material placed under the haunches of the pipe must be compacted to 95% SPMDD prior to the continued placement and compaction of the embedment material. The homogeneous granular material used for embedment should be placed and compacted uniformly around the pipe. Should wet conditions be encountered at the base of the trench, then the pipe bedding should consist of 19 mm clear stone (meeting OPS Specifications) wrapped completely in a geotextile fabric such as Terrafix 270 or equivalent.

Rigid Pipes - In general, the pipe installation recommendations for rigid pipes are the same as those for flexible pipes, except that the minimum bedding depth below a rigid pipe should be $0.15D$ (where D is the pipe diameter). In no case should this dimension be less than 150 mm or greater than 300 mm.

Any service pipes that are not provided with sufficient frost coverage must be protected with the necessary equivalent thermal insulation. The general contractor is responsible for protecting service piping from damage by heavy equipment.

5.6. Backfill

The native soils are generally considered suitable for reuse as trench backfill and bulk fill in the driveways and surface-level parking areas; however, any wet soils encountered may require air-drying in order to achieve the specified compaction. Air-drying cannot typically be achieved during winter construction; therefore, depending on the time of year that construction takes place, it may be more feasible to utilize an imported granular fill for this project (keeping in mind that frost tapers, as noted above, would be recommended to minimize differential frost heave).

Backfilling operations should be carried out with the following minimum requirements:

- Adequate heavy padfoot (cohesive soils) or smooth drum (non-cohesive soils) vibratory compaction equipment should be used for the compaction and to break down any large blocky pieces of soil;
- Loose lift thicknesses should not exceed 0.3 m (12") for granular soils (sand and gravel) or 0.2 m (8") for clay and silt soils (cohesive) or the capacity of the compactor (whichever is less);
- The soils must be at suitable moisture contents to achieve compaction to a minimum 95% SPMDD in non-structural bulk fill areas. Service trenches excavated within the zone of influence of footings for structures must be compacted to a minimum of 100% SPMDD;

- It is recommended that inspection and testing be carried out during construction to confirm backfill quality, thickness and to ensure that compaction requirements are achieved;
- Service trench backfill materials may consist of approved excavated soils with no particles greater than 100 mm and no topsoil or other deleterious materials;
- If construction operations are undertaken in the winter, strict consideration should be given to the condition of the backfill material to make certain that frozen material is not used.

It is imperative that if any very stiff soils are utilized for backfilling of service trenches, the material must be broken down (pulverized) to minimize voids and reduce the potential for settlement.

5.7. Pavement Design/Drainage

Any soils containing organics or other deleterious material must be subexcavated from within the proposed parking areas and entrances. It is recommended to either subexcavate any existing loose subgrade materials or provide further consolidation with vibratory compaction equipment in order to prepare a proper, stable subgrade. Prior to placement of the granular base, the subgrade must be proof-rolled, and any soft or unstable areas should be subexcavated and replaced with suitable approved materials. The subgrade should be graded smooth (free of depressions) and properly crowned to ensure positive drainage, with a minimum grade of 3% toward the drainage outlet or curb line. When service pipes are installed, pipe bedding and backfilling should be undertaken as indicated in Sections 5.5 and 5.6 of this report.

Rapid drainage of the pavement structure is critical to ensure long-term performance. In general, the sand/sand and gravel/gravelly sand subgrade soils encountered in the boreholes would be considered to be free draining and as such it would be recommended that subdrains be installed in any low-lying areas such as catch basins (provided gravity drainage to a suitable outlet can be provided). Subdrains should also be installed at the “pavement” edges in any areas where the subgrade consists of non-free draining materials. Subdrains should be designed and installed in accordance with OPSS 405 and OPSD 216.021. If Granular 'A' bedding (OPSS 1010) is utilized, the subdrains should be equipped with a factory installed filter sock. If 19 mm clear stone (OPSS 1004) is utilized as bedding for the subdrain (recommended for this application), then the bedding must be wrapped completely with geotextile filter fabric such as Terrafix 270R (or equivalent). Installation of rigid subdrains allows for better grade control and less potential for damage during installation or service. Positive drainage through grade control of subdrains is critical, as improperly installed subdrains can turn drainage systems into reservoirs, which can fuel frost action. The subdrains will hasten the removal of water, thereby reducing the risk and effects of frost heaving and load transfer in saturated conditions. It is suggested that subdrains be installed at regular intervals

(to be designed based on layout of catch basins and storm sewers) through paved driveways and parking areas.

The native subgrade soils are highly sensitive to changes in moisture content and can become loose or soft if the soils are subject to inclement weather and seepage or severe drying. Furthermore, the subgrade soils could be easily disturbed if traveled on during construction. As such, where this material will be exposed, it is recommended that the granular subbase be placed immediately upon completion of the subgrade preparation to protect the integrity of the subgrade soils.

Should wet conditions be encountered during construction, site assessments may be required to determine what options can be undertaken to construct a modified pavement base. These options may include subexcavation of loose/soft soils, increasing the thickness of the granular base, the use of reinforcing geotextiles or geogrids, or a combination of all.

It is expected that the parking lot will experience mostly heavy traffic (transport trucks, delivery trucks, maintenance, and emergency vehicles). Based on the anticipated vehicle loading and frost-susceptibility of the subgrade soils, the following pavement design is provided:

Material	Recommended Thickness for Heavy Traffic	Compaction Requirements
Recycled Asphalt	50 mm (2.0")	100% SPMDD
Granular 'A' Base (OPSS 1010)	200 mm (8.0")	
Granular 'B' Subbase (OPSS 1010 Type III)	300 mm (12.0")	

The granular base and subbase materials must conform to the physical property and gradation requirements of OPSS 1010 and must be compacted to 100% SPMDD.

The term asphalt grindings or recycled asphalt (RAP) as it is often referred to in the industry can be a loose term. Typically, people refer to material that comprises 100% crushed asphalt as RAP. This material is then blended into asphalt mixes and/or Granular 'A' and Granular 'B' aggregates to produce a RAP mix (also referred to by some as RAP). In road construction recycled asphalt (RAP) is limited to a maximum 30% by mass when blended in with natural aggregates to produce Granular 'A' and Granular 'B'. Studies show that CBR values decrease as the percent RAP increases which is why there a maximum limit. Material with RAP also typically has a lower permeability.

In parking lot or yard construction sometimes 100% crushed asphalt (RAP) is used as a driving surface to help minimize pot-holes and/or provide dust control and therefore would only be in the order of +/- 25 to 50 mm thick. It should also be expected that materials or equipment stored for long periods of time have the potential to sink into the surface RAP, particularly during hot weather (this can also occur in gravel though during wet weather or freeze thaw cycles).

The parking surface should be designed and constructed to ensure that water will not pond in any areas.

5.8. Chemical Analysis/Excess Soil Management

Generally, if surplus soils are to be exported off-site, it will be necessary to perform chemical analysis of the soils. Chemical analysis was not undertaken as part of this geotechnical investigation. Should chemical analysis tests be required, the required tests vary and will be dependent on the disposal site utilized by the general contractor.

At a minimum, the soils are tested for the following:

- PHC F1-F4, BTEX as per O.Reg. 406/19
- Metals as per O.Reg 406/19

Additional testing may be required based on a site assessment to be performed prior to sampling as well as the specifications of the disposal site.

The chemical analysis results are then compared to the site condition standards of Ontario Regulation 406/19. Typically, the results are compared to; *T1-Soil-Res/Park/Inst/Ind/Com/Commu Property Use*; *T2.1-Volume Independent Soil – Res/Park/Inst Property Use*.

Leachate testing may be required depending on the disposal site for the excess soils.

