Teetzel Farm

Preliminary Geotechnical Investigation

Project Location:
Union Road Shedden; Southwold, ON

Prepared for:
Cyril J. Demeyere Limited CJDL
261 Broadway PO Box 460, Tillsonburg, ON , N4G 4H8

Prepared by:
MTE Consultants
51061 Hargrieve Rd, London, ON N6E 1P6

October 15, 2025

MTE File No.: 62861_001

Engineers, Scientists, Surveyors.

Contents

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Appendices

1.0 Introduction

MTE Consultants Inc. (MTE) was retained by Cyril J. Demeyere Limited (CJDL) to complete a preliminary geotechnical investigation for the proposed development at the Teetzel Farm in Shedden, Ontario (hereafter referred to as the "Site"). The subject lands are about 4.5 hectares in size. The site is currently an agricultural field.

The purpose of this geotechnical investigation is to assess the subsurface soil and groundwater conditions in the area of the proposed development and to provide preliminary geotechnical engineering recommendations to support the design of the development.

The ground surface at the site is generally slightly undulating with a grade difference of approximately 5.1 m between the borehole locations.

2.0 Field and Laboratory Program

The fieldwork for this investigation was carried out between June 18 and 20, 2025 and consisted of twelve (12) boreholes that were drilled to depths ranging from about 5.0 to 8.1 metres (m). The approximate locations of the boreholes are shown on the Site Plan, **Figure 1**, in **Appendix A**.

Private and public utility companies were contacted prior to the start of drilling. The boreholes were advanced with a Diedrich D50T track mounted drill rig equipped with continuous flight hollow stem augers that was supplied and operated by London Soil Test Ltd.

Standard Penetration Testing (SPT) and sampling was carried out at regular intervals of depth in each of the boreholes conventional split spoon equipment. The SPT N-values recorded are plotted on the borehole logs in **Appendix B**.

Upon completion of drilling, a monitoring well was installed in each of boreholes MW101-25, MW103-25 and MW106-25. The installations consisted of 1.5 m filtered screens and bentonite seals above the screens. Water level measurements were taken by MTE on June 25, 2025. Details of the installation and groundwater observations and measurements are provided on the appended borehole logs.

The monitoring wells were installed in accordance with Ontario Regulation 468/10. A licensed well technician must properly decommission all wells before construction. The construction, maintenance and abandonment of the wells are regulated under the province's Water Resources Act. The other boreholes were backfilled with bentonite in accordance with Ontario Regulation 468/10.

The fieldwork was monitored throughout by a member of our geotechnical engineering staff, who directed the drilling, documented the SPT tests, documented the soil stratigraphies, monitored the groundwater conditions and transported the recovered soil samples to our office for further classification.

The ground surface elevations at borehole locations were surveyed by MTE and referenced to geodetic datum.

All of the soil samples collected were tested for moisture content, the results of which are shown on the borehole logs. Four samples were tested for particle size distribution and two samples for Atterberg limits determinations. The results of these laboratory tests are provided in **Appendix C**. The remaining soil samples will be stored for a period of 1 month and will be discarded at that time unless prior request from the client to extend storage time is received.

3.0 Soil and Groundwater Conditions

The subsurface soil and groundwater conditions were established at the borehole locations only. Subsurface conditions should be expected to vary, in some instances significantly, between and beyond the borehole locations. The stratigraphic boundaries shown on the borehole logs have been inferred from non-continuous sampling and, as such, are approximate and typically represent transitions between soil types and do not necessarily represent exact planes of geological change.

Reference is provided to the appended borehole logs for soil stratigraphy details, SPT N-values, moisture contents and groundwater observations and measurements. The soil conditions encountered at the site typically consisted of topsoil overlying layers of silt and sandy silt which are underlain by clayey silt deposits. The approximate locations of the boreholes are shown on the Site Plan, **Figure 1**, in **Appendix A**.

3.1 Topsoil

Topsoil was encountered at the ground surface in all of the boreholes. The topsoil was 130 millimetres (mm) to 1.1 thick with an average thickness of about 400 mm. The topsoil was assessed by visual, textural and olfactory observation; no nutrient testing to assess its potential to support vegetal growth was performed as part of the scope of work for this project.

3.2 Silt and Sandy Silt

Silt and sandy silt deposits were encountered beneath the topsoil in all of the boreholes. These deposits were 0.4 to 4.3 m thick.

SPT N-values measured in the silt and sandy silt ranged from 4 to 28 blows per 300 mm penetration of the split spoon sampler indicating very loose to compact conditions. Insitu moisture contents in the silt and sandy silt ranged from about 18 to 38%.

3.3 Clayey Silt (Inferred Glacial Till)

Clayey silt deposits, inferred to represent glacial till, were encountered beneath the silt to sandy silt. All of the boreholes were terminated in the clayey silt. The results of particle size distribution analyses conducted on four samples of clayey silt are provided in **Appendix C** and summarized in the following table:

Table 1 - Particle Size Distribution Analyses – Clayey Silt

Borehole	Sample Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
MW101-25	3.0 – 3.5	0	1	79	20
MW103-25	3.0 – 3.5	0	0	69	31
MW106-25	3.8 – 4.3	0	0	68	32
BH107-25	2.3 – 2.7	0	8	55	37

Cobbles were noted during drilling in the clayey silt and boulders should be expected.

SPT N-values measured in the clayey silt ranged from 6 to 30 blows per 300 mm penetration of the split spoon sampler indicating firm to hard conditions. Insitu moisture contents in the cohesive soils ranged from about 17 to 27%. Two Atterberg limits determinations indicated plastic limits of 14% and 15% and liquid limits of 24% indicating inorganic clays of low plasticity.

3.4 Groundwater Conditions

Groundwater observations were carried out in the open boreholes at the time of drilling and water level measurements were obtained from the monitoring wells on June 25, 2025 and October 14, 2025. The encountered and measured groundwater levels are summarized in the table below:

Table 2 –Groundwater Observations

Borehole	Ground Surface Elevation (m)	Groundwater Levels					
		Encountered		Measured – October 14/25		Measured – June 25/25	
		Depth (m)	Elevation (m)	Depth (m)	Elevation (m)	Depth (m)	Elevation (m)
MW101-25	220.0	3.4	216.6	4.3	215.7	1.2	218.8
BH102-25	218.3	-	-	-	-	-	-
MW103-25	217.2	3.4	213.8	dry	dry	0.9	216.3
BH104-25	220.5	-	-	-	-	-	-
BH105-25	219.0	-	-	-	-	-	-
MW106-25	218.6	1.5	217.1	dry	dry	1.5	217.1
BH107-25	216.9	2.4	214.5	-	-	-	-
BH108-25	217.0	-	-	-	-	-	-
BH109-25	215.4	-	-	-	-	-	-
BH110-25	216.1	-	-	-	-	-	-
BH111-25	217.5	-	-	-	-	-	-
BH112-25	216.8	-	-	-	-	-	-

"-" denotes borehole dry during drilling

Groundwater levels should be expected to fluctuate seasonally and in response to significant precipitation events.

4.0 Discussion and Recommendations

4.1 General

This section of the report provides geotechnical engineering recommendations for the preliminary design of the project. These recommendations are intended for use by the project designers and are based on our interpretation of the factual information obtained. Where comments are made related to construction, they are provided to draw attention to aspects that could affect the design. Contractors bidding on or carrying out the work should make their own interpretation of the factual information contained in this report and make their own

interpretation of that information to assess how it may affect means and methods, equipment selection, staging, costing and the like.

The following subsections of this report contain preliminary geotechnical recommendations and comments pertaining to the development of the site including site preparation and grading, foundations, site servicing, pavement design and low impact development. However, given that the details of the development have yet to be determined, the recommendations should be considered general in nature and will need to be revisited and revised or refined, if and as required, as the development design progresses to reflect the actual proposed design and construction.

It is understood that the proposed residential development will consist of townhomes and two low rise apartment buildings with access roads and parking lots. It is anticipated that the development will be serviced with municipal water and sewers.

4.2 Site Preparation and Engineered Fill

At this time, proposed site grades are not known, but grade may be altered by cutting, filling and/or a combination of cutting and filling. All topsoil, fill materials, organic and/or deleterious materials should be stripped and, where required, subexcavated from the footprints of the portions of the site to receive fill and from borrow/cut areas. It is recommended that topsoil be separated from other deleterious materials and stockpiled.

The average topsoil thickness measured in the boreholes was about 400 mm.