When transporting soils off-site, the following is recommended:

- All chemical analyses and environmental assessment reports must be fully disclosed to the receiving site owners/authorities, whom must agree to receive the material;
- The receiving site owners/authorities are to confirm the land use at the receiving site if compatible to receive the material;
- The receiving site owners/authorities are to monitor the transportation and placement of the materials to ensure that the material is placed appropriately at the pre-approved site;

- The excess materials may not be transported to a site that has previously had a Record of Site Condition (RSC) filed, unless the material meets the criteria outlined in the RSC.

It should be noted that landfill sites will generally only accept laboratory test results that have been completed within 30 days of exporting.

6.0 SITE INSPECTION

Qualified geotechnical personnel should supervise excavation inspections as well as compaction testing for any structural filling, site grading and site servicing. This will ensure that footings are founded in the proper strata and that proper material and techniques are used and the specified compaction is achieved. CMT Engineering Inc. would be pleased to review the design drawings and provide an inspection and testing program for the construction of the proposed townhouse development.

7.0 LIMITATIONS OF THE INVESTIGATION

This report is intended for the Client named herein and for their Client. The report should be read in its entirety, and no portion of this report may be used as a separate entity. 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.

The recommendations made in this report are in accordance with our present understanding of the project. We request that we be permitted to review our recommendations when the drawings and specifications are complete, or if the proposed construction should differ from that mentioned in this report.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments are based on the results obtained at the test locations only. It is therefore assumed that these results are representative of the subsoil conditions across the site. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations.

It should be noted that this report specifically addresses geotechnical aspects of the project and does not include any investigations or assessments relating to potential subsurface contamination. As such, there should be no assumptions or conclusions derived from this report with respect to potential soil or water contamination. This geotechnical investigation was carried out in conjunction with a hydrogeological study completed by GM BluePlan Engineering, provided under separate cover.

The samples obtained during the geotechnical investigation will be stored for a period of three months, after which time they will be disposed of unless alternative arrangements are made.

We trust that this report meets with your present requirements. Should you have any questions, please do not hesitate to contact our office.

Prepared by:



Jake Feeney, P.Eng.

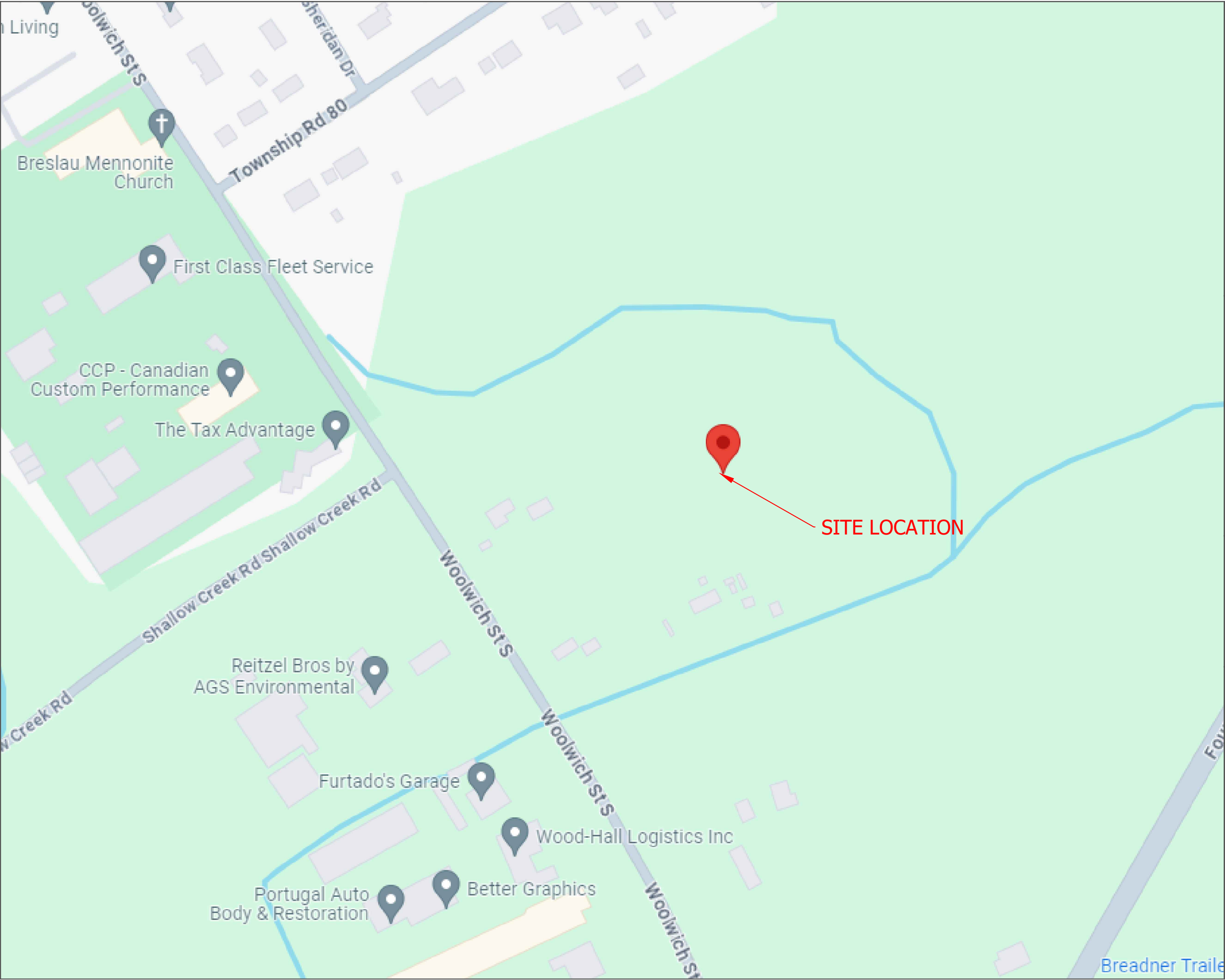
ht

Reviewed by:



Nathan Chortos, P.Eng.

Senior Geotechnical Engineer



NOTES:

1. BASE MAP PROVIDED BY GOOGLE MAPS

NO.	DESCRIPTION	DATE

REVISIONS



CMT ENGINEERING INC.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel.: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

PROJECT:

PROPOSED TRUCKING PARKING LOT
265 Woolwich Street South
Breslau, Ontario

DRAWING TITLE:

SITE LOCATION MAP

PROJECT NO.:	DATE:
24-070	March 1, 2024
SCALE:	DRAWING NO.
N.T.S.	1



NOTES:

1. AERIAL MAP PROVIDED BY GOOGLE MAPS.

Legend

-  CMT Borehole (2024)
-  CMT Monitoring Well (2024)
-  Temporary Benchmark (Sign Base at Reitzel Bros Environmental)



NO.	DESCRIPTION	DATE

REVISIONS



CMT ENGINEERING INC.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel.: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

PROJECT:

PROPOSED TRUCKING PARKING LOT
265 Woolwich Street South
Breslau, Ontario

DRAWING TITLE:

AERIAL MAP SHOWING BOREHOLE
LOCATIONS

PROJECT NO.: 24-070	DATE: March 1, 2024
SCALE: N.T.S.	DRAWING NO.: 2

APPENDIX A

BOREHOLE LOGS



CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 1

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

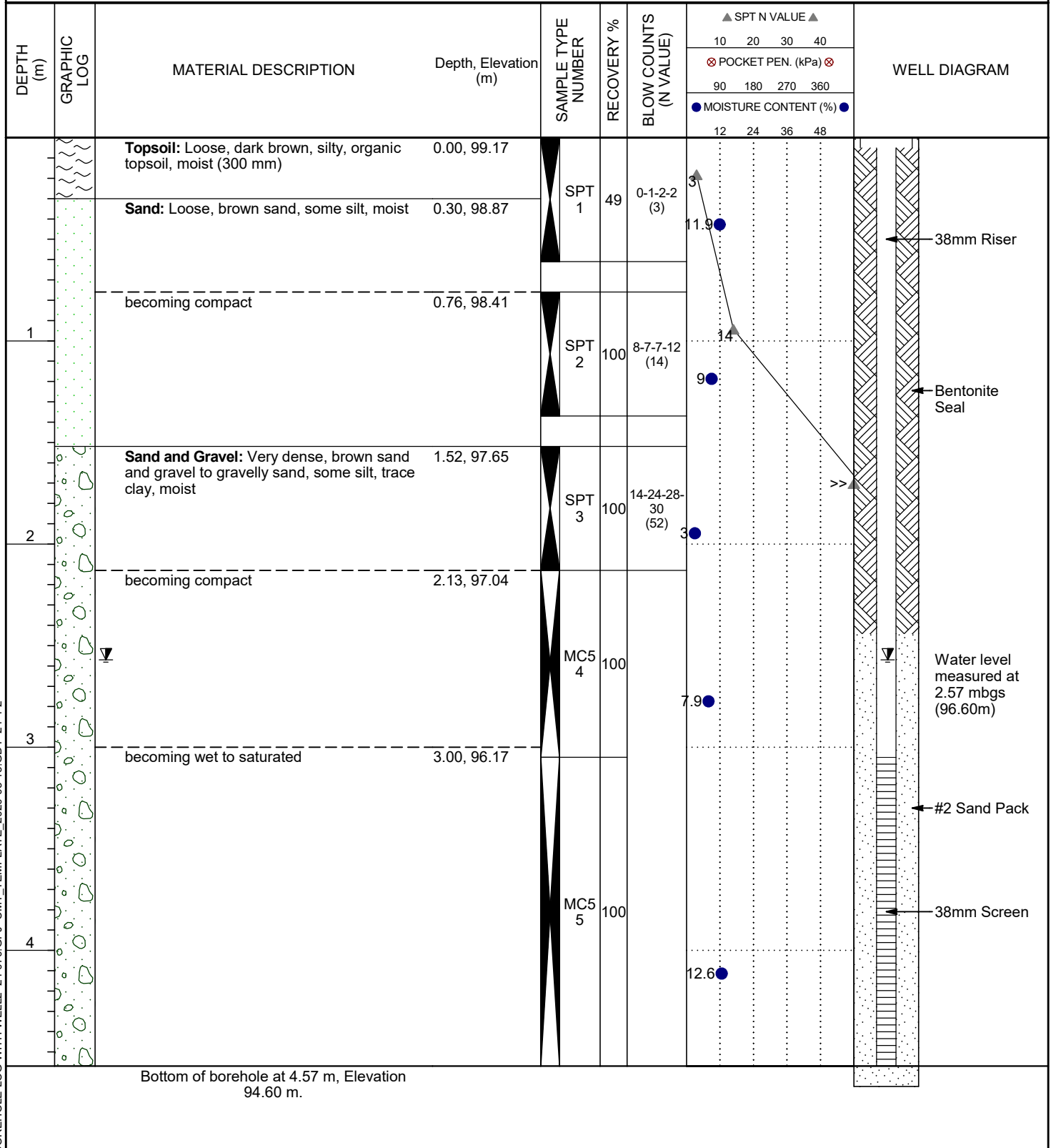
DRILLING CONTRACTOR: CMT Drilling Inc.

DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.17 m

LOGGED BY: J. Feeney

SAMPLING METHOD: SPT/MC5



BOREHOLE LOG WITH WELL2 24-070.GPJ CMT_TEMPLATE_2020-05-15.GDT 24-4-2



CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 2

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

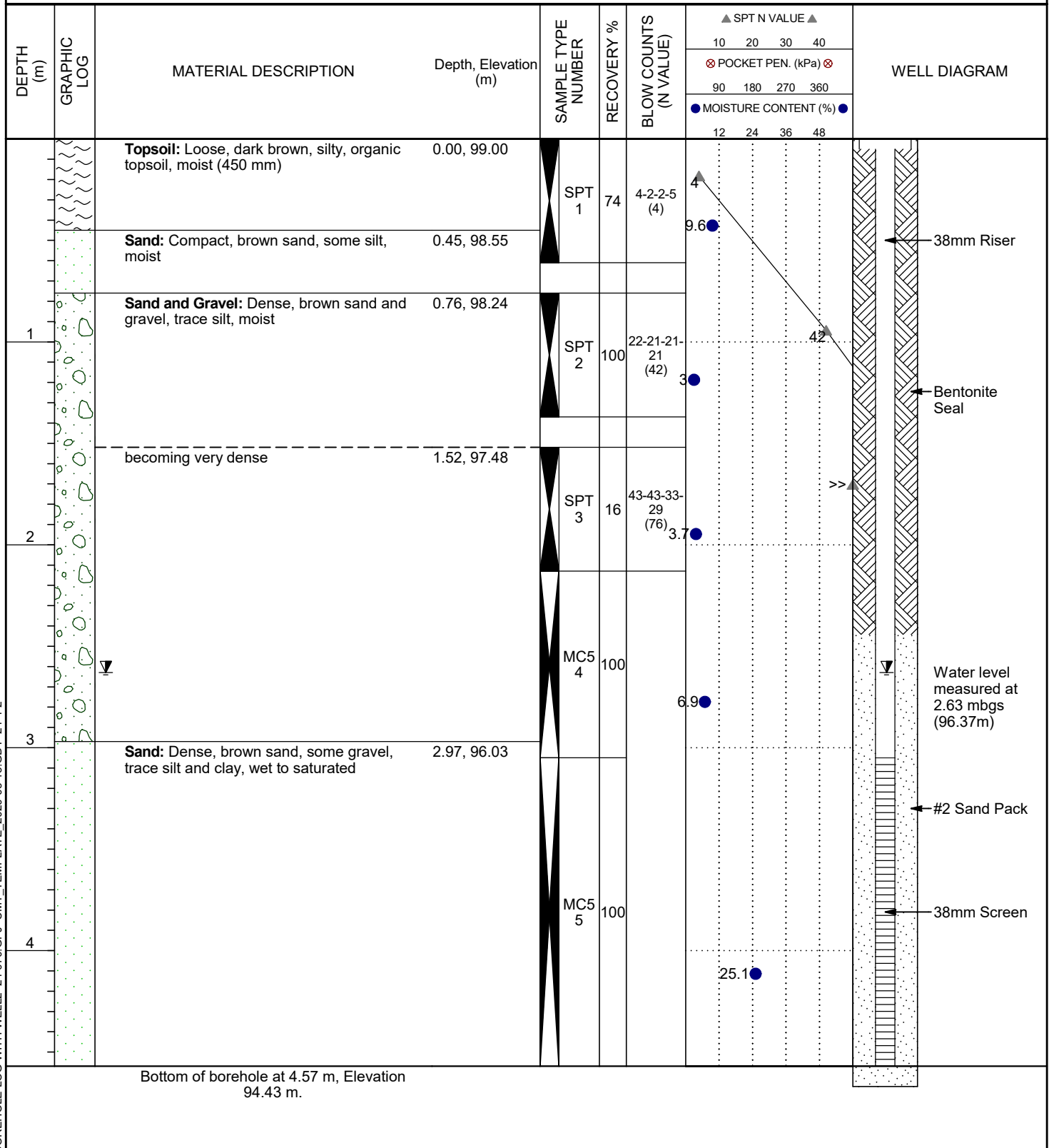
DRILLING CONTRACTOR: CMT Drilling Inc.

DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.00 m

LOGGED BY: J. Feeney

SAMPLING METHOD: SPT/MC5



BOREHOLE LOG WITH WELL2 24-070.GPJ CMT_TEMPLATE_2020-05-15.GDT 24-4-2



CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 3

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

DRILLING CONTRACTOR: CMT Drilling Inc.

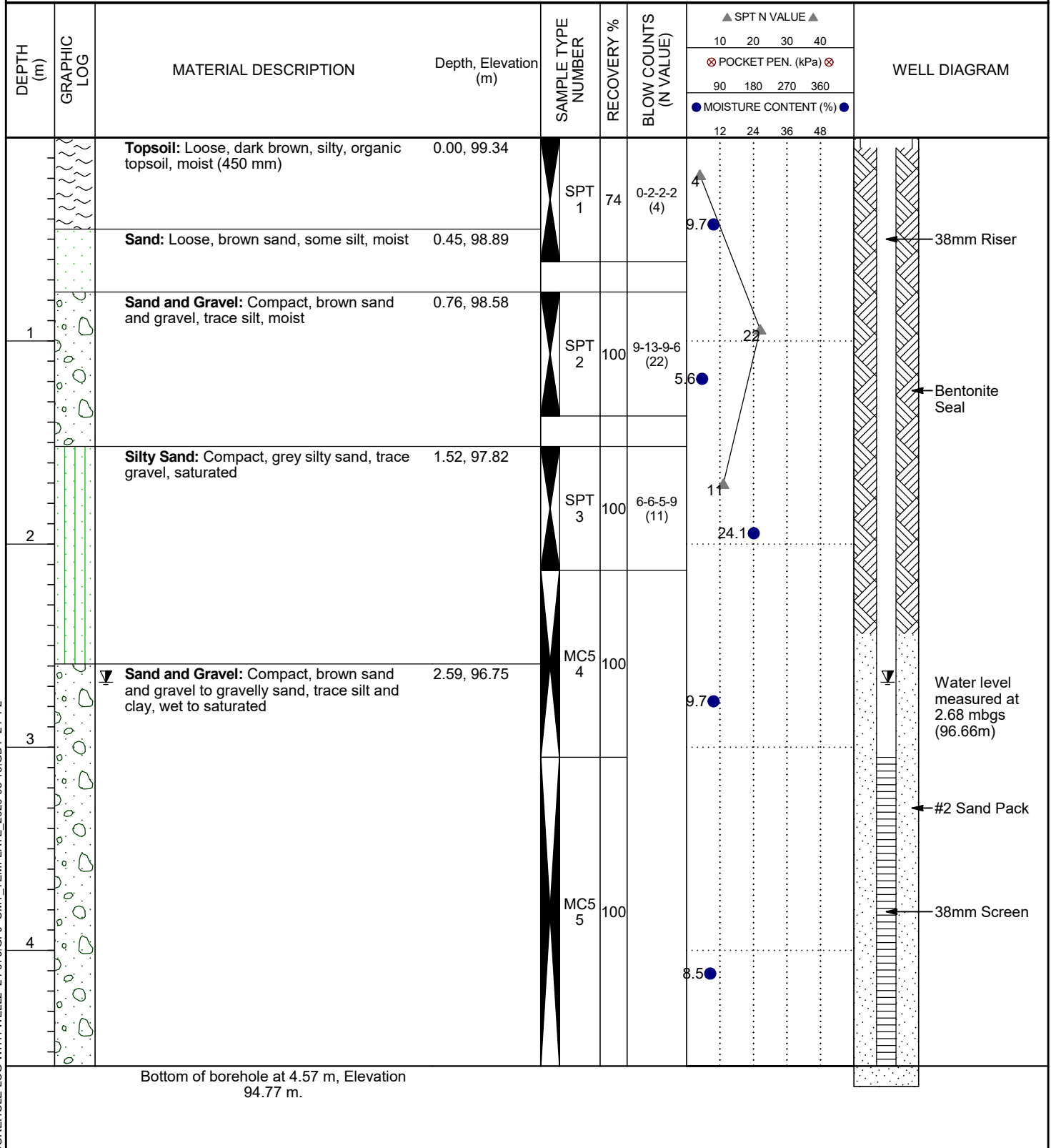
DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.34 m

LOGGED BY: J. Feeney

SAMPLING METHOD: SPT/MC5

BOREHOLE LOG WITH WELL2 24-070.GPJ CMT_TEMPLATE_2020-05-15.GDT 24-4-2





CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 4

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

DRILLING CONTRACTOR: CMT Drilling Inc.

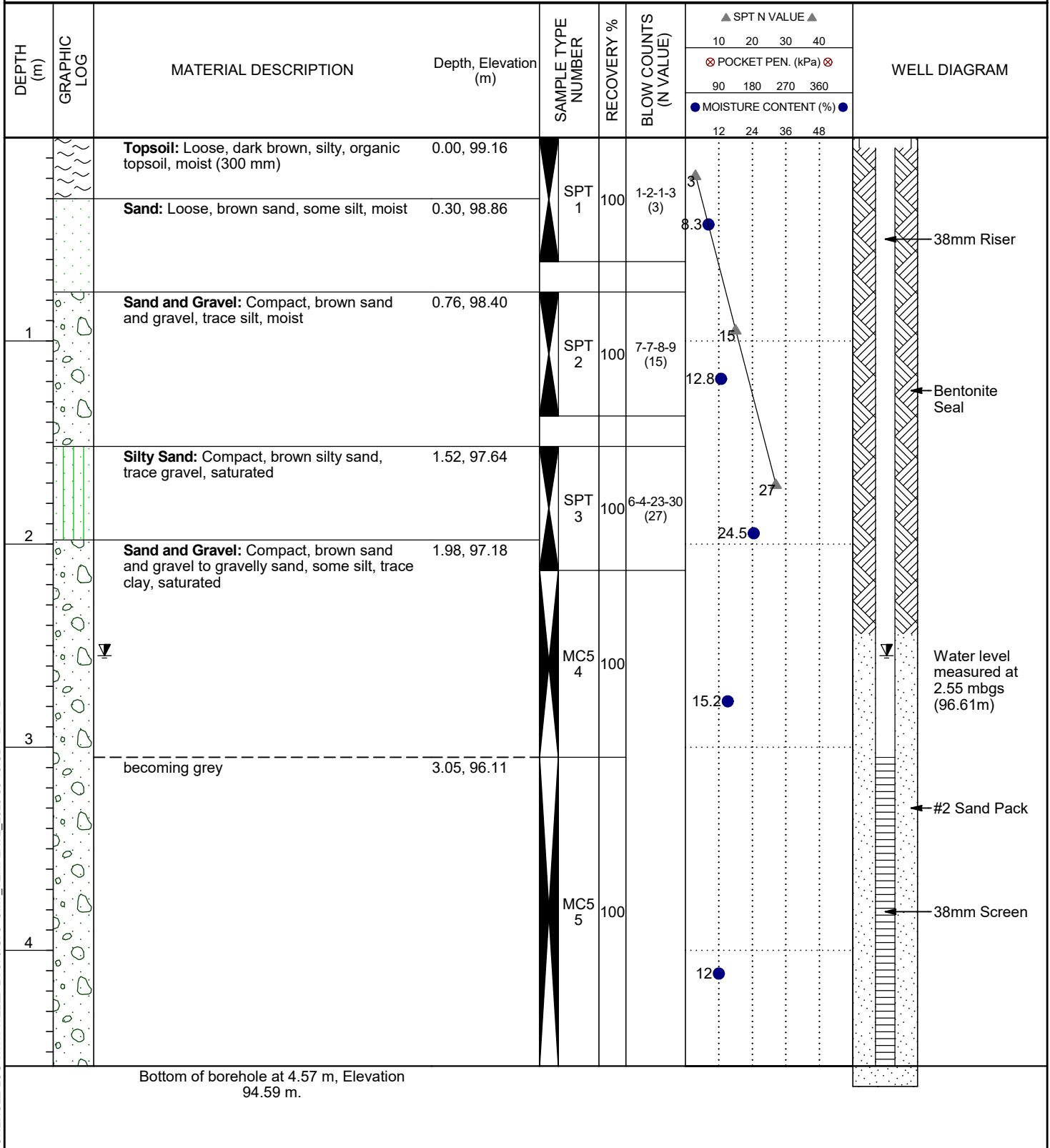
DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.16 m

LOGGED BY: J. Feeney

SAMPLING METHOD: SPT/MC5

BOREHOLE LOG WITH WELL2 24-070.GPJ CMT_TEMPLATE_2020-05-15.GDT 24-4-2





CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 5

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

DRILLING CONTRACTOR: CMT Drilling Inc.

DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.23 m

LOGGED BY: J. Feeney

SAMPLING METHOD: SPT/MC5

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				WELL DIAGRAM
							10	20	30	40	
							⊗ POCKET PEN. (kPa) ⊗				
							90	180	270	360	
							● MOISTURE CONTENT (%) ●				
							12	24	36	48	
1 <											

Bottom of borehole at 3.05 m, Elevation 96.18 m.



CMT Engineering Inc.
1011 Industrial Crescent
St. Clements, Ontario, N0B 2M0
Telephone: 519-699-5775
Fax: 519-699-4664

BOREHOLE NUMBER 6

PAGE 1 OF 1

PROJECT: Proposed Truck Parking Lot

PROJECT ADDRESS: 265 Woolwich Street South

PROJECT LOCATION: Breslau, Ontario

PROJECT NUMBER: 24-070

DRILLING DATE: 24-2-26

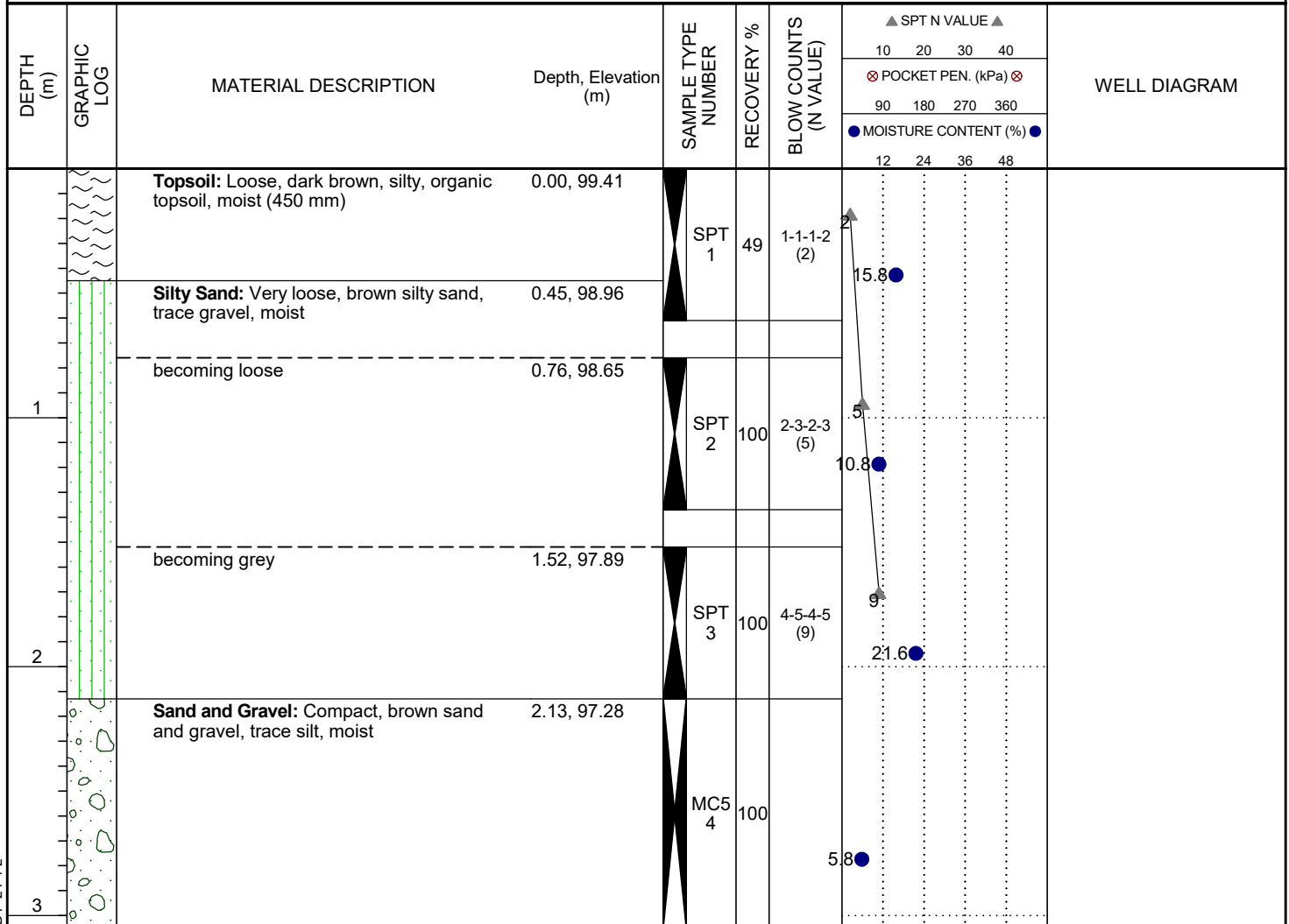
DRILLING CONTRACTOR: CMT Drilling Inc.