Fills required to raise grades should be constructed as engineered fill which can consist of imported granular materials. Based on the investigation, the silt and sandy silt are too wet for use as fill unless it can be properly dried prior to compaction. It is recommended that the materials proposed for use be pre-sampled by MTE to confirm their suitability prior to their use as engineered fill. The engineered fill should extend a minimum of 1.0m plus the thickness of fill beyond the edge of any footings and can be estimated by projecting a line downwards and outwards to subgrade level at an angle of 45 degrees to the horizontal starting 1m beyond any edge of footing.

Prior to constructing engineered fill (also referred to as “structural fill”), the subgrade should be proofrolled with a heavy compactor operating in static mode under the direction of the geotechnical engineer and any loose, soft or poorly performing areas addressed. The engineered fill materials should be at an appropriate water content for compaction purposes and placed in maximum 300mm thick lifts. Engineered fill should be uniformly compacted to 98% of standard Proctor maximum dry density. To the extent feasible, the engineered fill should be crowned to promote runoff and reduce the potential for ponding of water. Full time geotechnical inspections and in situ density testing, together with the related laboratory testing, is required during any engineered fill construction.

The subgrade soils are susceptible to disturbance and it is recommended that construction traffic on the unprotected subgrade be limited. Depending on the time of year of construction and the prevailing weather conditions, it may be necessary to place a starter lift of 500mm of OPSS.MUNI 1010 Granular B Type II or recycled concrete to enhance trafficability.

4.3 Preliminary Foundation Recommendations

Depending on final grades, the founding soils are expected to consist of silt to sandy silt, clayey silt and/or engineered fill.

The silt to sandy silt, clayey silt and engineered fill are capable of providing geotechnical resistances consistent with low rise development. Spread and/or strip footings for the townhomes constructed on the undisturbed sandy silt, clayey silt till or engineered fill can be designed using a factored geotechnical resistance at ultimate limit states (ULS) of 150 kPa and a geotechnical reaction at serviceability limit states (SLS) of 100 kPa. The SLS value corresponds to 25 mm of total settlement; differential settlements are expected to be about half this value.

The above geotechnical resistances are not expected to be sufficient to support the low rise buildings on conventional foundations. However, supporting the buildings on raft slabs is expected to be feasible. For raft slab systems, the geotechnical resistances at ULS and SLS are very dependent on the geometry of the slab. It is anticipated that a factored geotechnical resistance at ULS of greater than 500 kPa is available. Deformations of the slab can be assessed using an unfactored modulus of subgrade reaction, $k_{0.3}$, of 35 to 45 MPa/m; this value is based on a 0.3 m by 0.3 m loaded area and must be corrected to reflect the slab geometry. Once the building footprints have been established, MTE can confirm the resistance at ULS and provide the geometry corrected modulus of subgrade reaction.

The founding materials are susceptible to disturbance by construction activity, especially during wet weather, and care should be taken to preserve the integrity of the material as bearing strata.

The soil in trenches beneath footings for sewer and watermain services, if applicable, should be compacted by tamping up to the level of the footing or filled with concrete having a strength of at least 10 MPa.

The founding soils should be inspected by the geotechnical engineer prior to pouring concrete to confirm that the soil conditions encountered during construction are consistent with the boreholes and the design assumptions. Any loose, disturbed, organic or deleterious material identified during the inspection should be removed from the excavation base and replaced with engineered fill or concrete. A working slab of lean concrete should be considered to protect the integrity of the founding soils.

All exterior floor slabs and footings in unheated areas must be provided with a minimum 1.2 m of earth cover after final grading to reduce the potential for damage due to frost action. If construction is undertaken during the winter, the subgrade soil and concrete should be protected from freezing.

Given the presence of variable thicknesses of very loose to compact silt to sandy silt, it is recommended that site specific evaluation of the Site Classification using geophysical methods be completed to assess earthquake loads and effects.

4.4 Excavations and Dewatering

Excavations at the site are expected to encounter silt to sandy silt, clayey silt and engineered fill. For classification purposes in accordance with the Occupational Health and Safety Act and Regulations for Construction Projects, the engineered fill and the silt to sandy silt would be classified as Type 3 soils above the groundwater level as would the clayey silt. The silt to sandy silt below the groundwater level would be classified as Type 3 or Type 4 soils, depending on the effectiveness of dewatering.

Excavation side slopes at the site should be inclined at 1 horizontal to 1 vertical or flatter. The slopes may need to be flattened further and/or blanketed with free draining material to enhance stability where seepage is actively occurring and for excavations that extend beyond the silt to sandy silt/clayey silt interface.

Given the proximity of silt to sandy silt/clayey silt interface and the fine grained nature of the silt to sandy silt, proactive dewatering using well points, eductors or the like is expected to be difficult and not overly effective. It is anticipated that temporary dewatering is probably best accomplished by pumping from properly filtered and constructed sumps in the base of the excavations. Care should be taken to direct all surface water away from open excavations.

4.5 Site Servicing

4.5.1 Excavations and Dewatering

The preliminary recommendations provided in Section 4.4 are applicable to excavations for site servicing

4.5.2 Pipe Bedding

Pipe bedding should consist of Class 'B' pipe bedding comprised of minimum 150 mm thick layer of OPSS.MUNI 1010 Granular A below the pipe invert. Granular A should be provided around the pipe to at least 300 mm above the pipe and the bedding uniformly compacted to 95% of standard Proctor maximum dry density.

A well-graded clear stone such as HL4 coarse aggregate could be used as bedding below the spring line of the pipe to facilitate sump pump dewatering, if necessary. The clear stone should be nominally compacted with a plate tamper. Regardless of the presence of water, any clear stone bedding should be fully wrapped with a non-woven geotextile.

4.5.3 Trench Backfilling

As indicated previously, the excavated silt to sandy silt is too wet to be used as backfill. Some portions of the clayey silt are also above the optimum water content for compaction and some drying may be required. As such, consideration should be given to using a granular material such as OPSS.MUNI Granular B Type I. The backfill should be placed in 300 mm thick lifts and compacted to at least 95% of standard Proctor maximum dry density. The upper 1 m of the trench backfill that will form pavement, sidewalk or other subgrades should be placed in 200 mm thick lifts and compacted to 98% of standard Proctor maximum dry density.

Backfilling operations should follow closely after excavation so that only a nominal length of trench is exposed. Care should be taken to protect side slopes of excavations by diverting surface run-off away from the excavations. If construction extends into the winter, care should be taken to minimize frost and ensure that frozen material is not used as backfill.

4.6 Pavements

It is anticipated that the proposed development will include an access road and parking areas. A summary of the proposed pavement components are shown in the Table 3 below. The pavement subgrade soils are expected to consist of silt to sandy silt,clayey silt or compacted trench backfill.

Table 3 - Pavement Design

Pavement Component	General Pavement Thickness (mm)	Light Duty Access Roads
HL 3 Surface Asphalt	40	40
HL 8 Binder Asphalt	50	50
OPSS 1010 Granular 'A'	150 mm	150 mm
OPSS 1010 Granular 'B' Type III	450 mm	300 mm

Samples of aggregates should be checked for conformance to OPSS.MUNI 1010 prior to delivery to site and periodically during construction. The Granular B subbase and Granular A base courses should be compacted to 100% of standard Proctor maximum dry density as verified by insitu density testing.

The asphaltic concrete paving materials should conform to the requirements of OPSS.MUNI 1150. The asphalt should be placed and compacted in accordance with OPSS.MUNI 310. PGAC 58-28 is recommended for the binder and surface asphalt mixtures.

The pavement design is based on the assumption that construction will be carried out during the drier time of the year and that the subgrade has been properly prepared and shaped. All materials and construction services required for the work should be in accordance with the relevant sections of the Ontario Provincial Standard Specifications.

Short perforated stub drains should be provided at all catch basin locations. Subdrain installation should be in accordance with OPSS.MUNI 405 and OPSD 216.021. The subdrain should be 100 or 150 mm diameter perforated pipe conforming to OPSS.MUNI 1840 and wrapped with geotextile conforming to OPSS.MUNI 1860.

4.7 Infiltration Rates of Native Soils

Since the soils at the site consist predominantly fine-grained soils including silt, sandy silt and clayey silt and since the water table is relatively high, at-source infiltration of stormwater runoff will be difficult. Once the design of the development has progressed, it is recommended that in situ infiltration testing be carried out in the areas proposed for LIDs to inform the design.

4.8 Preliminary Hydrogeological Comments

Based on our review of the borehole logs and groundwater levels measured to date, the following preliminary findings are provided:

The observed stratigraphy generally consisted of surficial topsoil underlain by native silt to sandy silt and clayey silt (which is inferred to represent glacial till).