DRILLING EQUIPMENT: Geoprobe 7822DT

GROUND ELEVATION: 99.41 m

LOGGED BY: J. Feeney

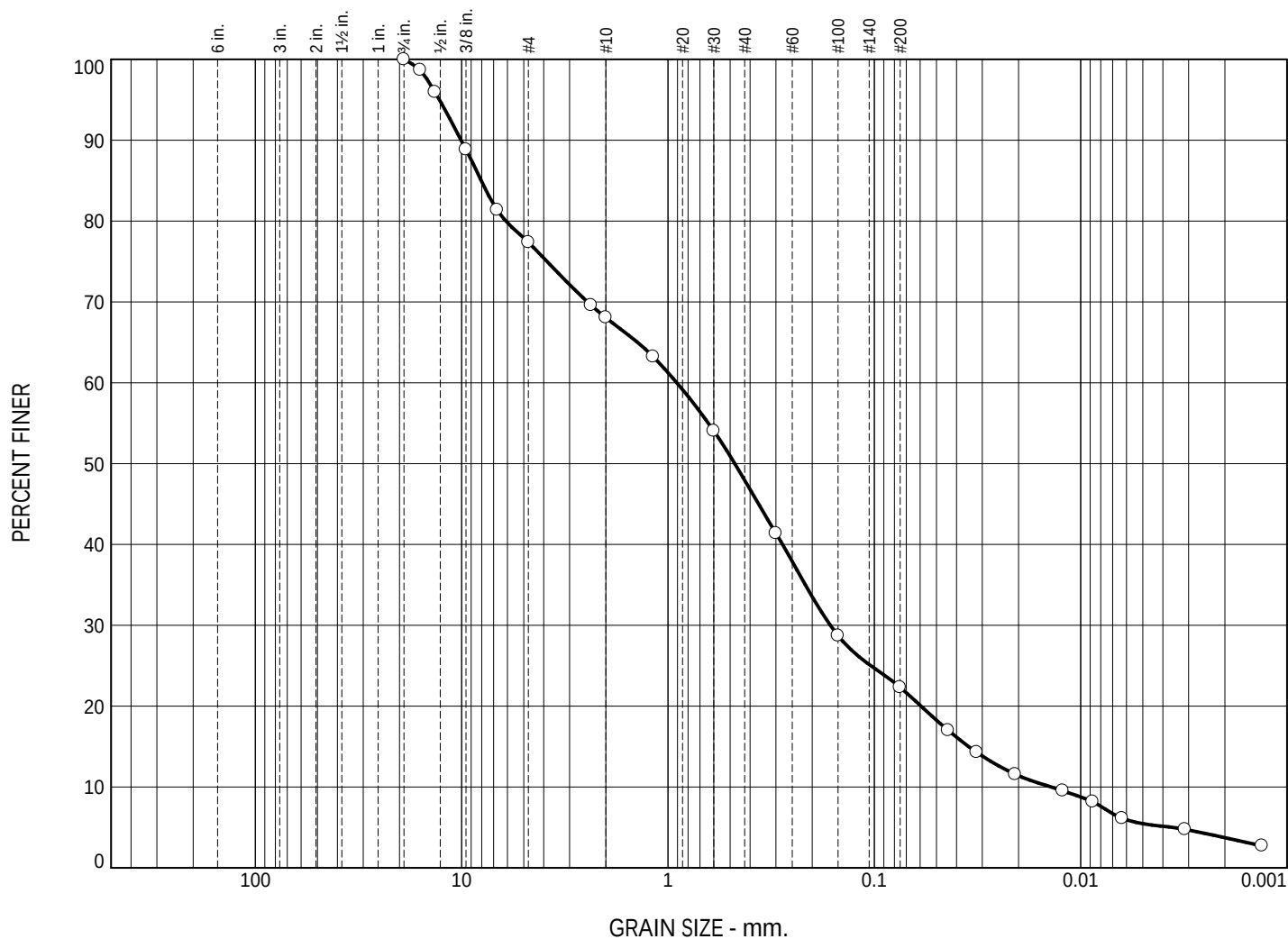
SAMPLING METHOD: SPT/MC5



APPENDIX B

GRAIN SIZE ANALYSES

Particle Size Distribution Report



GRAIN SIZE - mm.

	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	22.6	9.3	20.2	25.6	18.6	3.7

SOIL DATA

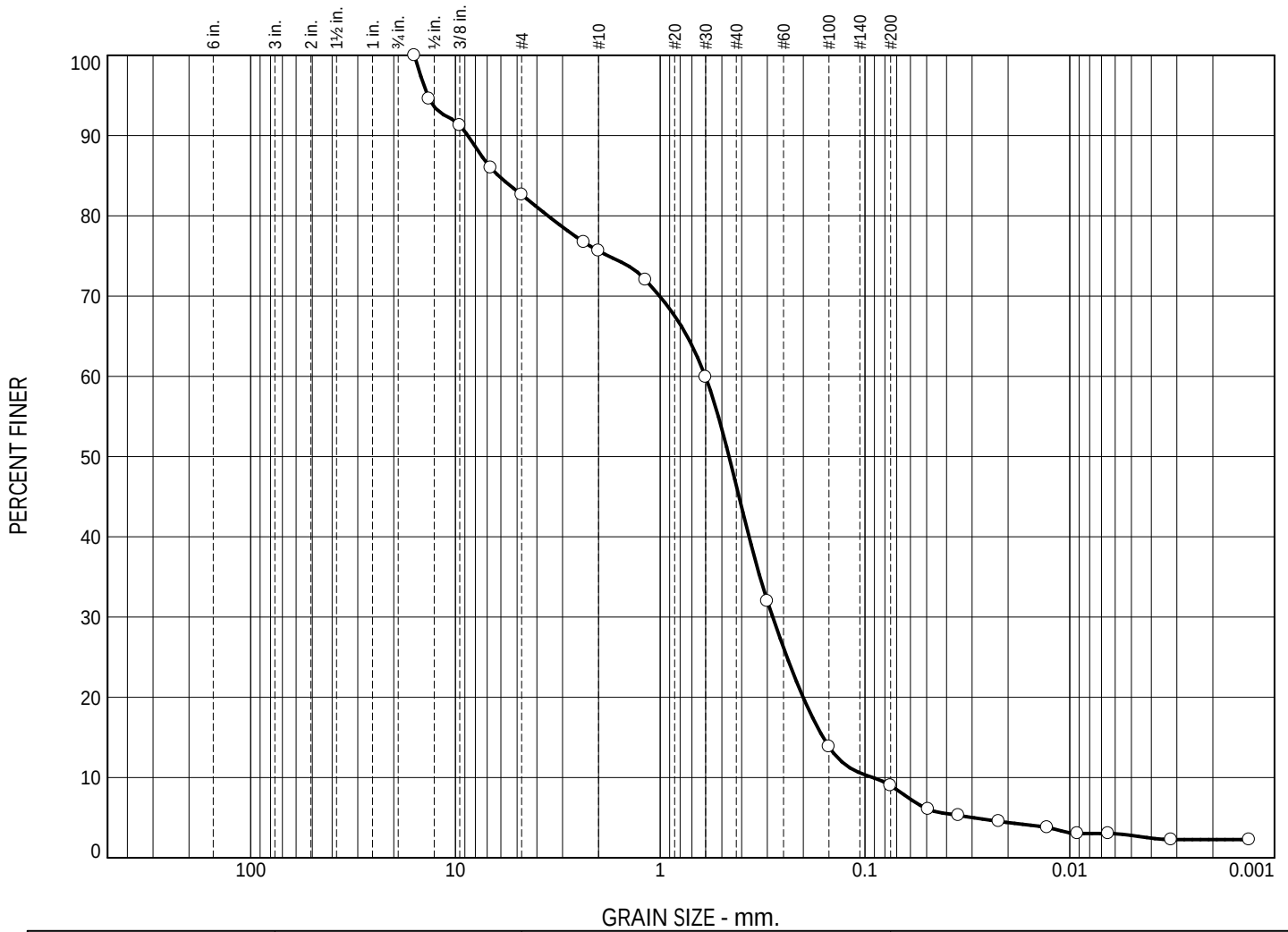
	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	4	2.13-3.05m	gravelly sand, some silt, trace clay	SM
				Sampled by JF of CMT Engineering Inc. February 26, 2024	
				Tested by JM of CMT Engineering Inc. February 28, 2024	

CMT Engineering Inc.

St. Clements, ON

Client: 786 Group Inc.
Project: Proposed Trucking Parking Lot
265 Woowich Street South, Breslau, Ontario
Project No.: 24-070

Particle Size Distribution Report

[illegible]

SOIL DATA					
	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	5	3.05-4.57m	sand, some gravel, trace silt and clay	SW-SM
				Sampled by JF of CMT Engineering Inc. February 26, 2024	
				Tested by JM of CMT Engineering Inc. February 28, 2024	

CMT Engineering Inc.