Groundwater within the glacial till deposits was measured at depths between 0.9 and 1.5 m below ground surface (BGS) on June 25, 2025. On October 14, 2025, groundwater was measured at 4.3 m BGS at MW101-25 with the two other monitoring wells reported to be dry. This drop between monitoring events is in line with other large drops in groundwater levels that

have been reported at sites across southwestern Ontario throughout the late summer and early fall months of 2025. The long-term groundwater level should be expected where the soil colour changes to grey soils at depths of about 0.8 to 1.5 m BGS.

The Source Protection Information Atlas (Ministry of Environment, Conservation and Parks, 2021) was used to confirm that the Site is not within:

i. an Intake Protection Zone (IPZ);
ii. a Wellhead Protection Area (WHPA);
iii. a Highly Vulnerable Aquifer (HVA); or
iv. a Significant Groundwater Recharge Area (SGRA).

Residential properties in the vicinity of the Site are anticipated to be connected to a piped municipal water supply with the exception of 9184 County Road 20 which appears to rely on a private water supply. However, this property is located approximately 300 m southwest of the Site boundary and is unlikely to be impacted by construction dewatering related to the proposed site development.

Excavations for services, foundations and basements will generally encounter silt to sandy silt and clayey silt soils. Saturated sand and silt seams may be present in the clayey silt.

There is a mapped watercourse that crosses the Site that is classified as tile drains running beneath the agricultural fields that currently occupies the Site

No other potential groundwater receptors have been identified.

An Environmental Activity and Sector Registry (EASR) is not considered warranted for this site. If required, the design of any dewatering system should be the contractor's responsibility but should be such that groundwater is lowered at least 0.5 m below the excavation base (s).

4.9 Construction inspection and Testing

MTE recommends that input continue throughout the design of the project. It would be beneficial for MTE to review and provide input to the contract documents prior to bidding.

Full time geotechnical inspections and testing are required during construction of any engineered fill. Regular geotechnical inspections and materials testing should be carried out during construction to confirm that the project and material specifications are consistently being met. MTE offers geotechnical inspection, soil, aggregate and asphalt compaction testing, testing of plastic and hardened concrete and laboratory testing services.

5.0 Limitations of Report

Services performed by MTE Consultants Inc. (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Geotechnical Engineering & Consulting profession practicing under similar conditions in the same geographic area where the services are provided. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of the Client. This report is not intended to be exhaustive in scope or to imply a risk-free site. As such, this report may not deal with all issues potentially applicable to the site and may omit aspects which are or may be of interest to the reader.

In addition, it should be recognized that a soil sample result represents one distinct portion of a site at the time it is collected, and that the findings of this report are based on conditions as they existed during the time period of the investigation. The material in the report reflects our best judgment using the information available at the time the report was written. The soil and groundwater conditions between and beyond the test holes may differ from those encountered in the test holes. Should subsurface conditions arise that are different from those in the test holes MTE should be notified to determine whether or not changes should be made as a result of these conditions.

It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because groundwater conditions of a property can change, along with regulatory requirements. All design details were not known at the time of submission of this report and it is recommended MTE should be retained to review the final design documents prior to construction to confirm they are consistent with our report recommendations. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may determine whether it affects the contents of this report.

Any use which another party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by another party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans. The contractors bidding on this project or undertaking the construction should make their own interpretation of the factual information and draw their own conclusions as to how subsurface conditions may affect their work.

The benchmark and elevations provided in this report are primarily established to identify differences between the test hole locations and should not be used for other purposes such as, planning, development, grading, and excavation.

All of which is respectfully submitted,

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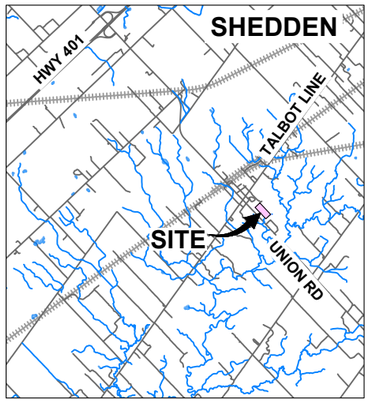
https://mte85.sharepoint.com/sites/62861_001/Shared Documents/03- Reports/2025-10-15 FINAL/62861-100_2025-10-15_Teetzel_Farm_Shedden_Geotech_Report_Final.docx

Figures

Figure 1 - Site Plan



KEY PLAN (nts)

LEGEND

- SITE
- BOREHOLE
- BOREHOLE/MONITORING WELL
- **(220.0m)** ELEVATION (m AMSL)

REFERENCES

SOUTHWESTERN ONTARIO ORTHOPHOTOGRAPHY PROJECT (2015), SOURCE: DATA PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY, © COPYRIGHT: 2025 KING'S PRINTER OF ONTARIO, ALL RIGHTS RESERVED.; AND
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NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

0 25 50 75m

MTE
Engineers, Scientists, Surveyors

PROJECT
GEOTECHNICAL INVESTIGATION
TEETZEL FARM DEVELOPMENT
SHEDDEN, ONTARIO

TITLE
SITE PLAN

Drawn SS/DCH/CJW	Scale 1:1,500	Figure 1
Checked	Project No. 62861_001	
Date 2025-07-02	Rev No. 0	

Appendix B

Borehole Logs

Abbreviations and Symbols

MTE Boreholes MW101-25 to BH112-25

The following are abbreviations and symbols commonly used on borehole logs, figures and reports.

Sample Types

AS	Auger Sample
CS	Chunk Sample
BS	Bulk Sample
GS	Grab Sample
WS	Wash Sample
SS	Split Spoon
RC	Rock Core
SC	Soil Core
TW	Thinwall, Open
TP	Thinwall, Piston

Soil Tests

PP	Pocket Penetrometer
FV	Field Vane
SPT	Standard Penetration Test
CPT	Cone Penetration Test
WC	Water Content
WL	Water Level

Penetration Resistance

Standard Penetration Test, N (ASTM D1586)	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.) open spilt spoon sampler for a distance of 300 mm (12 in.).
Dynamic Cone Penetration Resistance	The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive an uncased 50 mm (2 in.) diameter, 60o cone attached to “A” size drill rods for a distance of 300 mm (12 in.).

Soil Description

Cohesive Soils	Undrained Shear Strength (Cu)	
Consistency	kPa	psf
Very Soft	0 to 12	0 to 250
Soft	12 to 25	250 to 500
Firm	25 to 50	500 to 1,000
Stiff	50 to 100	1,000 to 2,000
Very Stiff	100 to 200	2,000 to 4,000
Hard	Above 200	Above 4,000

Cohesionless Soils	
Relative Density	SPT N Value
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	Above 50

WH	Sampler advanced by static weight of hammer
WR	Sampler advanced by static weight of drilling rods
PH	Sampler advanced by hydraulic force
PM	Sampler advanced by manual force

DTPL	Drier than Plastic Limit
APL	About Plastic Limit
WTPL	Wetter than Plastic Limit
mbgs	Metres below Ground Surface

ID No.: MW101-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/18/2025

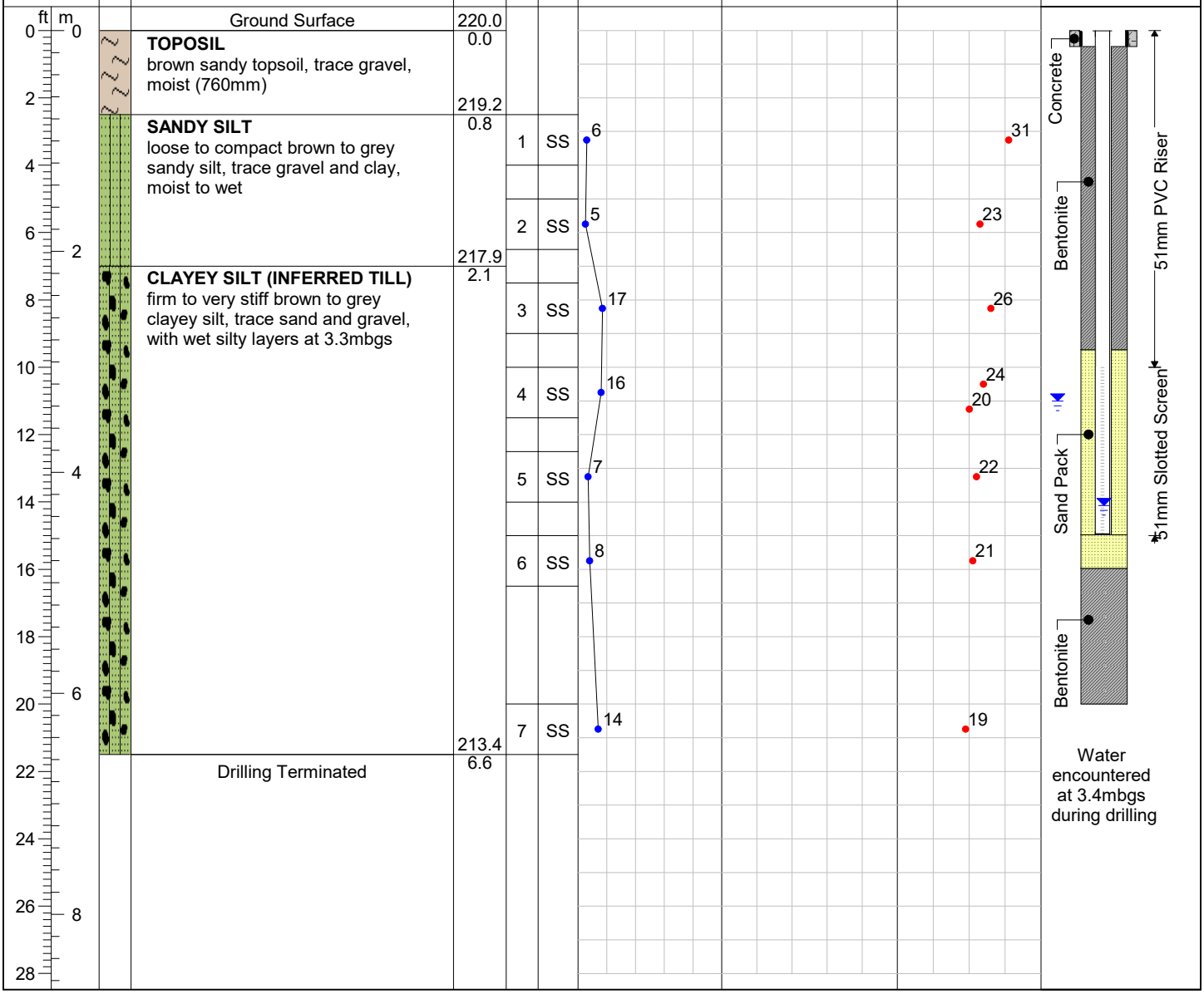
Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft / m)	Soil Description	Elevation (masl) / Depth (m)	Sample Number	Sample Type
0 / 0	Ground Surface	220.0		
0 / 0	**TOPOSIL** brown sandy topsoil, trace gravel, moist (760mm)	0.0 / 219.2		
2 / 0.6	**SANDY SILT** loose to compact brown to grey sandy silt, trace gravel and clay, moist to wet	0.8 / 217.9	1	SS
6 / 2			2	SS
8 / 2.1	**CLAYEY SILT (INFERRED TILL)** firm to very stiff brown to grey clayey silt, trace sand and gravel, with wet silty layers at 3.3mbgs	2.1	3	SS
10 / 3			4	SS
14 / 4			5	SS
16 / 5			6	SS
20 / 6			7	SS
22 / 6.6	Drilling Terminated	213.4 / 6.6		



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

Water measured on June 25, 2025 at 1.16mbgs (Elevation 218.84masl)

Water measured on October 14, 2025 at 4.3mbgs (Elevation 215.7masl)

ID No.: BH102-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/18/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft / m)	Soil Description	Elevation (masl) / Depth (m)	Sample Number	Sample Type	Standard Penetration (Dynamic Cone)	Shear Strength (PP / FV) kPa	Water Content %
0 / 0	Ground Surface	218.3					
0 / 0	**TOPSOIL** brown sandy topsoil, trace gravel, moist (760mm)	0.0 / 217.6					
2 / 0.6	**SANDY SILT** loose to compact brown to grey sandy silt, trace gravel and clay, moist to wet	0.8	1	SS	8		24
4 / 1.2			2	SS	11		26, 21
6 / 1.8			3	SS	9		24
8 / 2.4			4	SS	18		19, 18
10 / 3		214.5					
12 / 3.7	**CLAYEY SILT (INFERRED TILL)** stiff to hard brown to grey clayey silt, trace sand and gravel	3.8	5	SS	10		18
14 / 4.3			6	SS	11		18
16 / 4.9			7	SS	30		18
18 / 5.5		211.8					
20 / 6.1	Drilling Terminated	6.6					
22 / 6.7							
24 / 7.3							
26 / 7.9							
28 / 8.5							

Groundwater Observations and Standpipe Details: Bentonite

Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

MTE

ID No.: MW103-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

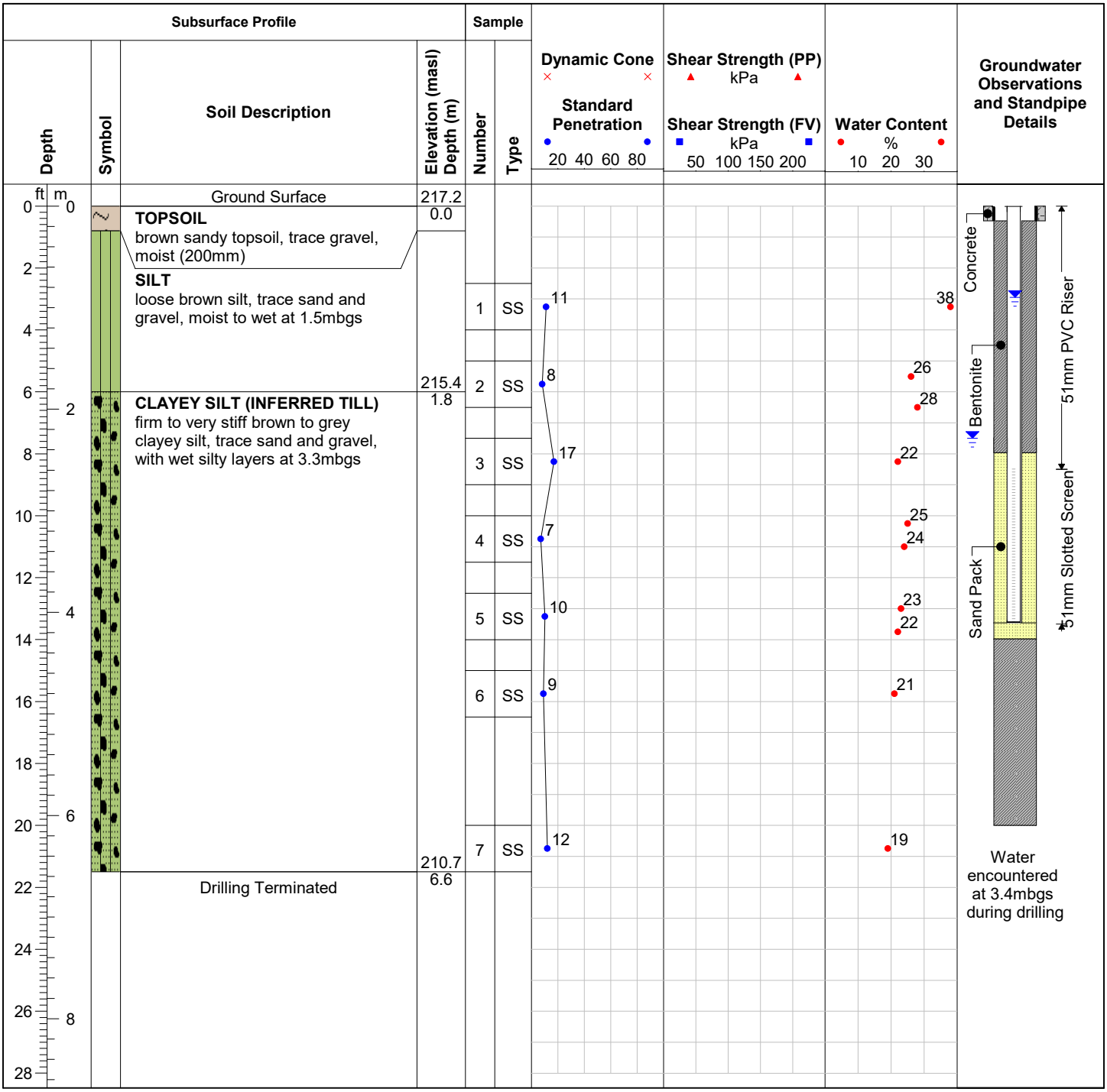
Date Completed: 6/18/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

Water measured on June 25, 2025 at 0.9mbgs (Elevation 216.3masl)