St. Clements, ON

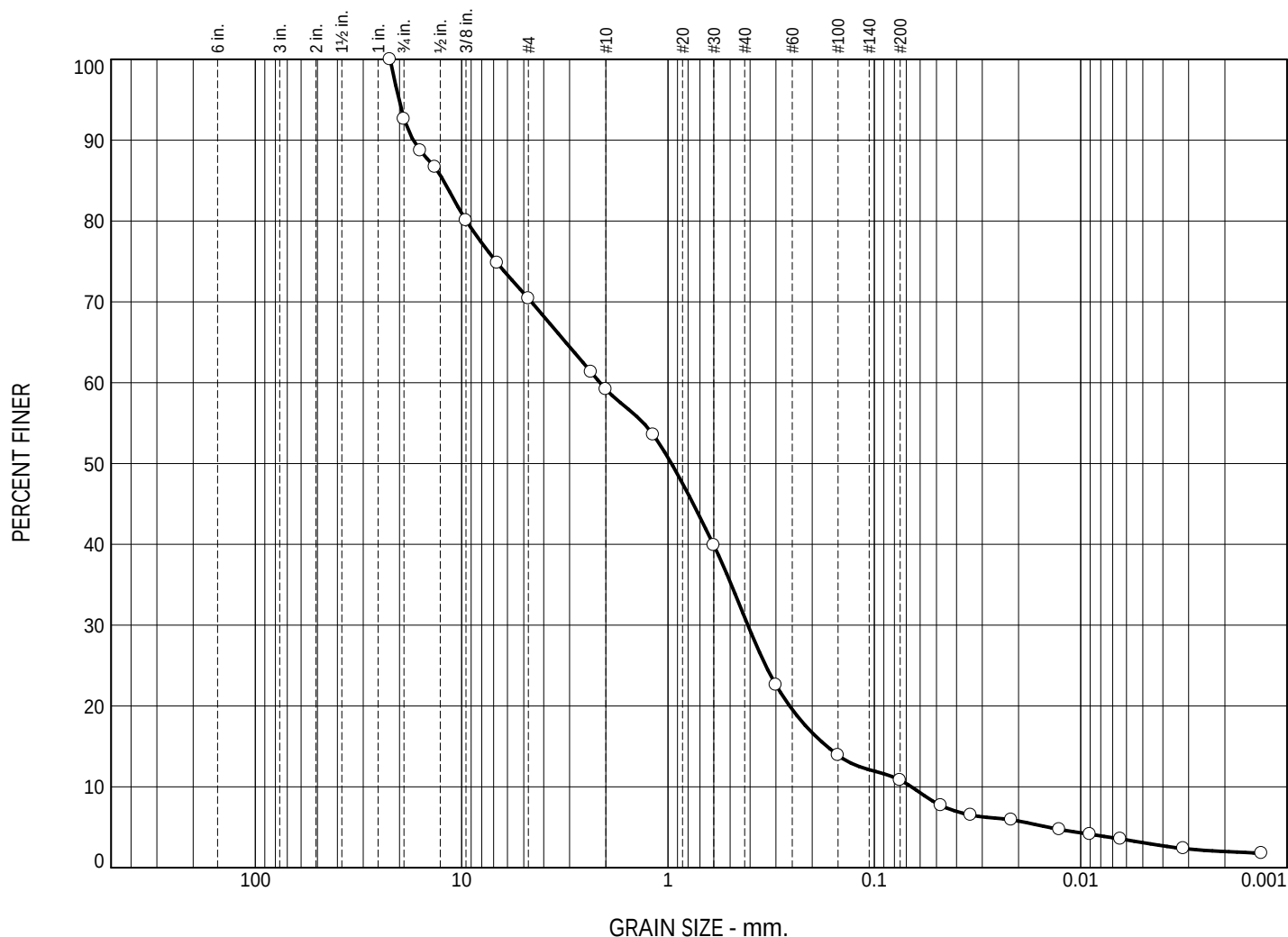
Client: 786 Group Inc.

Project: Proposed Trucking Parking Lot
265 Woowich Street South, Breslau, Ontario

Project No.: 24-070

Figure 2

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	7.4	22.2	11.2	28.2	20.2	8.8	2.0

SOIL DATA					
	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH3	5	3.05-4.57m	gravelly sand, some silt, trace clay	SW-SM
				Sampled by JF of CMT Engineering Inc. February 26, 2024	
				Tested by JM of CMT Engineering Inc. February 28, 2024	

CMT Engineering Inc.

St. Clements, ON

Client: 786 Group Inc.
Project: Proposed Trucking Parking Lot
265 Woowich Street South, Breslau, Ontario
Project No.: 24-070

The graph illustrates the grain size distribution of a soil sample. The y-axis represents the percentage of soil finer than a given grain size, ranging from 0 to 100. The x-axis represents the grain size in millimeters on a logarithmic scale, ranging from 100 mm down to 0.001 mm. The curve shows that approximately 100% of the soil is finer than 60 mm, and about 1% of the soil is finer than 0.075 mm.

Grain Size (mm)	Percent Finer (%)
60	100
40	100
30	100
20	100
10	100
7.5	100
6	100
4.75	100
3.75	100
3.0	100
2.5	100
2.0	100
1.5	100
1.18	100
0.85	100
0.75	100
0.6	100
0.425	100
0.3	100
0.25	100
0.2	100
0.15	100
0.106	100
0.075	100
0.06	100
0.05	100
0.0425	100
0.0375	100
0.03	100
0.025	100
0.02	100
0.015	100
0.0106	100
0.0075	100
0.006	100
0.005	100
0.00425	100
0.00375	100
0.003	100
0.0025	100
0.002	100
0.0015	100
0.00106	100
0.00075	100
0.0006	100
0.0005	100
0.000425	100
0.000375	100
0.0003	100
0.00025	100
0.0002	100
0.00015	100
0.000106	100
0.000075	100
0.00006	100
0.00005	100
0.0000425	100
0.0000375	100
0.00003	100
0.000025	100
0.00002	100
0.000015	100
0.0000106	100
0.0000075	100
0.000006	100
0.000005	100
0.00000425	100
0.00000375	100
0.000003	100
0.0000025	100
0.000002	100
0.0000015	100
0.00000106	100
0.00000075	100
0.0000006	100
0.0000005	100
0.000000425	100
0.000000375	100
0.0000003	100
0.00000025	100
0.0000002	100
0.00000015	100
0.000000106	100
0.000000075	100
0.00000006	100
0.00000005	100
0.0000000425	100
0.0000000375	100
0.00000003	100
0.000000025	100
0.00000002	100
0.000000015	100
0.0000000106	100
0.0000000075	100
0.000000006	100
0.000000005	100
0.00000000425	100
0.00000000375	100
0.000000003	100
0.0000000025	100
0.000000002	100
0.0000000015	100
0.00000000106	100
0.00000000075	100
0.0000000006	100
0.0000000005	100
0.000000000425	100
0.000000000375	100
0.0000000003	100
0.00000000025	100
0.0000000002	100
0.00000000015	100
0.000000000106	100
0.000000000075	100
0.00000000006	100
0.00000000005	100
0.0000000000425	100
0.0000000000375	100
0.00000000003	100
0.000000000025	100
0.00000000002	100
0.000000000015	100
0.0000000000106	100
0.0000000000075	100
0.000000000006	100
0.000000000005	100
0.00000000000425	100
0.00000000000375	100
0.000000000003	100
0.0000000000025	100
0.000000000002	100
0.0000000000015	100
0.00000000000106	100
0.00000000000075	100
0.0000000000006	100
0.0000000000005	100
0.000000000000425	100
0.000000000000375	100
0.0000000000003	100
0.00000000000025	100
0.0000000000002	100
0.00000000	

[illegible]

SOIL DATA					
	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH4	1	3.05-4.57m	gravelly sand, trace silt and clay	SP-SM
				Sampled by JF of CMT Engineering Inc. February 26, 2024	
				Tested by JM of CMT Engineering Inc. February 28, 2024	

St. Clements, ON

Project: Proposed Trucking Parking Lot
265 Woowich Street South, Breslau, Ontario

Project No.: 24-070

Figure 4

APPENDIX C

WELL RECORDS

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A384133

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Maan

First Name

Irsan

Organization

786 Group inc

Email Address

Current Address

Unit Number

Street Number *

1474

Street Name *

Laurier Ave

City/Town/Village

Milton

Country

Can

Province

ON

Postal Code

L9T 8T4

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

265

Street Name *

Woolwich St S

Township

Lot

Concession

County/District/Municipality

City/Town

Breslau

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

547827

4813030

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

15

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Topsoil	Fill		0	2
Brown	Silt	Sand		2	15

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 Holeplug	0.17
8	15	#2 Sand	0.15

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☒ Direct Push
☐ Other (specify) _____

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☐ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☒ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☐ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.145	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.9	Plastic	10	10	15

10. Water Details

Water found at Depth (ft) ☐ Gas Kind of water ☐ Fresh ☐ Untested ☐ Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	15	3.5

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☒ No
Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)		

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. ☐ Make map area bigger



14. Information

Well owner's information package delivered

☐ Yes ☐ No

Date Package Delivered (yyyy/mm/dd)

Date Work Completed (yyyy/mm/dd) *

2024/02/26

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *

CMT DRILLING INC

Well Contractor's License Number *

7366

Business Address

Unit Number

1

Street Number

1011

Street Name *

INDUSTRIAL CRES

City/Town/Village *

ST CLEMENTS

Province

ON

Postal Code *

N0B 2M0

Business Telephone Number

519-699-5775

Business Email Address

info@cmtinc.net

Last Name of Well Technician *

BLACK

First Name of Well Technician *

CHRIS

Well Technician's License Number *

3711

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name

BLACK

First Name

CHRIS

Email Address

cblack@cmtinc.net

Signature

Chris Black

Digitally signed by Chris Black

Date: 2024.03.01 12:12:01 -05'00'

Date Submitted (yyyy/mm/dd)

2024/03/01

17. Ministry Use Only

Audit Number

MB6C LCEG

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A384132

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Maan

First Name

Irsan

Organization

786 Group inc

Email Address

Current Address

Unit Number

Street Number *

1474

Street Name *

Laurier Ave

City/Town/Village

Milton

Country

Can

Province

ON

Postal Code

L9T 8T4

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

265

Street Name *

Woolwich St S

Township

Lot

Concession

County/District/Municipality

City/Town

Breslau

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

547846

4812997

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

15

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Topsoil	Fill		0	2
Brown	Silt	Sand		2	15

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 Holeplug	0.17
8	15	#2 Sand	0.15

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☒ Direct Push
☐ Other (specify) _____

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☐ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☒ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☐ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.145	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.9	Plastic	10	10	15

10. Water Details

Water found at Depth (ft) ☐ Gas Kind of water ☐ Fresh ☐ Untested ☐ Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	15	3.5

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☒ No
Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)		

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. ☐ Make map area bigger



14. Information

Well owner's information package delivered

☐ Yes ☐ No

Date Package Delivered (yyyy/mm/dd)

Date Work Completed (yyyy/mm/dd) *

2024/02/26

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *

CMT DRILLING INC

Well Contractor's License Number *

7366

Business Address

Unit Number

1

Street Number

1011

Street Name *

INDUSTRIAL CRES

City/Town/Village *

ST CLEMENTS

Province

ON

Postal Code *

N0B 2M0

Business Telephone Number

519-699-5775

Business Email Address

info@cmtinc.net

Last Name of Well Technician *

BLACK

First Name of Well Technician *

CHRIS

Well Technician's License Number *

3711

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name

BLACK

First Name

CHRIS

Email Address

cblack@cmtinc.net

Signature

Chris Black

Digitally signed by Chris Black

Date: 2024.03.01 13:39:43 -05'00'

Date Submitted (yyyy/mm/dd)

2024/03/01

17. Ministry Use Only

Audit Number

JVO5 W5LV

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A384131

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Maan

First Name

Irsan

Organization

786 Group inc

Email Address

Current Address

Unit Number

Street Number *

1474

Street Name *

Laurier Ave

City/Town/Village

Milton

Country

Can

Province

ON

Postal Code

L9T 8T4

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

265

Street Name *

Woolwich St S

Township

Lot

Concession

County/District/Municipality

City/Town

Breslau

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

547964

4813074

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

15

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Topsoil	Fill		0	2
Brown	Silt	Sand		2	15

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 Holeplug	0.17
8	15	#2 Sand	0.15

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☒ Direct Push
☐ Other (specify) _____

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☐ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☒ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☐ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.145	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.9	Plastic	10	10	15

10. Water Details

Water found at Depth (ft) ☐ Gas Kind of water ☐ Fresh ☐ Untested ☐ Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	15	3.5

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☒ No
Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)		

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. ☐ Make map area bigger



14. Information

Well owner's information package delivered

☐ Yes ☐ No

Date Package Delivered (yyyy/mm/dd)

Date Work Completed (yyyy/mm/dd) *

2024/02/26

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *

CMT DRILLING INC

Well Contractor's License Number *

7366

Business Address

Unit Number

1

Street Number

1011

Street Name *

INDUSTRIAL CRES

City/Town/Village *

ST CLEMENTS

Province

ON

Postal Code *

N0B 2M0

Business Telephone Number

519-699-5775

Business Email Address

info@cmtinc.net

Last Name of Well Technician *

BLACK

First Name of Well Technician *

CHRIS

Well Technician's License Number *

3711

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name

BLACK

First Name

CHRIS

Email Address

cblack@cmtinc.net

Signature

Chris Black

Digitally signed by Chris Black

Date: 2024.03.01 13:41:00 -05'00'

Date Submitted (yyyy/mm/dd)

2024/03/01

17. Ministry Use Only

Audit Number

7L5S CTBK

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A333631

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Maan

First Name

Irsan

Organization

786 Group inc

Email Address

Current Address

Unit Number

Street Number *

1474

Street Name *

Laurier Ave

City/Town/Village

Milton

Country

Can

Province

ON

Postal Code

L9T 8T4

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

265

Street Name *

Woolwich St S

Township

Lot

Concession

County/District/Municipality

City/Town

Breslau

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

547942

4813119

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

15

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Topsoil	Fill		0	2
Brown	Silt	Sand		2	15

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 Holeplug	0.17
8	15	#2 Sand	0.15

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☒ Direct Push
☐ Other (specify) _____

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☐ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☒ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☐ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
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10. Water Details

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11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	15	3.5

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☒ No
Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)		

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. ☐ Make map area bigger



14. Information

Well owner's information package delivered

☐ Yes ☐ No

Date Package Delivered (yyyy/mm/dd)

Date Work Completed (yyyy/mm/dd) *

2024/02/26

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *

CMT DRILLING INC

Well Contractor's License Number *

7366

Business Address

Unit Number

1

Street Number

1011

Street Name *

INDUSTRIAL CRES

City/Town/Village *

ST CLEMENTS

Province

ON

Postal Code *

N0B 2M0

Business Telephone Number

519-699-5775

Business Email Address

info@cmtinc.net

Last Name of Well Technician *

BLACK

First Name of Well Technician *

CHRIS

Well Technician's License Number *

3711

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name

BLACK

First Name

CHRIS

Email Address

cblack@cmtinc.net

Signature

Chris Black

Digitally signed by Chris Black

Date: 2024.03.01 13:42:22 -05'00'

Date Submitted (yyyy/mm/dd)

2024/03/01

17. Ministry Use Only

Audit Number

IJ2S BZQI