Well dry on October 14, 2025

ID No.: BH104-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/20/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft)	Depth (m)	Soil Description	Elevation (masl)	Depth (m)	Sample Number	Sample Type
0	0	Ground Surface	220.5	0.0		
		TOPSOIL brown sandy topsoil, trace gravel, moist (1070mm)	219.5	1.1	1	SS
		SANDY SILT loose brown sandy silt, trace clay, moist	219.0	1.5	2	SS
6	2	**CLAYEY SILT (INFERRED TILL)** very stiff to firm brown to grey clayey silt, trace sand and gravel, with wet silty layers at 3.8mbgs			3	SS
10					4	SS
12	4				5	SS
16					6	SS
20	6				7	SS
22		Drilling Terminated	214.0	6.6		
26	8					

Sample Number	Dynamic Cone / Standard Penetration	Shear Strength (PP) kPa	Shear Strength (FV) kPa	Water Content %
1	6			15
				22
2	10			23
3	7			26
4	15			21
5	24			20
6	8			27
				21
7	6			20

Groundwater Observations and Standpipe Details: Bentonite

Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

ID No.: BH105-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/20/2025

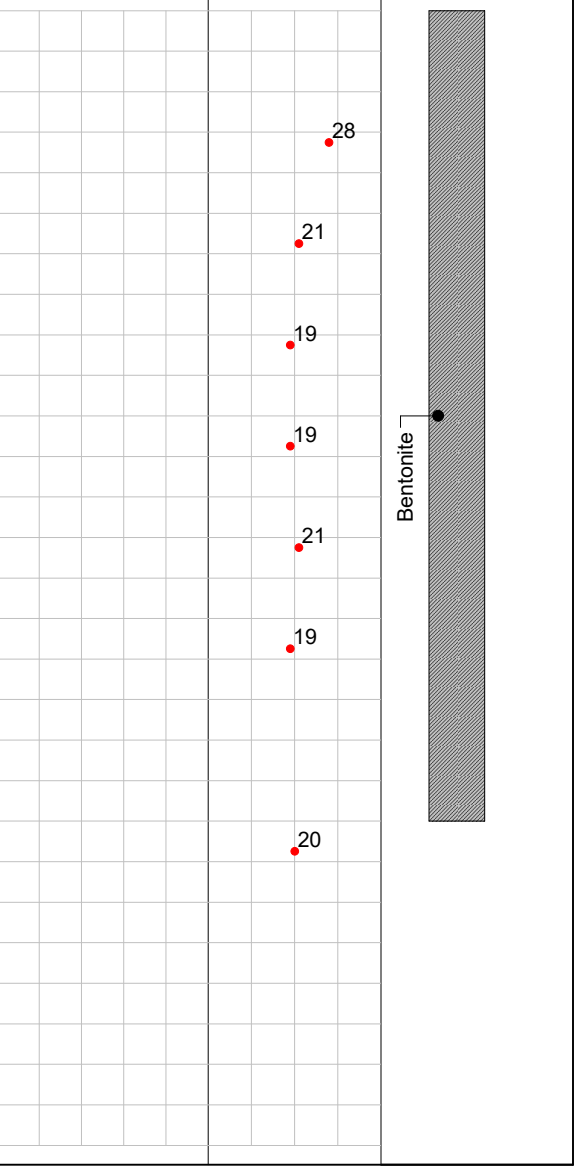
Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft)	Depth (m)	Symbol	Soil Description	Elevation (masl)	Depth (m)	Sample Number	Sample Type
0	0		Ground Surface	219.0	0.0		
0	0		**TOPSOIL** black sandy topsoil, moist (250mm)				
2			**SANDY SILT** very loose to compact brown to grey sandy silt, trace clay and sand, with clayey seams, moist			1	SS
4							
6	2					2	SS
8						3	SS
10						4	SS
12	4					5	SS
14				214.4	4.6		
16			**CLAYEY SILT (INFERRED TILL)** stiff grey clayey silt, trace sand and gravel, cobbles			6	SS
18							
20	6					7	SS
22				212.4	6.6		
24			Drilling Terminated				
26	8						
28							



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

ID No.: MW106-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

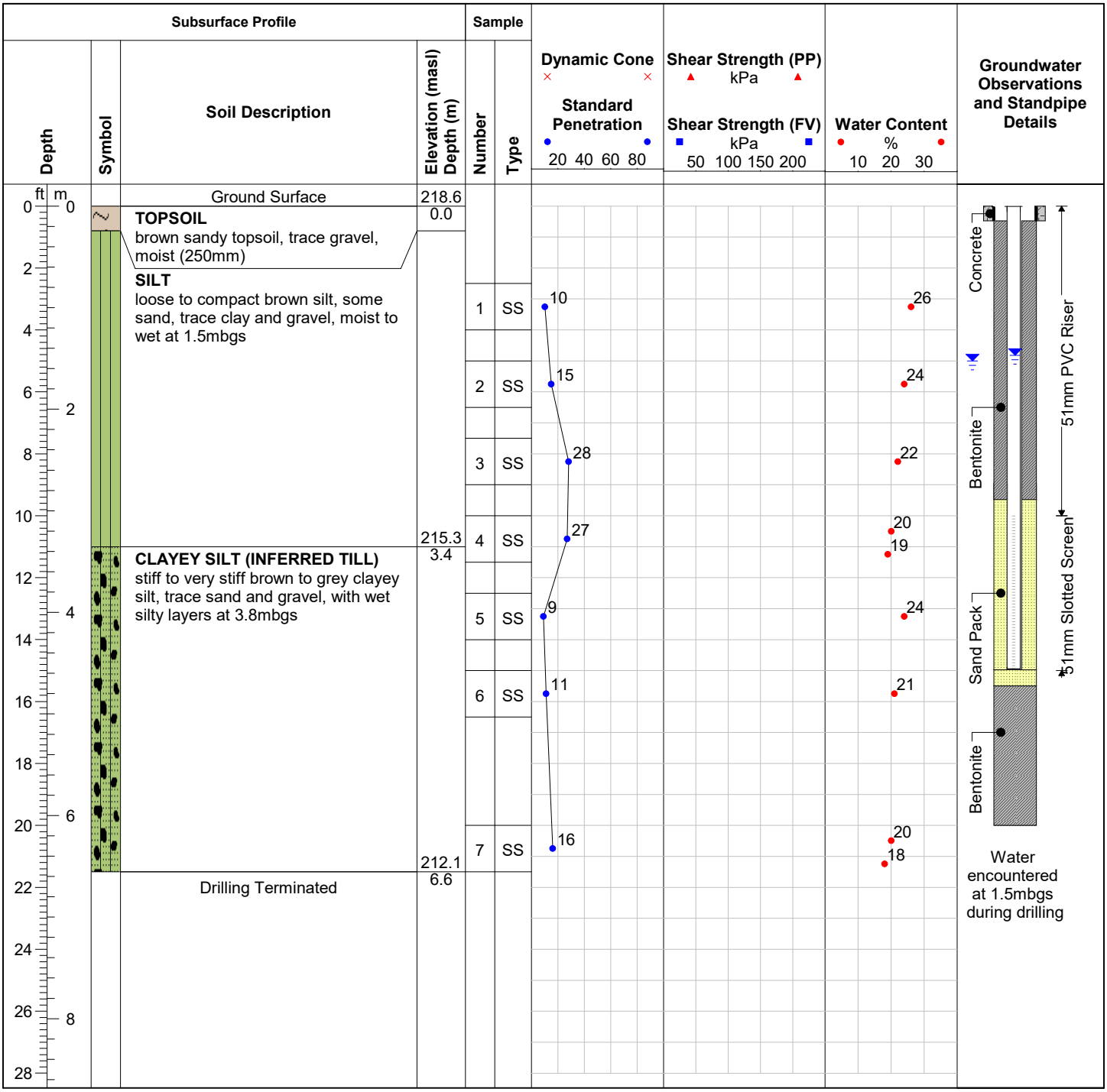
Date Completed: 6/18/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

Water measured on June 25, 2025 at 1.47mbgs (Elevation 217.137masl)

Well dry on October 14, 2025

ID No.: BH107-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

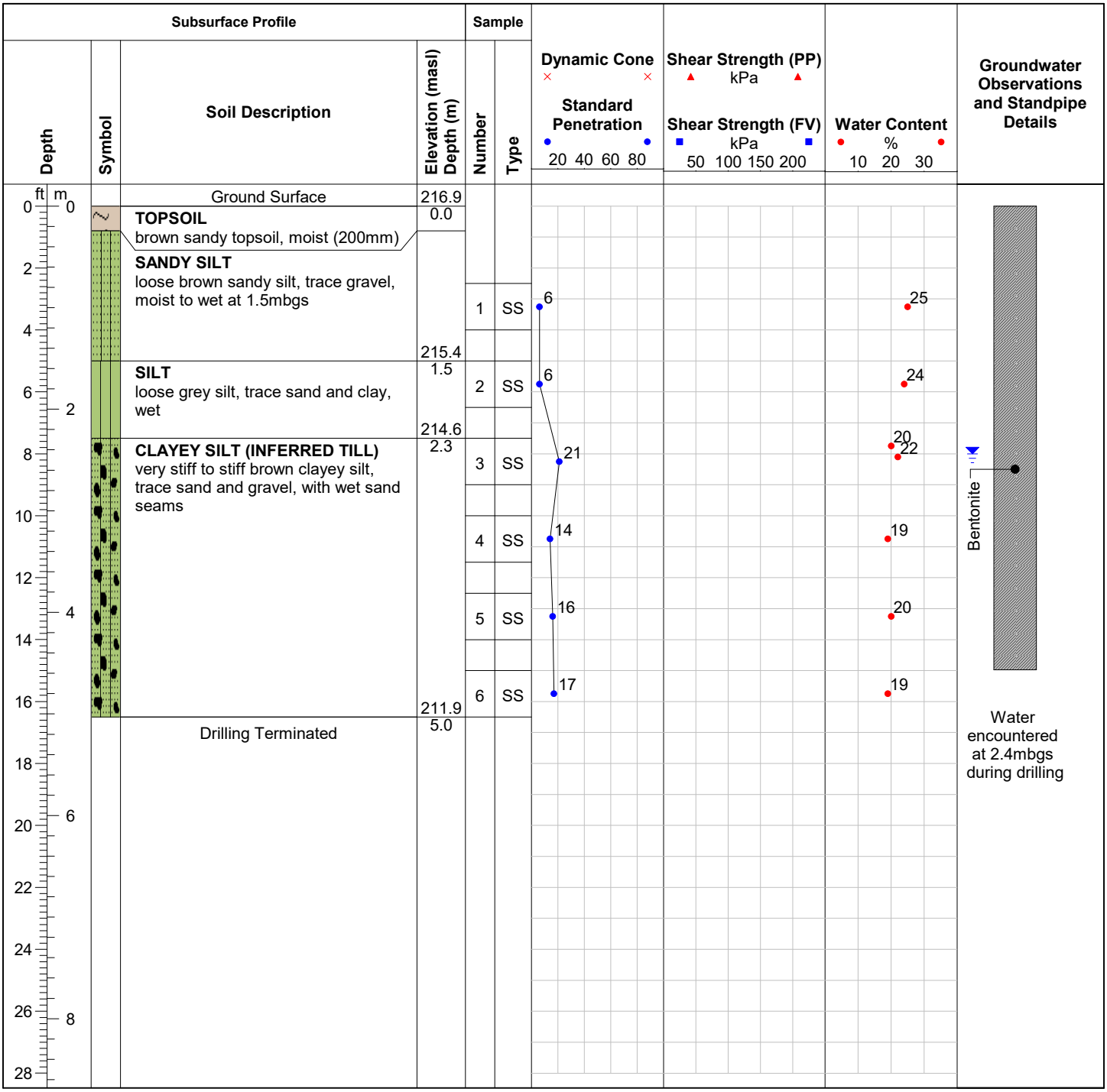
Date Completed: 6/19/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

ID No.: BH108-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

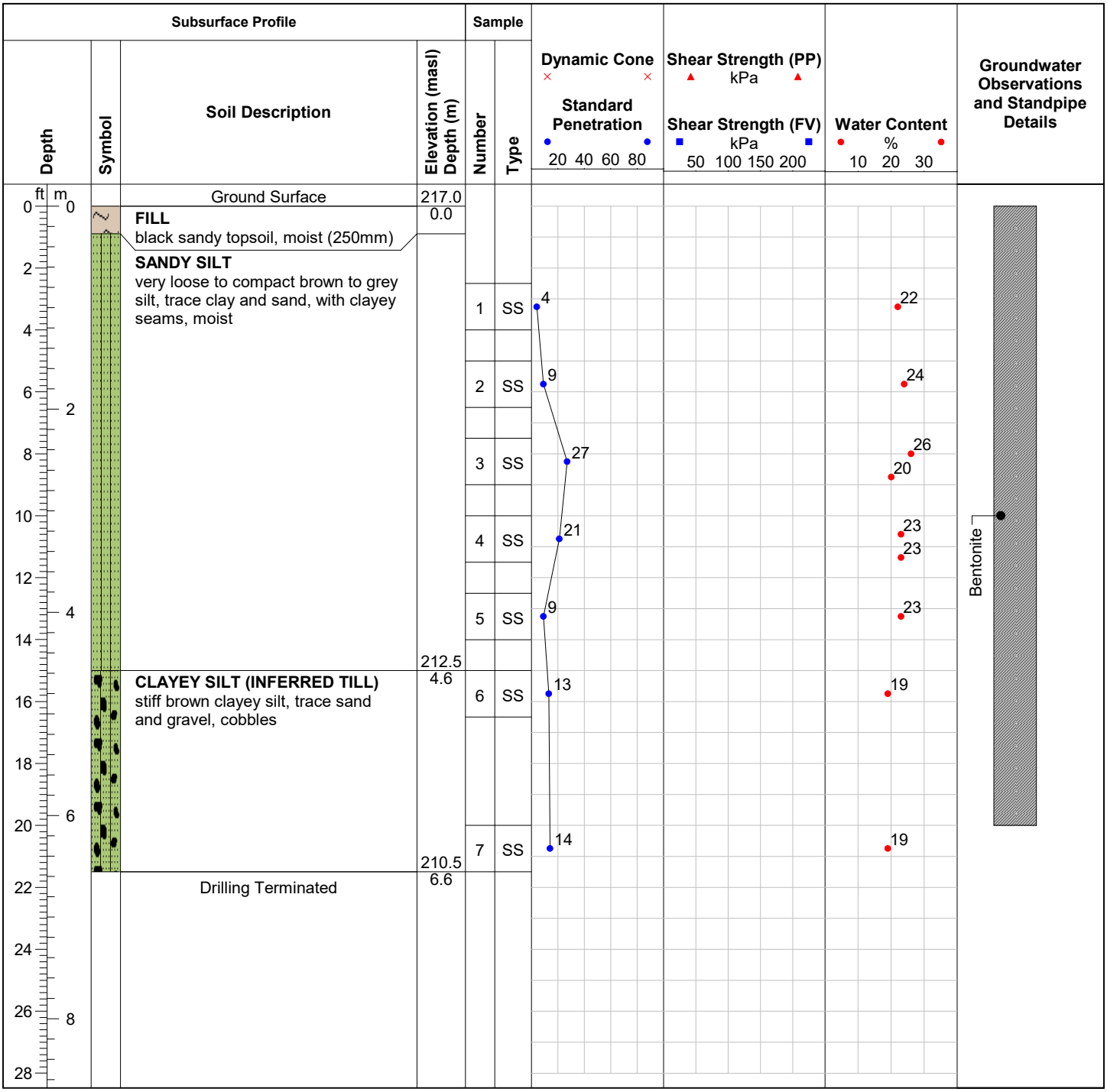
Date Completed: 6/20/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

ID No.: BH109-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/19/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft)	Depth (m)	Soil Description	Elevation (masl) / Depth (m)	Sample Number	Sample Type	Standard Penetration (Dynamic Cone)	Shear Strength (PP) kPa / Shear Strength (FV) kPa	Water Content %	Groundwater Observations and Standpipe Details
0	0	Ground Surface	215.4						
		TOPSOIL black sandy topsoil, moist (130mm)	0.0						
2		**SILT** loose brown silt, trace sand, moist	214.6						
		SANDY SILT compact brown sandy silt, moist to wet at 1.8mbgs	0.8	1	SS	18		21	
4									
6	2			2	SS	16		23	
								21	
8		**CLAYEY SILT (INFERRED TILL)** stiff to very stiff grey clayey silt, trace sand and gravel	213.1 2.3	3	SS	13		17	Bentonite
10				4	SS	16		18	
12	4			5	SS	14		18	
14									
16			210.4	6	SS	20		20	
		Drilling Terminated	5.0						
18									
20	6								
22									
24									
26	8								
28									

Dynamic Cone / Standard Penetration: 20 40 60 80

Shear Strength (PP) kPa / Shear Strength (FV) kPa: 50 100 150 200

Water Content %: 10 20 30

Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

MTE

ID No.: BH110-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

Date Completed: 6/19/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:

Depth (ft)	Depth (m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Sample Number	Sample Type
0	0		Ground Surface	216.1		
0	0		**TOPSOIL** black sandy topsoil, moist (360mm)	0.0 / 215.7		
2	0.4		**SANDY SILT** loose brown sandy silt, trace clay and gravel, moist		1	SS
4					2	SS
6	2			213.9		
8			**CLAYEY SILT (INFERRED TILL)** stiff to very stiff brown to grey clayey silt, trace sand and gravel, with wet silt seams	2.1	3	SS
10					4	SS
12	4				5	SS
14					6	SS
16						
18						
20	6				7	SS
22			Drilling Terminated	209.5 / 6.6		
24						
26	8					
28						

Dynamic Cone — Standard Penetration: 20 40 60 80

Shear Strength (PP) kPa / Shear Strength (FV) kPa: 50 100 150 200

Water Content %: 10 20 30

Sample Number	Standard Penetration	Water Content (%)
1	4	28
2	5	27, 26
3	14	23
4	12	18
5	12	21
6	18	20
7	18	20

Groundwater Observations and Standpipe Details: Bentonite

Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

MTE

ID No.: BH111-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

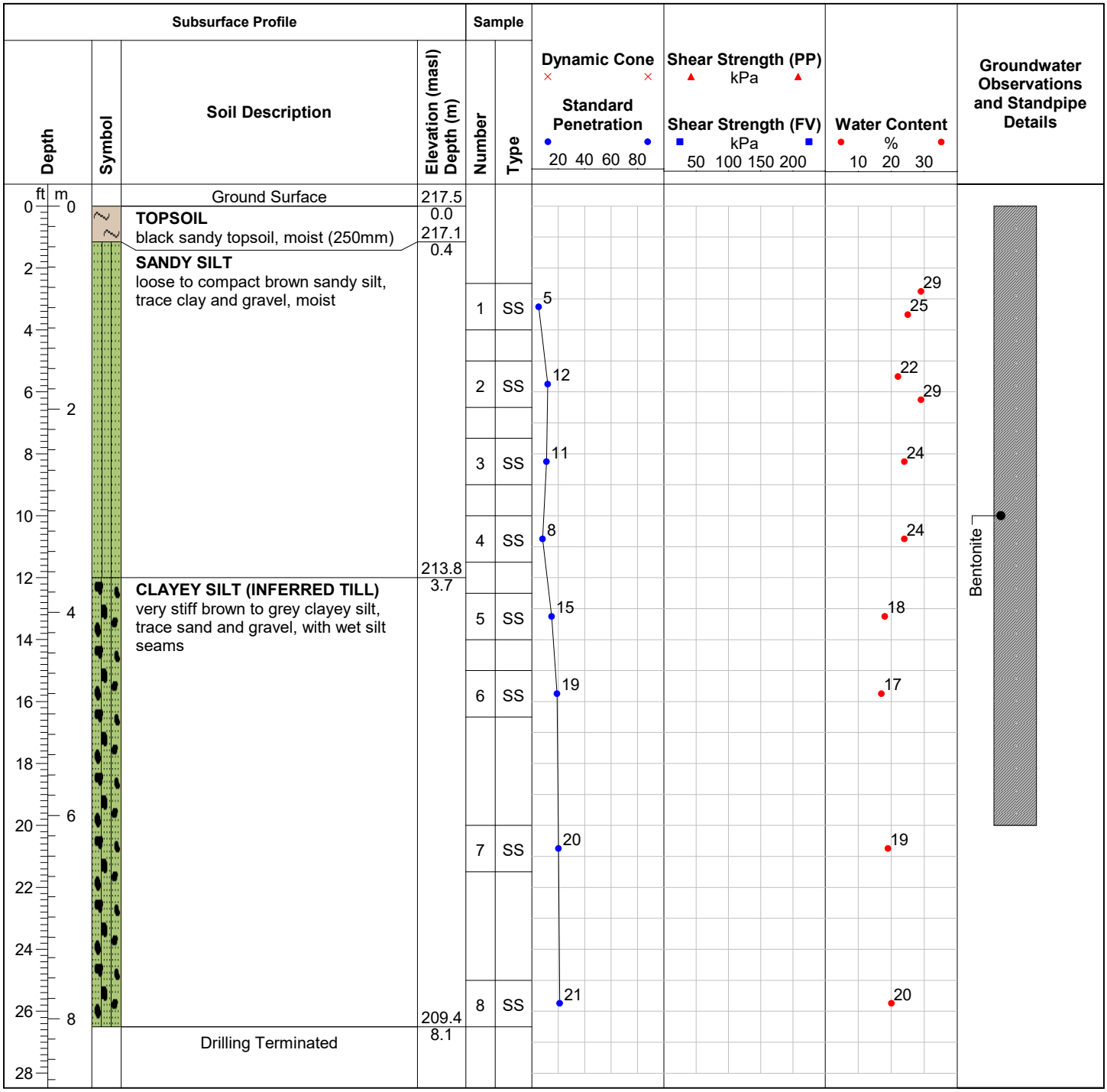
Date Completed: 6/19/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

ID No.: BH112-25

Project Name: Teetzel Farm Geotech Investigation & Scoped HydroG

MTE File No.: 62861_001

Client: Cyril J. Demeyere Limited CJDL

Site Location: Union Road Shedden; Southwold

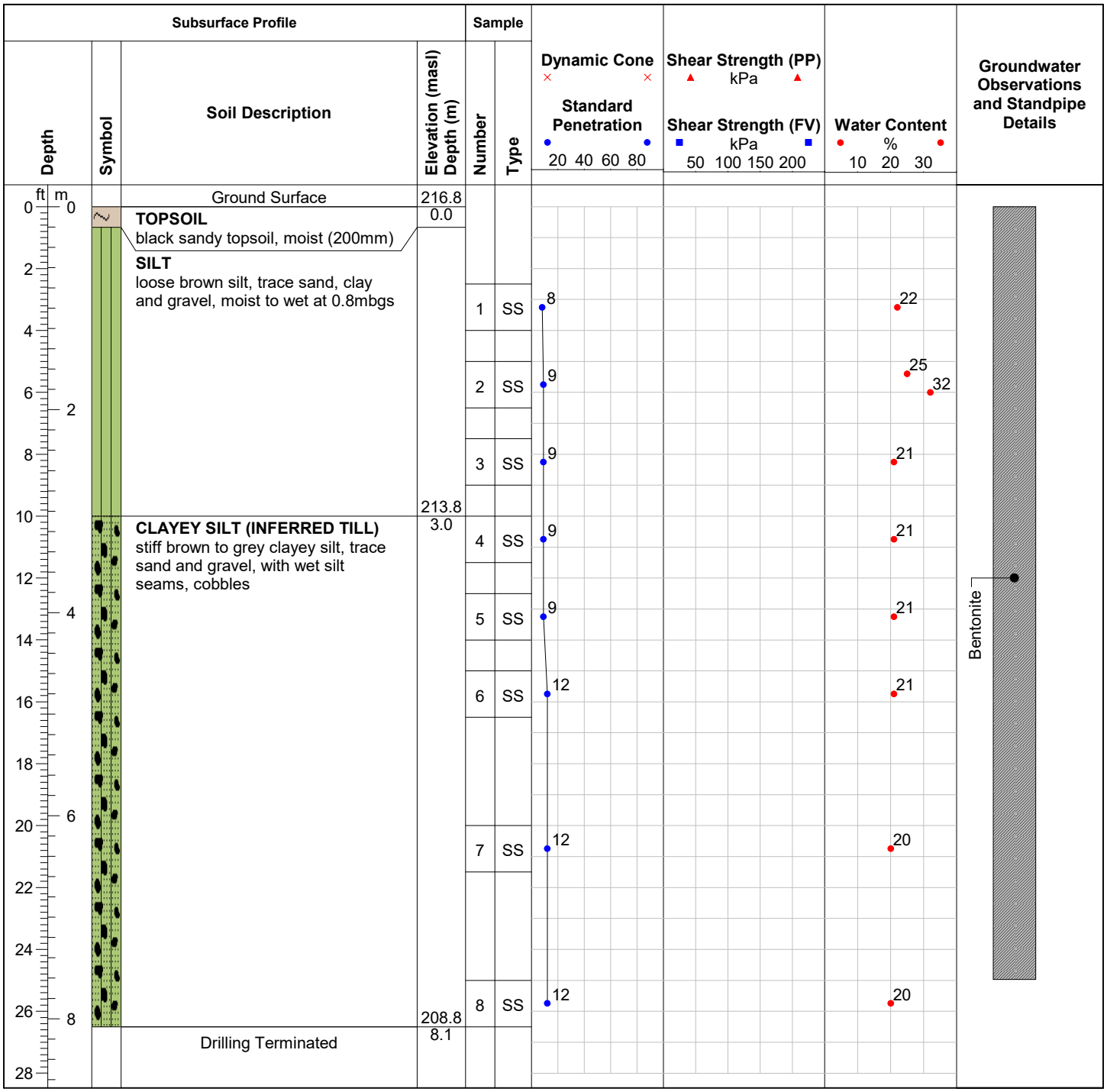
Date Completed: 6/20/2025

Drilling Contractor: London Soil Test Ltd

Drill Rig: D50 Turbo

Drill Method: 4" ID Stem Hollow Auger

Protective Cover:



Field Technician: S. Landon

Drafted by: L. Kosc

Reviewed by: L. Kosc

Sheet: 1 of 1

Appendix C

Laboratory Test Results

Tables 101 and 102

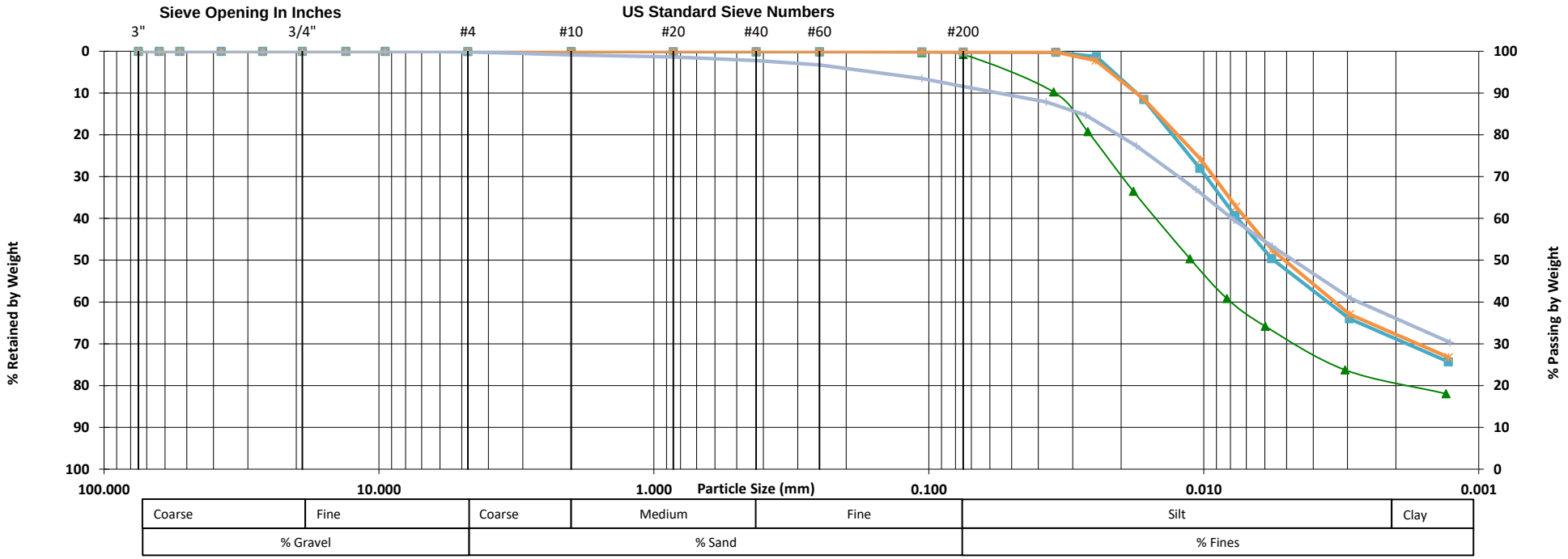
Particle Size Distribution Analysis Test Results

Project Name: Teetzel Farm Geotechnical Investigation
Client: Cyril J. Demeyere Limited
Project Location: Union Road, Shedden, ON

Date Sampled: June 18-20, 2025
Date Tested: July 9-11, 2025

MTE File No.: 62861_001
Table No: 101

Unified Soil Classification



Symbol	Borehole ID	Sample #	Sample Depth	Description
▲	MW101-25	SS-4	3.0-3.5 mbgs	Clayey SILT, trace Sand
■	MW103-25	SS-4	3.0-3.5 mbgs	Clayey SILT
✳	MW106-25	SS-5	3.8-4.3 mbgs	Clayey SILT
+	BH107-25	SS-3	2.3-2.7 mbgs	Clayey SILT, trace Sand

CERTIFIED BY CCIL
Canadian Council of Independent Laboratories
For specific tests as listed on www.ccil.com

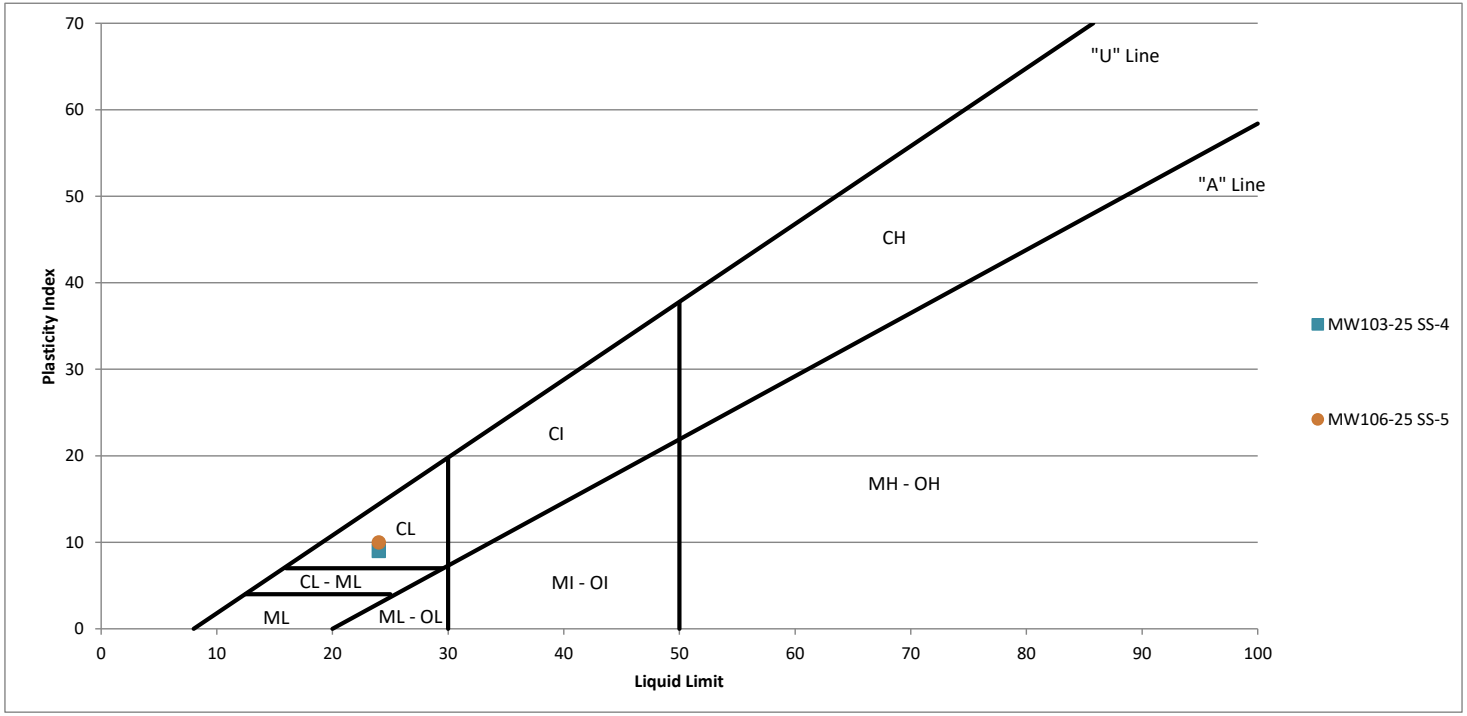
NOTES:

Atterberg Limit Test Results

Project Name: Teetzel Farm Geotechnical Investigation
Client: Cyril J. Demeyere Limited
Project Location: Union Road, Shedden, ON

Date Sampled: June 18-20, 2025
Date Tested: July 14-15, 2025

MTE File No.: 62861_001
Table No.: 102



Borehole	Sample #	Sample Depth	Moisture Content (%)	Liquid Limit (W_L)	Plastic Limit (W_P)	Plasticity Index (I_P)
MW103-25	SS-4	3.0-3.5 mbgs	25	24	15	9
MW106-25	SS-5	3.8-4.3 mbgs	24	24	14	10

CERTIFIED BY CCIL Canadian Council of Independent Laboratories
For specific tests as listed on www.ccil.com

NOTES: