Scoped Hydrogeological Investigation

6585 Highway 6, Fergus, ON

Project 10453

1. INTRODUCTION

Hydrogeology Consulting Services Inc. (HCS) was retained by GRIT Engineering Inc. to conduct a scoped hydrogeological investigation for a proposed mixed-use development located at 6585 Highway 6 in Fergus, Ontario. The location of the subject property is shown on Drawing 1 in Appendix A.

The proposed development will include the construction of a residential and mixed-use community, accommodating a mix of dwelling unit types and densities, including single detached dwellings, various forms of townhouses, and apartments. The development will also feature a new public park, continuation of the public trail network, extension of the public road network, and a mixed-use/commercial block contemplated in the southeast corner of the subject lands. It is anticipated that the development of the subject lands will accommodate approximately 701 dwelling units. The subject lands are also planned to accommodate a new school on a 4.96-hectare block at the northeast part of the subject lands. A stormwater management pond is proposed within the northwest corner of the subject lands.

It is understood that the proposed development will be serviced with municipal water and sanitary sewers.

1.1 Scope of Work

Field investigation for this scoped hydrogeological assessment included a site visit to assess the property and the proposed site plan layout. Twelve boreholes were drilled on the property under the observation of GRIT Engineering Inc. (GRIT) and all twelve were completed as monitoring wells to investigate the presence of shallow groundwater. Soil samples were obtained from twelve boreholes for particle size distribution (grain size) analysis. As part of the scoped hydrogeological assessment the twelve monitoring wells were assessed via slug testing to estimate saturated soil hydraulic conductivity. Groundwater samples were collected from four monitoring wells to assess shallow groundwater chemistry. Existing data for the subject property and surrounding area were compiled from multiple sources to gain an understanding of the subsurface stratigraphy and shallow groundwater flow regime. Groundwater chemistry results were assessed with comparison to Provincial Water Quality Objectives (PWQO) for reference purposes.

1.1.1 Borehole Drilling and Monitoring Well Installation

On April 17-21, 2026 GRIT observed the drilling of twelve boreholes (BH1 – BH12) to depths of 8.1 to 8.2 metres below ground surface (mBGS), using a track-mounted Diedrich D50 drill rig equipped with hollow stem augers, supplied and operated by London Soil Test Ltd.

Standard Penetration Test (SPT) was the soil sampling method used, and selected soil samples were submitted to GRIT or particle size distribution (grain size) analysis.

Twelve boreholes were completed as 51-mm diameter monitoring wells with 1.52-3.05 m slotted Schedule 40 PVC well screens and PVC riser pipe. Well sand was installed around the well screens, and the borehole annular space was sealed with bentonite. The wells were each constructed with a 10 cm square steel protective casing, and lockable vented protective caps were installed. Monitoring well construction followed Ontario Regulation 903 (as amended). Borehole logs are included in Appendix C for reference.

The borehole locations are shown on the appended Drawing 2.

The wells were developed (purged) by HCS Inc. using Waterra inertial valves and tubing to remove fine-grained material from the well screen sand pack and mitigate smearing on the borehole walls during drilling.

Stabilized groundwater elevations were measured using an electronic water level tape on May 4th, 2026. Water level measurements are summarized on Table 1 in Appendix B.

2. STUDY AREA PHYSIOGRAPHY AND GEOLOGY

2.1 Site Description

The subject property is located southeast of the intersection of Nichol Road 15 and Highway 6 in Fergus, Ontario. The subject lands comprise two legal parcels with a combined area of approximately 29.2 ha (72.2 ac), forming a long rectangular parcel that spans from Highway 6 to the east to Beatty Line to the west. The subject lands have approximately 303 m of lot frontage along Highway 6 and approximately 242 m of fragmented frontage along Beatty Line. Land use is predominantly agricultural, with a single-detached residential dwelling and accessory structures, including a barn, situated in the central portion of the property.

The Site is bound by Highway 6 to the north, an existing residential subdivision development to the east, a wetland and Beatty Line North to the south/southwest, and agricultural lands to the west. Beyond the subject property to the north, east, and west are agricultural properties, as well as some rural residential and commercial/industrial properties. The Town of Fergus is located further south/southeast of the subject property.

The ground surface topography of the subject property generally slopes gently to the south/southwest, varying from approximately 429.53 mASL around the northeastern corner of the property, to approximately 424.24 mASL along the southwestern border of the property near the wetland area.

2.2 Physiography

The subject property is located within the Guelph Drumlin Field physiographic unit (Chapman and Putnam, 2007) consisting of sediments which were deposited during the Wisconsinan glaciation. Locally, the subject property is located within the Drumlinized Till Plains physiographic unit, representing tills which were deposited and then reworked by retreating and advancing glaciers (Chapman and Putnam, 2007). The overburden deposits are generally comprised of sand/sand and gravel, and glacial till soils.

The surrounding areas generally exhibit gently rolling, undulating topography typically associated with drumlinized deposits. Glaciofluvial deposits typically tend to have higher infiltration rates due to the coarse-grained nature of the sediments; however, locally the glacial deposits/landforms can vary significantly over short lateral distances resulting in heterogeneous subsurface stratigraphy.

2.3 Geology

The Quaternary Geology Mapping of Southern Ontario (OGS, 2000) indicates that surficial deposits underlying the subject property predominantly consists of stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain. The western portion of the subject property is underlain by organic deposits consisting of peat, muck, and marl within the wetland area. Glaciofluvial deposits are present along the north, west, and east perimeters of the property.

As shown on the borehole logs in Appendix C the subsurface stratigraphy encountered in the boreholes drilled on the property generally consists of topsoil overlying a thin silt layer, underlain by a thick deposit of sand of varying composition extending to at least the borehole termination depths of 8.1 to 8.2 mBGS.

Stratigraphic data from Ministry of the Environment, Conservation, and Parks (MECP) water well records (WWRs) for the nearby properties indicates the subsurface stratigraphy in the area typically consists of interlayered deposits of clay and granular overburden of varying thickness, which overlie limestone bedrock.

Paleozoic Geology mapping (Armstrong and Dodge, 2007) indicates underlying the overburden deposits is the Guelph Formation thick-bedded fossiliferous dolostone bedrock. MECP Well Records suggest overburden deposits in the area surrounding the site range from approximately 18 m to 30 m thick.

Karst mapping of Southern Ontario (Brunton and Dodge, 2008) indicates that the property is located within an area of potential karst.

2.4 Hydrogeology

As shown on the appended Table 1, groundwater was measured at depths ranging from 1.93 to 5.61 mBGS on May 4th, 2026, corresponding to elevations of 421.64 to 424.61 mASL. Groundwater in monitoring wells was typically encountered within the near-surface sandy overburden and exhibits unconfined conditions.

Groundwater encountered within the near-surface sandy overburden deposits represents a local shallow aquifer that is utilized by a limited number of surrounding properties as a source of private water supply. However, based on a review of nearby Water Well Records (WWRs), a high-yielding confined aquifer is also present within the deep limestone bedrock, which represents the primary source of water supply for the majority of surrounding domestic wells.

Locally, shallow overburden groundwater (where it may exist) would be expected to flow generally south/southwestwards towards wetland areas and/or a tributary of Irvine River located adjacent to the southwestern property line; or, southwards towards agricultural drainage swales. GRCA mapping indicates the property lies within an Irvine Creek subcatchment. The Irvine Creek subwatershed is a component of the larger more regional Grand River watershed. Regional bedrock groundwater flow beyond the subject property is expected to be influenced by the Grand River and/or by other regional features.

It is understood that the proposed development will be municipally serviced for water and sewage.

Recharge mapping of the area (GRCA, 2024) indicates that the land surrounding the subject property is generally characterized by moderate groundwater recharge, with an estimated annual recharge of approximately 169 mm/yr.

Groundwater contour mapping on the appended Drawing 3 shows the shallow overburden groundwater beneath the subject property is flowing generally southwestwards.

Based on the near-surface sandy (with some silt) soils encountered in all monitoring wells drilled on the site it is anticipated site recharge rates are relatively moderate. Based on the subsurface stratigraphy encountered in the on-site boreholes it is expected that moderate volumes of precipitation infiltrating into the near-surface granular soils gradually percolates vertically downwards to recharge the local shallow aquifer. It is important to note that due to the heterogeneous nature of the overburden in the vicinity of the subject property, which is characteristic of the drumlinized till region, the local shallow aquifer may not be areally extensive on a regional scale. Rather, it may represent a localized and potentially laterally discontinuous feature. Over time, groundwater within this shallow aquifer may percolate vertically downward or flow laterally toward areas with more vertically extensive granular deposits, contributing some recharge volume to the deeper overburden groundwater regime and ultimately to bedrock groundwater recharge. All precipitation falling on the subject property is assumed to either infiltrate into the ground, evapotranspire, or run off in accordance with the ground surface topography.

2.5 Estimated Seasonally High Groundwater Levels

It is understood that groundwater level measurements collected in early May reflect a snapshot in time, and that groundwater levels fluctuate seasonally due to changes in the frequency, duration, and amount of precipitation. During spring thaw conditions, it is expected that groundwater levels would rise to their highest seasonal levels, and based on HCS' extensive experience with long term groundwater monitoring programs throughout Southern Ontario, it is anticipated groundwater levels within the granular soils underlying the property could rise between 0.25 and 0.5 m between measured early May levels and spring seasonally high levels.

It is important to consider fluctuations of water level within the near-surface granular sandy deposits underlying the subject property may result in moderate changes in the flux of water through those moderate to moderately high permeability materials.

A groundwater monitoring program is currently underway, consisting of continuous water level measurement in twelve on-site wells, as well as manual groundwater elevation measurements and datalogger downloads at quarterly intervals until May 2027. A groundwater monitoring summary will be completed upon conclusion of the monitoring program.

2.6 Surface Water and Sensitive Features

The Ontario Source Protection Information Atlas (OSPIA) mapping, shown in the appended Drawing 4, indicates there are wetland areas along the southwestern perimeter of the subject property. Nichol Drain is situated just beyond the southwestern property boundary, flowing in a generally southeasterly direction before turning westward to its confluence with Irvine Creek. Stormwater management ponds and small natural ponds are also located within 750 m of the subject property.

According to Grand River Conservation Authority (GRCA) and Ontario Ministry of Natural Resources and Forestry (MNRF) mapping, the delineated Provincially Significant Wetland (PSW) area along the southwestern perimeter of the property borders Nichol Drain and is also present within the forested areas to the north, west, and southwest of the subject property.

2.7 Soil Hydraulic Conductivity

Hydraulic conductivity estimates for the site soils were determined using single response hydraulic (slug) tests of the soil deposits screened by the monitoring wells. Estimates of hydraulic conductivity were also made using soil sample grain size analyses and the Kaubisch, Breyer, Kozeny-Carman, and Hazen formulae where appropriate.

2.7.1 Slug Test Results

Prior to conducting slug testing of the monitoring wells, each well was developed (purged) to remove fine-grained material from the sand pack around the well screen and the screened interval.

The slug test methodology followed the procedures developed by Hvorslev (1951), as described in Freeze and Cherry (1979). The tests were conducted as falling head tests by pouring a known volume of water into the well to cause a temporary rise in the water table; or, as rising head tests by purging a known volume of water from the well to cause a temporary drop in the water table. The displacement and gradual re-equilibration of the water level in the well was recorded using an electronic pressure transducer (datalogger). Hvorslev's method is expressed by the following equation:

$$K = \frac{r^2 \ln (L/R)}{2LT_{0.37}}$$

where:

- K = hydraulic conductivity of the tested material (m/sec)
- r = inner radius of the well riser pipe (m)
- R = outer radius of the well riser pipe (m)
- L = length of screen and sand pack (m)
- $T_{0.37}$ = time lag (sec), where $(H-h)/(H-H_0) = 0.37$
- h = water level at each time of measurement (m)
- H_0 = initial water level (m, start of test)
- H = stabilized water level prior to slug testing (m)

The time lag, $T_{0.37}$, represents the time required for the water level to recover to the stabilized level if the initial flow rate from the surrounding aquifer into the well is maintained. This time lag is determined graphically as the time where (H-h) divided by $(H-H_0)$ is equal to 0.37.

Graphical analyses of the slug tests are included in Appendix E, and the hydraulic conductivity estimates are listed in the appended Table 2.

The range of 6.8×10^{-6} m/sec to 1.4×10^{-4} m/sec for the deposits screened by the monitoring wells indicates a moderate to moderately high hydraulic conductivity for the generally silty sand to sandy overburden.

2.7.2 Grain Size Analysis Results

Soil samples collected from BH1 through BH12 (twelve samples in total) during drilling were submitted to the GRIT Engineering Inc. laboratory facility in Stratford, Ontario for analysis of particle size distribution (grain size). As shown on the grain size analysis graphs included in Appendix F, the analyzed soils ranged from sand and silt to sand. The grain size analysis results were used to estimate soil hydraulic conductivity (K) values by applying the Kaubisch, Breyer, Hazen, and Kozeny-Carman formulae where appropriate based on the limitations of each formula. Where grain size analyses did not fit the criteria of any formula, K values were estimated.

As shown in the appended Table 2, the calculated/estimated hydraulic conductivity values of the sandy overburden ranged from 8.8×10^{-6} m/sec – 1.7×10^{-4} m/sec, indicating an overall moderate to moderately high hydraulic conductivity for the sandy overburden.

The estimated hydraulic conductivity value of the sand and silt overburden was approximately 5.47×10^{-8} m/sec, indicating a low hydraulic conductivity for the higher silt content overburden.

The grain size analyses generally correlate reasonably well with the slug test results and published ranges for major soil types (Freeze and Cherry, 1979).

It is noted that the grainsize analysis calculated for the sand and silt overburden is a few orders of magnitude lower than the slug test calculated value, which may be a result of heterogeneities in compaction, the higher percentage of fine particles in the sample, or other factors.

The geometric mean hydraulic conductivity of the sandy overburden, excluding the sand and silt result, is 3.27×10^{-5} m/sec, indicating a moderately high hydraulic conductivity within the sandy overburden deposits.

2.8 Groundwater Chemistry

On May 4th, 2026 water chemistry samples were obtained from four monitoring wells (MW2, MW5, MW8 and MW10). The samples were collected in the appropriate laboratory-supplied containers, stored in a cooler, and delivered to ALS Environmental Laboratories in Waterloo, Ontario for analysis of general chemistry parameters. The laboratory Certificate of Analysis is included in Appendix G for reference, and the appended Table 3 summarizes parameters of interest.

It is important to consider that while the sample results are compared to the PWQO for reference purposes, the shallow groundwater collected and sampled does not represent surface water. It is noted that columns 1 and 2 in the Certificate of Analysis (COA) represent interim criteria only and are not currently applicable to sample results. Columns 3 and 4 represent the most stringent values and are used for metals where the criterion differs based on hardness.

Additionally, it is important to consider the monitoring well water chemistry samples were obtained using inertial valve pumps (Waterra tubing and foot valves). The method of water collection inherently results in the inclusion of sediments into the water sample, thereby increasing the potential of parameter exceedances such as colour, turbidity, total suspended solids, total dissolved solids, and total metals where metals are adsorbed onto soil particles.

Further, it is noted while the PWQO requires analysis of Total Metals, additional samples were submitted for analysis of Dissolved Metals for comparative purposes.

2.8.1 Provincial Water Quality Objectives (Reference Purposes Only)

As shown on the appended Table 3, the samples from MW2, MW5, MW8 and MW10 exhibited elevated concentrations of multiple Total Metals.

Laboratory supplied sample bottles for Total Metals analysis have an acid preservative in them. This acid preservative leaches metals out from sediments where metals are adsorbed on to sediment particles. The metals adsorbed on to sediment particles may simply be naturally occurring compounds from glacial erosion of crystalline sedimentary bedrock deposits.

It is noted that the measured concentrations of Dissolved Metals are significantly lower than corresponding Total Metals concentrations, with no PWQO criteria exceedances and Interim PWQO exceedances only for a small number of metals in one or more samples. While unfiltered samples were submitted for analysis, it is anticipated that basic mechanical filtration would significantly reduce concentrations of suspended sediments, thereby reducing total metals concentrations.

The measured nitrate concentrations ranged from 2.83 – 6.97 mg/L in MW2, MW5, MW8 and MW10.

The variation in measured nitrate concentrations between the four samples may be attributable to regional farming practices which have historically included agricultural fertilizer application. It is noted seasonal agricultural application of nutrients can contribute nitrogen and phosphorus to the shallow groundwater regime carried by infiltrating precipitation and these values may fluctuate seasonally. It is important to note that the near-surface granular overburden would not provide sufficient inhibition to the vertical migration of groundwater and any associated contaminants. It is therefore important that appropriate mitigation measures be established to prevent surface spills and minimize the potential for contaminant infiltration

3. WATER USERS

Well Records from the Ontario Ministry of the Environment, Conservation, and Parks (MECP) Water Well Record (WWR) Database were reviewed to determine the number of private water supply wells present. As shown on the well records in Appendix D, fifty-three wells are located within an approximate radius of 500 m from the subject property according to the MECP WWR Database.

Of the fifty-three wells identified in the WWR database, thirteen wells are identified as abandoned wells or partial data entry, and fifteen wells are identified as monitoring wells or test holes; these have been excluded from further consideration.

Of the remaining twenty-five wells (all are identified as domestic), five wells are completed in overburden at depths of 5.5 and 19.2 mBGS; and twenty wells are completed in bedrock at depths ranging from 27.4 to 138.7 mBGS. These wells are plotted on the appended Drawing 5.

It is noted that some wells plotted on the appended Drawing 5 are located in areas where the actual existence of a well is unlikely (they may be associated with nearby properties), and that some properties shown on the aerial imagery do not have a well associated with them; however, the MECP WWR coordinate data has been used in the absence of more reliable information. Additionally, it is important to consider the Town of Fergus is municipally serviced for water supply; therefore, some wells listed in the database may have been previously decommissioned or are no longer in use for private water supply purposes.

3.1 Door-to-Door Well Survey

On April 4th, 2026 a door-to-door survey of properties within a 500 m radius of the subject property, where based on the MECP WWR database the possibility for private water supply wells existed, was completed to determine the locations and construction details of private water supply wells in the area. A copy of the survey was left at forty locations along with a self-addressed stamped envelope, with six well surveys returned at the time of preparation of this report. The six completed well surveys are included in Appendix D for reference.

The well surveys indicated that three wells were completed as shallow dug wells, one well was completed in bedrock at a depth of 41 mBGS, and two wells were completed in overburden at depths of 40 – 44.5 mBGS. The respondents of four well surveys reported no major issues with tap water quality (some homeowners reported minor calcium or iron buildup) or well yield, and noted the presence of a water softener and UV sterilizer. One well survey respondent noted low water supply yield during summers.

It is understood that the proposed development will be municipally serviced for water and sewage.

3.2 Municipal Wellhead Protection Areas, Sensitive Features and Vulnerability Mapping

Ontario Source Protection Information Atlas (OSPIA) mapping shown on the appended Drawing 4 indicates that the property is located within a Wellhead Protection Area (WHPA)-B with a vulnerability score of 8. WHPA-B represents a 2-year time of travel to municipal wells supplying water to the Township of Centre Wellington. Mapping from Wellington Source Water Protection indicates the subject property is also located within a WHPA for water quantity (WHPA-Q1 and WHPA-Q2). GRCA mapping also identifies the property as a medium intrinsic vulnerability area for groundwater.

OSPIA mapping indicates the property is not located within a Significant Groundwater Recharge Area (SGRA), not located within a Highly Vulnerable Aquifer (HVA), not located within a Groundwater Under Direct Influence (GUDI) of surface water area, not located within an Issue Contributing Area.

OSPIA mapping indicates that the southwestern portion of the property is located within an Intake Protection Zone (IPZ-3) associated with the wetland areas, and the entire property is located within a vulnerable groundwater area with a score of 6 (moderate vulnerability).

As development of the property will result in portions of the subject property being covered with parking lots, streets and residential/commercial/institutional buildings, a relatively low potential for infiltration of precipitation carrying surficial contaminants would be expected under post-development conditions where appropriate measures are taken for storage and usage of potential contaminants both during and after construction. In the event higher risk activities such as industrial chemical uses or bulk storage of fuels are planned, it will be important to ensure adequate containment facilities are employed to prevent any accidental spills from flowing onto pervious surfaces.

It is also important to consider the municipal supply well pumps water from the bedrock aquifer beneath overburden soils. While maintenance of pre-development soil infiltration rates will help to mitigate any potential impacts to the groundwater regime and nearby surface water features, the municipal supply wells servicing the Town of Fergus would not be expected to be directly impacted by changes to the shallow groundwater beneath the subject property.

It is understood Low Impact Development (LID) infiltration measures will be designed to mitigate the reduction in precipitation infiltration under post-development conditions.

4. SITE WATER BALANCE

A site water balance is an empirical calculation and accounting of water in the hydrologic cycle. Precipitation (P) falls as rain and snow. Precipitation can evapotranspire (ET) from the ground surface, impermeable surfaces (such and buildings and roads) and through vegetation; infiltrate (I) into the soil and percolate downwards towards the shallow groundwater table; or, run-off (R) across the ground surface or impermeable surfaces towards surface water features, stormwater collection systems, and topographic low points. When assessed over a long-term period, there is minimal or no net change to groundwater storage (ΔS).

The water balance equation (Thornthwaite and Mather, 1957) can be written as:

$$P = ET + I + R + \Delta S$$

Pre-development and post-development annual water balance calculations have been prepared based on the Thornthwaite and Mather (1957) methodology, along with methodologies by Fenn et al. (1975) and Kmet (1982) as described by Daniel and Koerner (1997). The water balance calculation spreadsheets (Tables A-D) are included in Appendix H for reference.

The Thornthwaite and Mather methodology assesses monthly averages of precipitation and temperature, and uses this information in conjunction with site soils data, and climatological and soils variables, to calculate a variety of parameters. This information is then assessed using methodology and variables from the MECP Stormwater Management Planning and Design Manual (2003) to calculate infiltration, evapotranspiration, and runoff rates and volumes from both pervious and impervious portions of the subject property.

Water balance calculations are included in Appendix H for reference. Data inputs and variables for the water balance calculations were extracted from a number of sources, as described in Table 1 below:

Table 1 – Water Balance Calculation Data Sources

SITE INFORMATION	Value	Unit	SOURCE
Monthly Temperature	Varying	Deg C	Environment Canada Climate Normals 1981-2010 (Fergus)
Mean Annual Temp	6.7	Deg C	Environment Canada Climate Normals 1981-2010 (Fergus)
Heat Index	(calculated)		Daniel and Koerner (1997)
Potential EVT	(calculated)	mm	Daniel and Koerner (1997)
Monthly Duration of Sunlight	(estimated)		Daniel and Koerner (1997)
Adjusted EVT	(calculated)		Daniel and Koerner (1997)
Monthly Precipitation	Varying	mm	Environment Canada Climate Normals 1981-2010 (Fergus)
Annual Precipitation	945.9	mm/yr	Environment Canada Climate Normals 1981-2010 (Fergus)
Runoff Coefficient	(calculated)		Daniel and Koerner (1997)
Runoff	(calculated)	mm	Daniel and Koerner (1997)
Infiltration	(calculated)	mm	Daniel and Koerner (1997)
Accumulated Water Loss	(calculated)	mm	Daniel and Koerner (1997)
Water Stored	(estimated)	mm	Daniel and Koerner (1997)
Change in Water Storage	(calculated)	mm	Daniel and Koerner (1997)
Actual EVT	(calculated)	mm	Daniel and Koerner (1997)
Percolation	(calculated)	mm	Daniel and Koerner (1997)
Latitude	44	Deg N	Google Earth (2026)
Elevation	427	mASL	GRIT Engineering Inc. (2026)
Site Area	29.3	ha	SMD Consultants Inc. (2026)
Impervious Area	See Tables 2-4		SMD Consultants Inc. (2026)
Pervious Area	See Tables 2-4		SMD Consultants Inc. (2026)
Infiltration Factor	See Tables 2-4		MECP SWM Management Planning and Design Manual (2003)
Topo	See Tables 2-4		MECP SWM Management Planning and Design Manual (2003)
Soils	See Tables 2-4		MECP SWM Management Planning and Design Manual (2003)
Cover	See Tables 2-4		MECP SWM Management Planning and Design Manual (2003)
SOIL INFORMATION			
Surficial Soil	Silty Sand/Sand		GRIT Engineering Inc. (2026)
Vegetation	Grass, shrubs,		Field observation

4.1 Post-Development Water Balance, no Mitigation

As shown in Tables C and D in Appendix H, under post-development conditions with no mitigation measures in place the proposed development could theoretically create a 52,709 m^3/yr infiltration volume deficit. The deficit results from the assumption that post-development rooftop and

impervious surface runoff would not have the opportunity for infiltration, causing a reduction in pervious surfaces and precipitation available for infiltration.

As discussed previously, a small number of shallow water supply wells utilizing the shallow overburden aquifer have been identified within 500 m of the subject property. As indicated in well survey responses, one well survey respondent noted issues with low well yield in the summer.

Maintenance of pre-development infiltration rates under post-development conditions will be important to help ensure the shallow overburden aquifer continues to be recharged by infiltrating precipitation. Efforts to achieve a surplus of infiltration would be considered a net benefit to the natural environment, with consideration of the presence of both shallow water supply wells and nearby Provincially Significant Wetland Areas.

5. CLOSURE

This scoped hydrogeological assessment compiled data for the subject property from existing sources and on-site field data to gain an understanding of the subsurface stratigraphy and shallow groundwater flow regime.

The subject property is generally underlain by topsoil overlying a thin silt layer, underlain by a thick deposit of sand of varying composition extending to at least the borehole termination depths of 8.1 to 8.2 mBGS.

Groundwater was measured at depths ranging from 1.93 to 5.61 mBGS on May 4th, 2026, corresponding to elevations of 421.64 to 424.61 mASL. Groundwater in monitoring wells was typically encountered within the near-surface sandy overburden and exhibits unconfined conditions. Locally, shallow overburden groundwater (where it may exist) would be expected to flow generally south/southwestwards towards delineated Provincially Significant Wetland areas and/or a tributary of Irvine River located adjacent to the southwestern property line; or, southwards towards agricultural drainage swales.

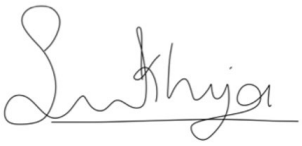
Water chemistry analysis of shallow groundwater beneath the subject property showed elevated concentrations of multiple Total Metals as well as slightly elevated concentrations of Nitrate. Elevated metals concentrations were most likely a result of the sampling methodology which incorporated sediments into the samples and subsequent leaching of metals by the preservative in the sampling bottles. Slightly elevated Nitrate levels may be attributable to regional farming practices which have historically included agricultural fertilizer application.

The calculated infiltration deficit of 52,709 m^3/yr will need to be mitigated through implementation of Low Impact Development (LID) measures to capture and infiltrate precipitation from impervious surfaces in order to maintain recharge to the shallow groundwater aquifer.

Through effective management and consideration of on-site groundwater conditions regarding depth of building foundations below ground surface; and through mitigation of the calculated infiltration deficit using LID measures to achieve pre-development site infiltration volumes and to maintain shallow groundwater contributions and surficial runoff contributions to neighbouring wetland areas, the proposed development of the property can be completed in an environmentally sustainable manner and can minimize the potential for impacts to off-site groundwater users and surface water features dependent on groundwater inputs.

We trust that this report satisfies your present requirements, and we thank you for this opportunity to be of service. If you have any questions, or require further hydrogeological consulting services, please feel free to contact us directly.

Respectfully submitted,



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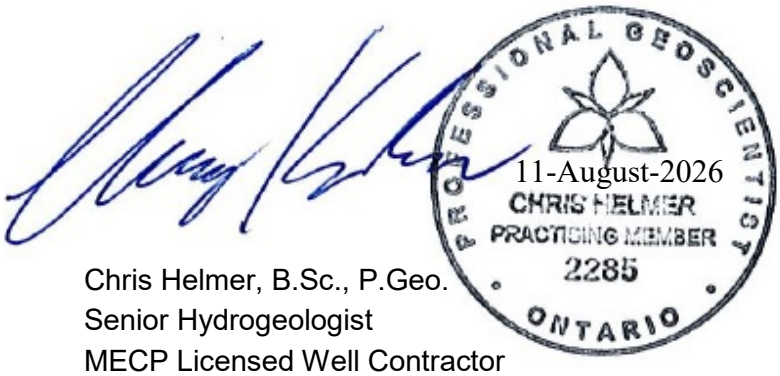

11-August-2026

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6. LIMITATIONS AND USE

This report has been prepared for the exclusive use of the Client indicated in Section 1. Chris F Helmer and Hydrogeology Consulting Services Inc. (HCS) hereby disclaim any liability or responsibility to any person or party, other than the Client, for any loss, damage, expense, fines, or penalties which may arise from the use of any information or recommendations contained in this report by anyone other than the Client.

The conclusions and recommendations provided in this report are not intended as specifications or instructions to contractors. Any use contractors may make of this report, or decisions made based on it, are the responsibility of the contractors. Contractors must accept responsibility for means and methods of construction they select, seek additional information if required, and draw their own conclusions as to how the subsurface conditions may affect them.

In preparing this report Chris F Helmer and HCS have relied in good faith on information provided by individuals and companies noted in this report, and assumes that the information provided is factual and accurate. No responsibility is accepted for any deficiencies, misstatements, or inaccuracies contained in this report as a result of errors, omissions, misinterpretations, or fraudulent acts in the resources referenced, or of persons interviewed or consulted during the preparation of this report.

The report and its complete contents are based on data and information collected during investigations conducted by Chris F Helmer and HCS, and pertains solely to the conditions of the site at the time of the investigation, supplemented by historical information and data as described in this report. It is important to note that the investigation involves sampling of the site at specific locations, and the conclusions in this report are based on the information gathered. Limitations of the data and information include the fact that conditions between and beyond the sampling locations may vary; that the assessment is dependent upon the accuracy of the analytical data generated through sample analysis; and that conditions or contaminants may exist for which no analyses have been conducted. Furthermore, no assurance is made regarding potential changes in site conditions and/or the regulatory regime (standards, guidelines, etc.), subsequent to the time of investigation.

The professional services provided for this project include only the hydrogeological aspects of the subsurface conditions at the site, unless otherwise stated specifically in the report. No other warranty or representation is either expressed or implied, as to the accuracy of the information or recommendations included or intended in this report.

7. REFERENCES

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APPENDIX A: DRAWINGS

Drawing 1 – Location Plan
Drawing 2 – Site Plan
Drawing 3 – Groundwater Contours
Drawing 4 – Ontario Source Protection Information Atlas Mapping
Drawing 5 – MECP Water Well Records

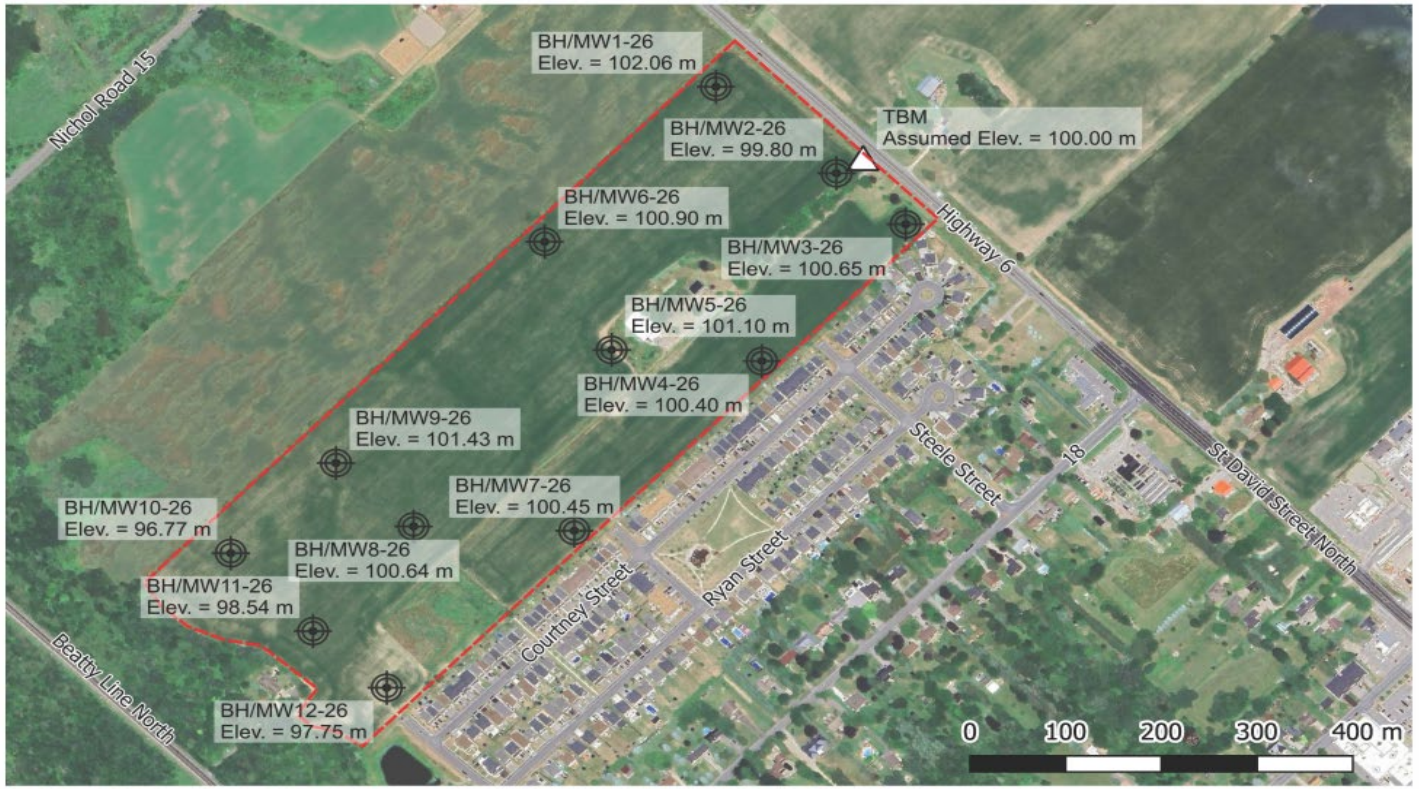
imagery from Google Earth © 2026

Drawing 1 - Location Plan
6585 Highway 6, Fergus, Ontario

LEGEND	
	Site Area

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26



GRIT ENGINEERING INC

133 REGENT STREET
STRATFORD, ON N5A 3W2
www.gritengineering.ca

Legend:

- STUDY AREA
- BOREHOLE
- TEMPORARY SITE BENCHMARK
  TBM (Assumed local datum = 100 m) - Top of nail in utility pole 3095 located approximately 6m northwest of 6585 driveway entrance

Reference: Aerial Imagery from Google Earth 2022

Project:
GE26-1576-1
6585 HIGHWAY 6 SUBDIVISION
6585 HIGHWAY 6, CENTRE WELLINGTON, ONTARIO

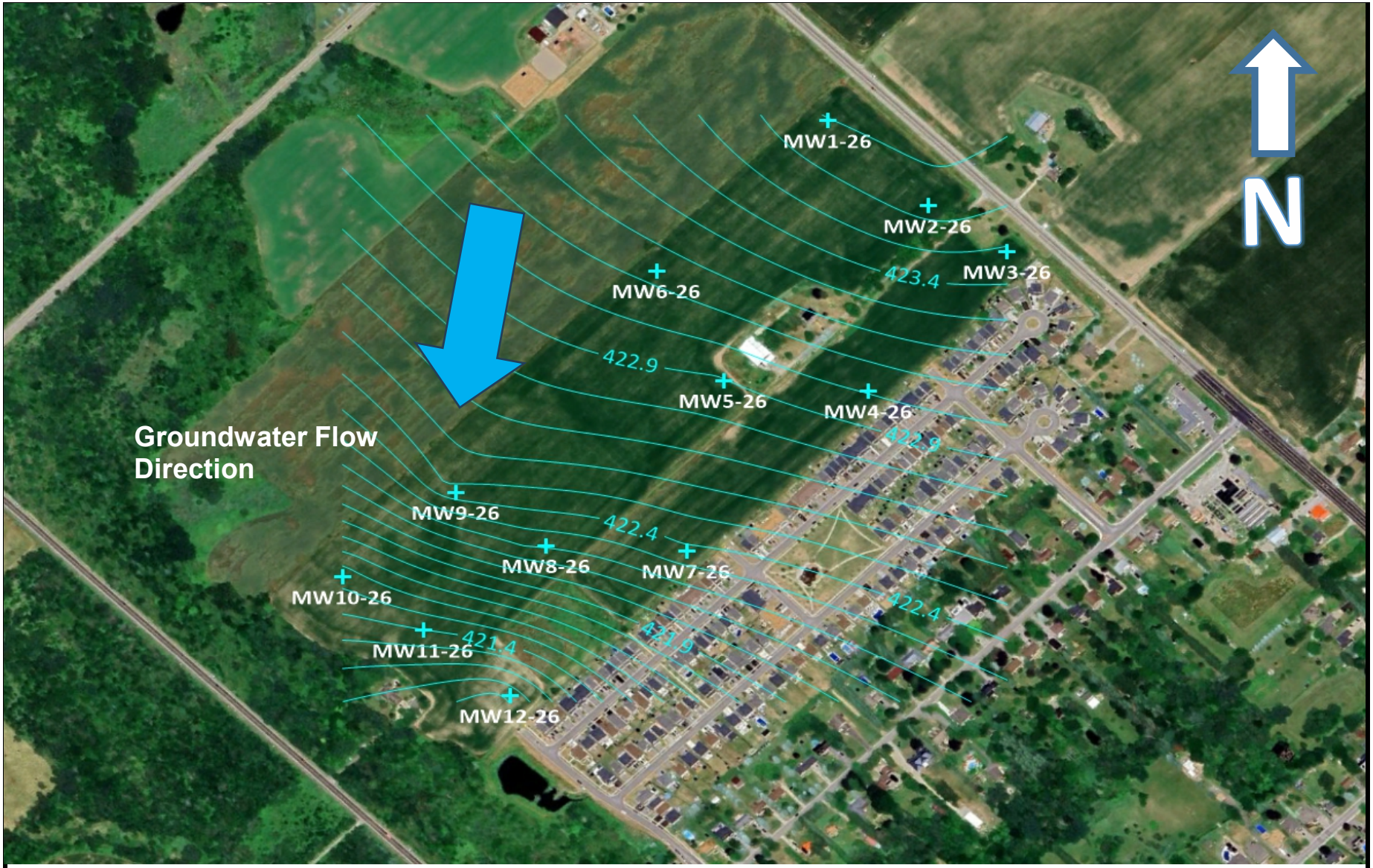
Figure Title:
SITE PLAN
GEOTECHNICAL INVESTIGATION

Figure No: A3

Drawing 2 - Site Plan
6585 Highway 6, Fergus, Ontario

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26



imagery from Google Earth © 2026

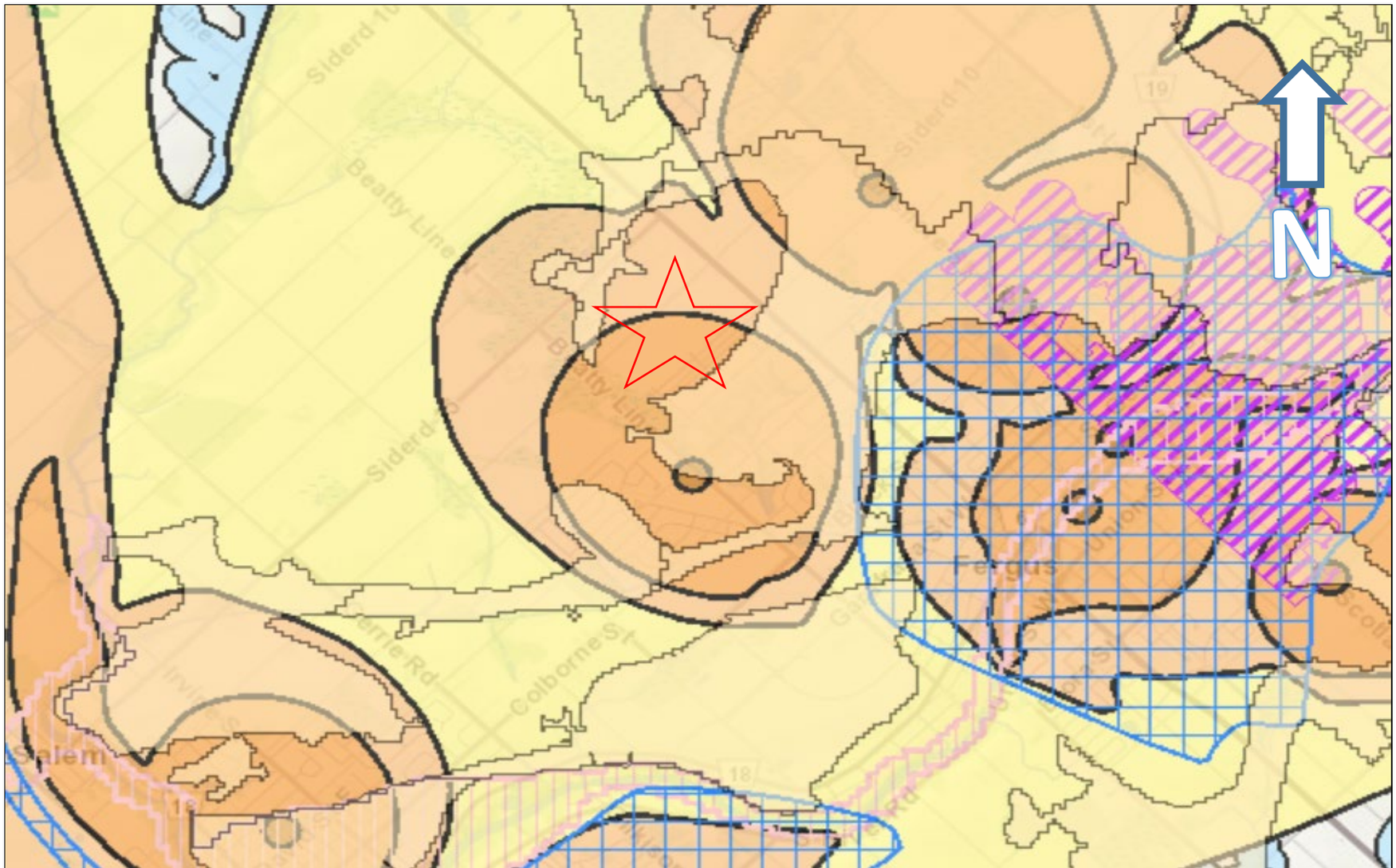
LEGEND

324 Groundwater Contour (mASL)

Drawing 3 - Groundwater Contour Mapping
6585 Highway 6, Fergus, Ontario

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26



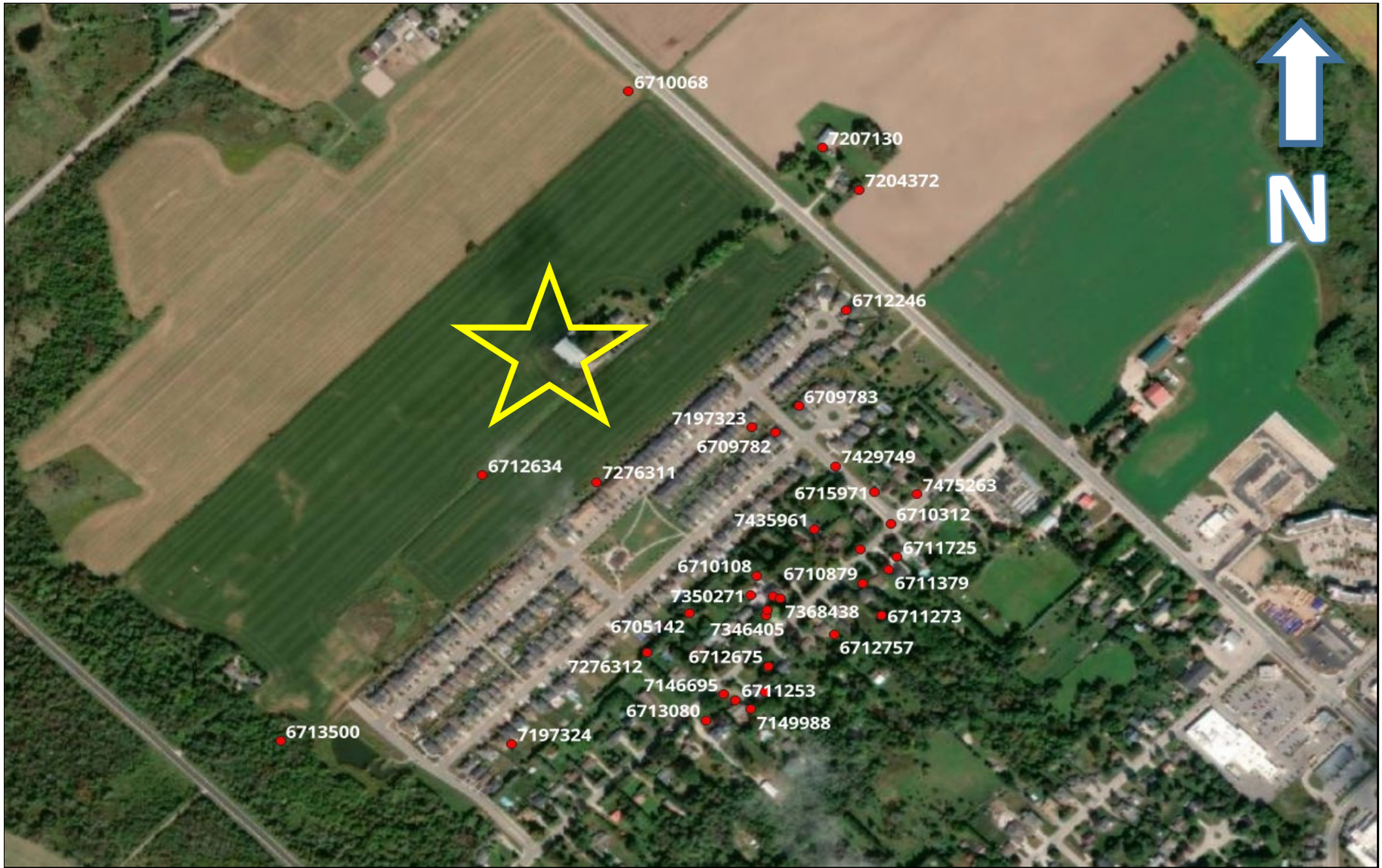
LEGEND

- Subject Property
- SGRA
- HVA
- IPZ3 and VSA-SW
- WPA A to D and VSA-GW
- WHPA-E
- ICA

Drawing 4 - OSPIA Mapping
6585 Highway 6, Fergus, Ontario

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26



LEGEND

Subject Property

Supply Well

imagery from ERIS base map © 2026

Drawing 5 - MECP WWRs

6585 Highway 6, Fergus, Ontario

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26

APPENDIX B: TABLES

Table 1 – Groundwater Level Measurements

Table 2 – Hydraulic Conductivity Estimates

Table 3 – Water Chemistry Analysis Results

Table 1 - Measured Groundwater Levels
6585 Highway 6, Fergus, Ontario

Name	Top of Pipe Elevation *	Stickup (m)	4-May-26		
			WL (mBTOP)	WL (mBGS)	WL *
MW1-26	429.53	0.91	5.83	4.92	423.70
MW2-26	427.27	0.92	3.60	2.68	423.67
MW3-26	428.12	0.72	4.63	3.91	423.49
MW4-26	427.87	0.70	4.84	4.14	423.03
MW5-26	428.57	0.98	5.66	4.68	422.91
MW6-26	428.37	0.83	5.23	4.40	423.14
MW7-26	427.92	0.66	5.54	4.88	422.38
MW8-26	428.11	0.89	5.90	5.01	422.21
MW9-26	428.90	0.78	6.39	5.61	422.51
MW10-26	424.24	0.74	2.67	1.93	421.57
MW11-26	426.01	0.76	4.71	3.95	421.30
MW12-26	425.22	0.70	4.28	3.58	420.94

mASL - metres Above Sea Level
mBGS - metres Below Ground Surface
* Top of pipe elevations surveyed by GRIT Engineering Inc. (2026)

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Table 2 - Hydraulic Conductivity Estimates
6585 Highway 6, Fergus, Ontario

Name	Soil Sample Depth or Screened Interval (mBGS)	Soil Type	Analytical Methods	Hydraulic Conductivity (m/sec)
MW1-26	6.1 - 7.6	Sand, trace silt, clay and gravel	Hvorslev	1.4×10^{-4}
MW1-26	6.10 - 5.55	Sand, trace silt, clay and gravel	Hazen	1.5×10^{-4}
MW2-26	4.9 - 6.4	Sand, trace silt and clay	Hvorslev	7.2×10^{-5}
MW2-26	4.57 - 5.03	Sand, trace silt and clay	Hazen	1.3×10^{-4}
MW3-26	4.6 - 6.1	Sand, trace silt and clay	Hvorslev	6.0×10^{-5}
MW3-26	4.57 - 5.03	Sand, trace silt and clay	Hazen	1.7×10^{-4}
MW4-26	6.1 - 7.6	Sand, some silt, trace clay	Hvorslev	5.6×10^{-5}
MW4-26	6.10 - 6.55	Sand, some silt, trace clay	Breyer	8.8×10^{-6}
MW5-26	5.2 - 6.7	Sand, some silt	Hvorslev	1.0×10^{-4}
MW5-26	6.10 - 6.55	Sand and silt, trace clay	Breyer	1.2×10^{-5}
MW6-26	6.2 - 7.7	Silty sand, trace clay and gravel	Hvorslev	5.2×10^{-5}
MW6-26	6.10 - 6.55	Sand, trace silt and clay	Breyer	8.1×10^{-5}
MW7-26	6.1 - 7.6	Sand, some silt, trace clay	Hvorslev	6.8×10^{-6}
MW7-26	6.10 - 6.55	Sand and silt, trace clay	Kaubisch	5.47×10^{-8}
MW8-26	4.5 - 7.6	Sand, some silt, trace clay	Hvorslev	8.5×10^{-6}
MW8-26	6.10 - 6.55	Sand, some silt, trace clay	Breyer	2.8×10^{-5}
MW9-26	6.1 - 7.6	Silty sand, trace clay	Hvorslev	1.3×10^{-5}
MW9-26	6.10 - 6.55	Silty sand, trace clay	Breyer	1.2×10^{-5}
MW10-26	4.6 - 6.1	Silty sand, trace clay	Hvorslev	9.4×10^{-6}
MW10-26	4.57 - 5.03	Silty sand, trace clay	Breyer	1.8×10^{-5}
MW11-26	5.7 - 7.2	Sand, some silt, trace clay	Hvorslev	2.0×10^{-5}
MW11-26	6.10 - 6.55	Sand, some silt, trace clay	Breyer	2.5×10^{-5}
MW12-26	6.2 - 7.7	Sand, some silt, trace clay	Hvorslev	3.6×10^{-5}
MW12-26	6.10 - 6.55	Sand, some silt, trace clay	Breyer	1.8×10^{-5}

mBGS - metres Below Ground Surface

m/sec - metres per second

Bold - Slug test

* - D_{10} value was not provided; therefore, the hydraulic conductivity value is considered approximate

** - $T_{0.37}$ was not achieved; therefore, the hydraulic conductivity value is considered approximate

value is considered an estimate

HCS HYDROGEOLOGY CONSULTING SERVICES INC

TABLE 3 - GROUNDWATER CHEMISTRY ANALYSIS RESULTS

6585 Highway 6, Fergus, Ontario

Parameter[(i)]	PWQO	May-4-2026			
		MW2-26	MW5-26	MW8-26	MW10-26
Conductivity (umhos/cm)	--	1020	556	493	500
Hardness (as $CaCO_3$)	--	342	682	6850	377
pH (pH units)	6.5-8.5	7.95	7.94	7.88	7.86
Total Dissolved Solids	--	640	408	793	385
Turbidity (NTU)	--	89.7	198	>4000	67.9
Alkalinity (as $CaCO_3$)	--	328	360	3910	312
Ammonia, total	--	0.0067	0.0144	0.0303	0.0122
Chloride	--	135.00	6.47	8.05	9.45
Fluoride	--	<0.100	0.069	0.042	0.045
Nitrate	--	6.97	3.85	2.83	5.09
Nitrite	--	<0.050	<0.010	<0.010	<0.010
Sulfate	--	38.9	22.6	1.26	3
Aluminum	--	1.87	2.19	70.8	1.37
Antimony	0.02	0.00018	<0.00010	<0.00100	0.00080
Arsenic	--	0.00222	0.00187	0.0302	0.00080
Beryllium	0.011	0.000091	0.000110	0.00370	0.000065
Boron	0.2	0.013	0.020	<0.100	<0.010
Cadmium	0.0001	0.0000821	0.0000833	**0.00198**	0.0000378
Chromium	--	0.00333	0.00322	0.0847	0.00273
Cobalt	--	0.00204	0.00177	0.0627	0.00119
Copper	0.001	**0.0108**	**0.00801**	**0.200**	**0.00410**
Iron	0.3	**3.71**	**3.94**	**1.34**	**2.23**
Lead	0.001	**0.00940**	**0.00672**	**0.156**	**0.00408**
Magnesium	--	18.7	43.1	373	23.7
Manganese	--	0.148	0.295	7.65	0.107
Molybdenum	0.04	0.00356	0.000732	<0.000500	0.000408
Nickel	0.025	0.00384	0.00327	**0.115**	0.00208
Phosphorus	--	0.135	0.527	8.85	0.087
Potassium	--	2.25	20.8	8.16	1.13
Selenium	0.1	0.000319	0.000263	<0.000500	0.000111
Silver	0.0001	0.000018	0.000013	**0.000308**	0.000029
Sodium	--	129	17.2	6.10	2.97
Sulfur	--	13.9	7.93	<5.00	1.11
Thallium	--	0.000043	0.000040	0.000829	0.000021
Titanium	--	0.0566	0.0912	0.95	0.0463
Tungsten	0.03	<0.00010	<0.00010	<0.00100	<0.00010
Uranium	--	0.00130	0.000713	0.00438	0.000272
Vanadium	--	0.00383	0.0046	0.112	0.00307
Zinc	0.02	**0.0462**	**0.0393**	**0.654**	0.0196
Zirconium	0.004	0.00073	0.00098	0.00287	0.00055

PWQO - Provincial Water Quality Objectives

All concentrations in mg/L unless noted

Exceedances are bolded

HCS HYDROGEOLOGY CONSULTING SERVICES INC

APPENDIX C: BOREHOLE LOGS

BOREHOLE BH/MW1-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 102.06 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	102	TOPSOIL: black (organic) silt, very moist (127 mm)	SS1	80	6
0.5	101.5	SILTY SAND: loose, brown, silty sand, very moist			
1	101	SAND: loose, brown sand, trace silt, very moist	SS2	85	6
1.5	100.5	very loose to loose, moist	SS3	90	4
2	100				
2.5	99.5	compact	SS4	85	17
3	99		SS5	65	22
3.5	98.5				
4	98		SS6	75	16
4.5	97.5	very moist	SS7	70	24
5	97				
5.5	96.5	compact to dense, saturated	SS8	80	30
6	96				
6.5	95.5	loose, trace clay, trace gravel	SS9	90	6
7	95				
7.5	94.5				
8	94	compact	SS10	100	18
		Termination depth at: 8.08 mbgs (93.98 m)			
8.5	93.5				
9	93				
9.5	92.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25

Well Installation Details

Additional Observations

BOREHOLE BH/MW2-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

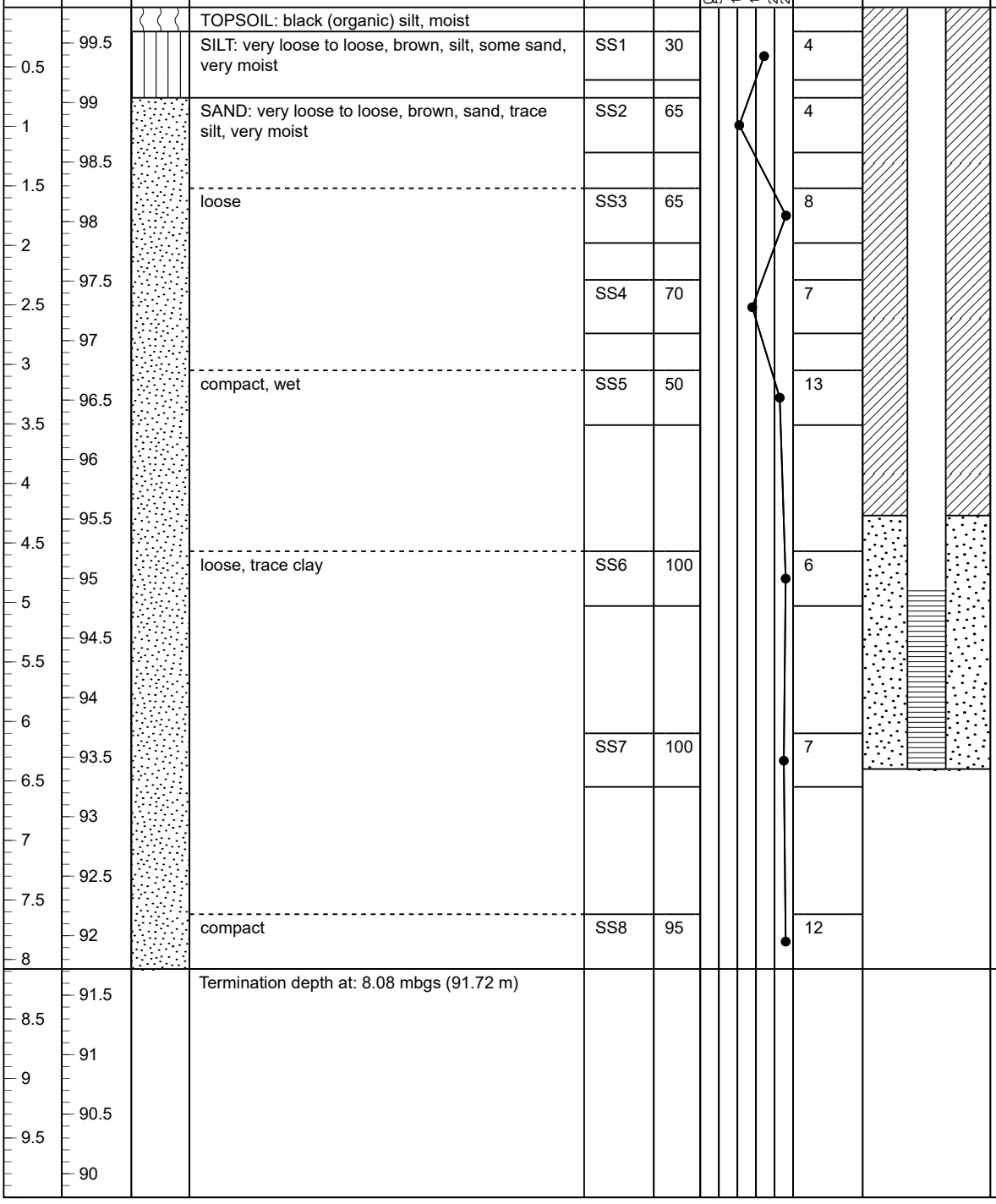
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 99.80 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	99.80	TOPSOIL: black (organic) silt, moist			
0.5	99.5	SILT: very loose to loose, brown, silt, some sand, very moist	SS1	30	4
1	99	SAND: very loose to loose, brown, sand, trace silt, very moist	SS2	65	4
1.5	98.5	loose	SS3	65	8
2	98				
2.5	97.5		SS4	70	7
3	97	compact, wet	SS5	50	13
3.5	96.5				
4	96				
4.5	95.5	loose, trace clay	SS6	100	6
5	95				
5.5	94.5				
6	94		SS7	100	7
6.5	93.5				
7	93				
7.5	92.5	compact	SS8	95	12
8	92				
8.5	91.5	Termination depth at: 8.08 mbgs (91.72 m)			
9	91				
9.5	90.5				
	90				



GRIT ENGINEERING INC

BOREHOLE BH/MW3-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 100.65 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	100.5	TOPSOIL: black (organic) silt, moist			
0.5	100	SILTY SAND: very loose to loose, brown, silty sand, moist	SS1	25	4
1	99.5	SAND: loose, brown, sand, trace silt, moist	SS2	40	5
1.5	99		SS3	85	6
2	98.5				
2.5	98	compact, very moist	SS4	60	12
3	97.5		SS5	75	24
3.5	97				
4	96.5				
4.5	96	trace clay, wet to saturated	SS6	80	18
5	95.5				
5.5	95				
6	94.5		SS7	100	11
6.5	94				
7	93.5				
7.5	93		SS8	100	13
8	92.5	Termination depth at: 8.08 mbgs (92.57 m)			
8.5	92				
9	91.5				
9.5	91				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30

Well Installation Details

Additional Observations

BOREHOLE BH/MW4-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 100.40 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	100.4	TOPSOIL: black (organic) silt, moist			
0.5	100	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	20	4
1	99.5	SAND: very loose, brown, sand, trace silt, very moist	SS2	70	3
1.5	99	very loose to loose	SS3	65	4
2	98.5				
2.5	98	loose to compact, moist	SS4	90	10
3	97.5	compact, trace silt, wet to saturated	SS5	80	26
3.5	97				
4	96.5				
4.5	96		SS6	80	13
5	95.5				
5.5	95				
6	94.5	dense, some silt, trace clay	SS7	90	31
6.5	94				
7	93.5				
7.5	93	compact	SS8	100	14
8	92.5				
8.5	92	Termination depth at: 8.08 mbgs (92.32 m)			
9	91.5				
9.5	91				
	90.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Well Installation Details

Additional Observations

BOREHOLE BH/MW5-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 101.10 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	101	TOPSOIL: black (organic) silt, moist			
0.5	100.5	SANDY SILT: very loose to loose, brown, sandy silt, moist	SS1	45	4
1	100	SAND: very loose, brown, sand, some silt, very moist	SS2	40	2
1.5	99.5	trace silt	SS3	85	2
2	99				
2.5	98.5	compact, moist	SS4	80	28
3	98	dense	SS5	80	34
3.5	97.5				
4	97	compact to dense	SS6	75	30
4.5	96.5	compact, wet to saturated	SS7	65	20
5	96				
5.5	95.5				
6	95	SAND and SILT: compact, brown, sand and silt, trace clay, wet to saturated	SS8	95	18
6.5	94.5				
7	94				
7.5	93.5	loose	SS9	100	5
8	93	Termination depth at: 8.08 mbgs (93.02 m)			
8.5	92.5				
9	92				
9.5	91.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Well Installation Details

Additional Observations

BOREHOLE BH/MW6-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

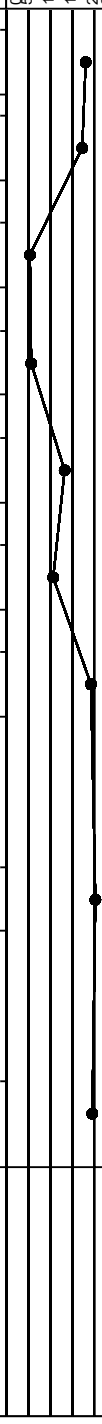
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.23 mbgs

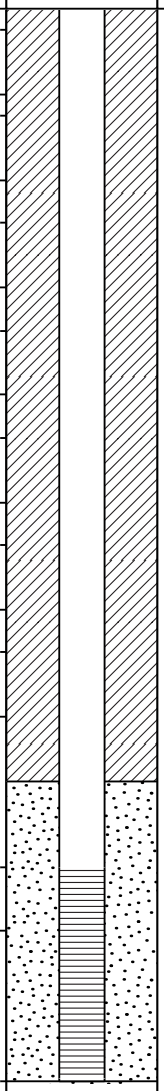
ELEVATION 100.90 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	100.5	TOPSOIL: black (organic) silt, moist			
0.5		SILT: very loose, brown, silt, some sand, very moist (organics present)	SS1	30	3
1	100	SILTY SAND: very loose to loose, brown, silty sand, trace gravel, very moist	SS2	85	4
1.5	99.5	SAND: loose, brown, sand, moist	SS3	60	9
2	99				
2.5	98.5	compact, trace silt	SS4	75	14
3	98				
3.5	97.5	very moist	SS5	80	19
4	97		SS6	60	13
4.5	96.5				
5	96	loose, wet to saturated	SS7	75	7
5.5	95.5				
6	95	compact, trace clay	SS8	100	14
6.5	94.5				
7	94				
7.5	93.5	very loose to loose	SS9	100	4
8	93				
8.5	92.5	Termination depth at: 8.23 mbgs (92.67 m)			
9	92				
9.5	91.5				
	91				





Well Installation Details

Additional Observations

BOREHOLE BH/MW7-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 100.45 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	100.45	TOPSOIL: black (organic) silt, moist			
0.5	100	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	30	4
1	99.5	SAND: very loose to loose, brown, sand, trace silt, very moist	SS2	60	4
1.5	99	loose to compact, very moist	SS3	60	10
2	98.5				
2.5	98	compact	SS4	75	17
3	97.5				
3.5	97		SS5	75	27
4	96.5		SS6	70	23
4.5	96	wet to saturated	SS7	50	15
5	95.5				
5.5	95				
6	94.5	some silt, trace clay	SS8	60	19
6.5	94				
7	93.5				
7.5	93		SS9	95	20
8	92.5				
8.5	92	Termination depth at: 8.08 mbgs (92.37 m)			
9	91.5				
9.5	91				
	90.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30

Well Installation Details

Additional Observations

BOREHOLE BH/MW8-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 100.64
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	100.5	TOPSOIL: black (organic) silt, moist			
0.5	100	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	35	4
1	99.5	loose	SS2	75	9
1.5	99	SAND: very loose, brown, sand, trace silt, very moist	SS3	50	2
2	98.5	some silt	SS4	35	2
2.5	98				
3	97.5	compact, moist	SS5	85	12
3.5	97				
4	96.5	very moist	SS6	95	26
4.5	96		SS7	80	16
5	95.5				
5.5	95				
6	94.5	some silt, trace clay, wet to saturated	SS8	100	17
6.5	94				
7	93.5				
7.5	93	trace silt	SS9	90	15
8	92.5	Termination depth at: 8.08 mbgs (92.56 m)			
8.5	92				
9	91.5				
9.5	91				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details

Additional Observations

BOREHOLE BH/MW9-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 101.43 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	101.43	TOPSOIL: black (organic) silt, moist			
0.5	101	SANDY SILT: very loose, brown, sandy silt, very moist	SS1	35	3
1	100.5	SAND: loose, brown, sand, trace silt, moist	SS2	45	5
1.5	100	loose to compact, very moist	SS3	55	10
2	99.5				
2.5	99	compact, moist	SS4	90	15
3	98.5				
3.5	98	SILTY SAND: compact, brown silty sand, very moist	SS5	70	15
4	97.5	SAND: compact, brown, sand, moist	SS6	80	27
4.5	97				
5	96.5		SS7	90	21
5.5	96				
6	95.5				
6.5	95	SILTY SAND: compact, brown, silty sand, trace clay, wet to saturated	SS8	90	21
7	94.5				
7.5	94				
8	93.5		SS9	90	14
8.5	93	Termination depth at: 8.08 mbgs (93.35 m)			
9	92.5				
9.5	92				
	91.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30

Well Installation Details

Additional Observations

BOREHOLE BH/MW10-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 96.77 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	96.77	TOPSOIL: black (organic) silt, moist			
0.5	96.5	SANDY SILT: very loose, brown, sandy silt, wet	SS1	35	2
1	96	very loose to loose	SS2	65	4
1.5	95.5	SAND: very loose to loose, brown, sand, trace silt, wet			
2	95	SANDY SILT: compact, brown, sandy silt, trace clay, wet	SS3	45	13
2.5	94.5	SILT and SAND: compact, brown, silt and sand, wet to saturated (dilatant)	SS4	60	14
3	94	SAND: loose to compact, brown, sand, wet	SS5	80	10
3.5	93.5	compact, trace silt, wet	SS6	100	15
4	93	SILTY SAND: compact, brown, silty sand, trace clay, saturated	SS7	100	12
4.5	92.5				
5	92				
5.5	91.5				
6	91	loose, grey, some clay, wet	SS8	55	8
6.5	90.5				
7	90				
7.5	89.5				
8	89	SILT TILL: loose to compact, grey, silt, some clay, trace gravel, trace sand, wet	SS9	85	10
8.5	88.5	Termination depth at: 8.08 mbgs (88.69 m)			
9	88				
9.5	87.5				
	87				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35

Well Installation Details

Additional Observations

BOREHOLE BH/MW11-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 98.54 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-21

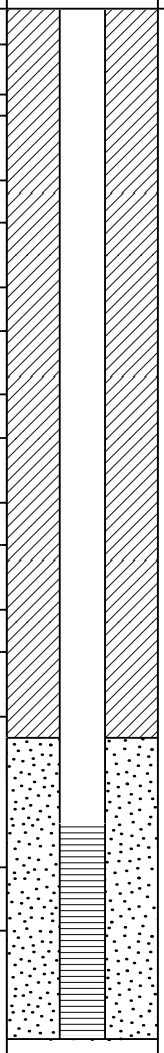
COMPLETION 2026-04-21

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	98.5	TOPSOIL: black (organic) silt, moist			
0.5	98	SANDY SILT: very loose, brown, sandy silt, very moist	SS1	20	2
1	97.5	very loose to loose	SS2	80	4
1.5	97	SAND: very loose, brown, sand, some silt, very moist	SS3	80	1
2	96.5				
2.5	96	compact, moist	SS4	75	18
3	95.5		SS5	80	15
3.5	95				
4	94.5	wet to saturated	SS6	80	16
4.5	94		SS7	80	20
5	93.5				
5.5	93				
6	92.5	trace clay	SS8	100	14
6.5	92				
7	91.5				
7.5	91	loose	SS9	100	9
8	90.5				
8.5	90	Termination depth at: 8.08 mbgs (90.46 m)			
9	89.5				
9.5	89				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30

Well Installation Details



Additional Observations

BOREHOLE BH/MW12-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 97.75 m
TEMPORARY BENCHMARK (TBM) Top of nail in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
TBM ELEVATION 100.00 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=meters below ground surface; APL/ DTPL/ WTPL= About/ Drier than/ Wetter than the Plastic Limit

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
0	97.5	TOPSOIL: black (organic) silt, moist			
0.5		SILT: compact, brown silt, trace gravel, trace sand, moist	SS1	20	25
1	97	SAND: compact, brown, sand, trace silt, moist	SS2	85	15
1.5	96.5	very moist	SS3	70	17
2	96				
2.5	95.5		SS4	80	25
3	95	wet to saturated	SS5	60	14
3.5	94.5				
4	94				
4.5	93.5	loose	SS6	75	8
5	93				
5.5	92.5				
6	92	some silt, trace clay	SS7	90	6
6.5	91.5				
7	91				
7.5	90.5	compact	SS8	100	21
8	90				
	89.5	Termination depth at: 8.08 mbgs (89.67 m)			
8.5	89				
9	88.5				
9.5	88				

Moisture Content (%): 0, 5, 10, 15, 20, 25

Well Installation Details

Additional Observations

APPENDIX D: MECP WATER WELL RECORDS AND WELL SURVEYS

Water Well Records

Friday, May 8, 2026

11:01:08 AM

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
FERGUS TOWN	17 548046 4839966 W	2009/05 6607	2.00	FR 0007		MO	0010 10	7131004 (M05151) A082752	BRWN SAND GRVL FILL 0007 BRWN SAND LOOS 0015 GREY SILT SAND CLAY 0030
FERGUS TOWN	17 548308 4840759 W	2015/01 7282	2	UT 0015		TH	0014 5	7236870 (Z202518) A167654	BRWN SAND 0019
FERGUS TOWN	17 548505 4840555 W	2015/01 7282	2	UT 0010		TH	0009 5	7236871 (Z202522) A167655	BRWN SAND 0014
FERGUS TOWN	17 548402 4840271 W	2016/06 4868	36			DO		7268299 (Z216893) A	
NICHOL TOWNSHIP	17 548545 4840754 W	2013/06 7366	3.79			MO	0003 2	7203471 (Z171712) A148257	BRWN SILT SAND LYRD 0004
NICHOL TOWNSHIP	17 548529 4840531 W	2006/08 7238	1.97	0006			0006 5	6715971 (Z50630) A045253	BRWN LOAM 0001 BRWN SAND SILT 0011
NICHOL TOWNSHIP	17 548265 4840321 W	2013/06 7366	3.79			MO	0003 2	7203470 (Z171709) A148253	BRWN SILT SAND LYRD 0004
NICHOL TOWNSHIP	17 548460 4840552 W	2013/06 7366	1.5			MO	0007 5	7203472 (Z171711) A148244	BRWN SAND SILT 0118
NICHOL TOWNSHIP	17 548204 4840541 W	2013/06 7366	1.5			MO	0012 5	7203475 (Z171714) A148258	BRWN SAND SILT 0017
NICHOL TOWNSHIP	17 548508 4840921 W	2013/06 7221	6.26	UT 0178	99/109/5/1:0	DO		7204372 (Z159276) A139028	BRWN SAND 0035 GREY CLAY STNS 0098 GREY CLAY 0106 BRWN LMSN 0178
NICHOL TOWNSHIP	17 548484 4840569 W	2014/10 7221				MO		7231008 (Z188931) A148244 A	
NICHOL TOWNSHIP	17 548546 4840760 W	2014/10 7221				MO		7231009 (Z188933) A148257 A	
NICHOL TOWNSHIP	17 548308 4840759 W	2015/01 7282	2	UT 0015		TH	0020 5	7236872 (Z202517) A167653	BRWN SAND 0025

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
NICHOL TOWNSHIP	17 548460 4840552 W	2013/06 7366	1.5			MO	0020 5	7203469 (Z171713) A148256	BRWN SILT SAND LYRD 0025
NICHOL TOWNSHIP	17 548204 4840541 W	6875						7276311 (Z241498) A148258 A	
NICHOL TOWNSHIP	17 548579 4840528 W	2024/02 7719						7475263 (Z424848) A P	
NICHOL TOWNSHIP	17 548483 4840564 W	2022/09 7221						7429749 (Z394253) A P	
NICHOL TOWNSHIP	17 548404 4840377 W	2018/10 7557	6.25 6.25	FR 0100 FR 0105 FR 0130	30/60/10/1:0	DO		7357949 (Z319757) A256310	BRWN LOAM 0002 BRWN SAND SOFT 0026 BRWN CLAY SAND SOFT 0040 BRWN CLAY STNS HARD 0090 BRWN LMSN SHLE LYRD 0092 BRWN LMSN FCRD 0118 BLUE LMSN HARD 0155
NICHOL TOWNSHIP	17 548265 4840321 W	6875						7276312 (Z241499) A148253 A	
NICHOL TOWNSHIP CON 14 007	17 548483 4840347 W	1998/11 2336	6 6	FR 0160 FR 0200	67/111/10/1:0	DO		6712757 (196587)	BRWN CLAY SAND 0030 GREY CLAY STNS 0087 BRWN ROCK 0220
NICHOL TOWNSHIP CON 15 017	17 547836 4840204 W	2000/09 3317	6 6	FR 0292	59/120/7/1:30	DO		6713500 (219511)	BRWN CLAY SNDY 0001 BRWN SAND 0023 BRWN CLAY SOFT 0027 GREN CLAY STNS 0084 BRWN LMSN 0096 GREN LMSN 0234 BRWN LMSN 0277 GREN LMSN 0302
NICHOL TOWNSHIP CON 15 017	17 548439 4840641 W	1989/06 2336	6 6	FR 0095 FR 0135	36/45/4/31:0	DO		6709783 (54590)	BRWN FSND 0035 BRWN CLAY SAND 0045 BRWN CLAY GRVL 0090 BRWN ROCK 0120 GREY ROCK 0135
NICHOL TOWNSHIP CON 15 017	17 548385 4840613 W	2012/12 6875	5.90					7197323 (Z158808) A	
NICHOL TOWNSHIP CON 15 017	17 548070 4840549 L	1998/08 2576	6 6	FR 0243 FR 0280 FR 0291	83//8/1:0	DO		6712634 (194270)	LOAM 0001 BRWN GRVL SILT 0022 GREY GRVL SLTY CLAY 0049 BRWN CLAY SLTY GRVL 0073 BRWN CLAY SILT STKY 0113 BRWN QSND WBRG 0222 WHIT LMSN HARD 0253 GREY LMSN 0289 GREY LMSN HARD 0300
NICHOL TOWNSHIP CON 15 017	17 548413 4840607 W	1989/06 2336	6 6	FR 0130	47/77/4/15:0	DO		6709782 (54591)	BRWN FSND 0030 BRWN CLAY SAND 0045 BRWN CLAY GRVL 0085 BRWN ROCK 0135
NICHOL TOWNSHIP CON 15 017	17 548107 4840202 W	2012/12 6875	5.90					7197324 (Z158807) A	
NICHOL TOWNSHIP CON 15 017	17 548542 4840757 W	2014/10 7221				MO		7231007 (Z188932) A148256 A	
NICHOL TOWNSHIP CON 15 018	17 548406 4840305 W	1998/10 2336	6 6	FR 0170	67/105/6/1:0	DO		6712675 (191798)	BRWN SAND STNS 0030 GREY CLAY STNS 0092 BRWN ROCK 0135 BRWN ROCK 0180
NICHOL TOWNSHIP CON 15 018	17 548538 4840372 W	1993/09 4854	30	FR 0008	8///:	DO		6711273 (111186)	BRWN CLAY 0003 GREY SAND FSND 0009 GREY SAND MSND 0020

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
NICHOL TOWNSHIP CON 15 018	17 548494 4840766 W	1997/05 2336	6 6		44/125/3/1:0	DO		6712246 (176191)	BRWN SAND 0030 GREY CLAY SAND 0050 GREY CLAY GRVL 0094 BRWN ROCK 0115 GREY ROCK 0140
NICHOL TOWNSHIP CON 15 018	17 548513 4840457 W	1995/05 6030	30 24	FR 0006	6/9/10/1:0	DO		6711726 (73494)	PRDG 0010 BRWN SAND CSND 0012
NICHOL TOWNSHIP CON 15 018	17 548546 4840431 W	1994/01 4854	30	FR 0009	9///:	DO		6711379 (111190)	BRWN CLAY 0001 BRWN SAND CLAY SNDY 0002 BRWN SAND 0009 GREY SAND 0014 BRWN CLAY SNDY 0019
NICHOL TOWNSHIP CON 15 018	17 548368 4840261 L	1993/06 6624	5 5	FR 0105 FR 0133	35//10/1:0	DO		6711253 (093832)	BRWN SAND STNS GRVL 0006 BRWN CLAY GRVL 0015 BRWN SAND STNS 0025 BRWN SAND 0047 BRWN SAND STNS GRVL 0052 GREY SAND GRVL CLAY 0058 HPAN 0060 GREY CLAY GRVL 0069 GREY CLAY GRVL STNS 0077 BRWN LMSN LYRD 0081 GRVL 0083 GREY GRVL CLAY BLDR 0093 BRWN LMSN 0135
NICHOL TOWNSHIP CON 15 018	17 548516 4840413 W	1991/07 2332	5	FR 0150	35/80/10/2:0	DO		6710879 (103721)	BLCK LOAM FILL 0004 BRWN CLAY FSND 0032 GREY CLAY ROCK 0088 GREY ROCK 0180
NICHOL TOWNSHIP CON 15 018	17 548548 4840490 W	1990/05 2336	6 6	FR 0115 FR 0141	74/100/10/1:0	DO		6710312 (78202)	BRWN FSND 0035 BRWN CLAY SAND 0075 BRWN CLAY GRVL 0089 BRWN ROCK 0141
NICHOL TOWNSHIP CON 15 018	17 548392 4840422 W	1989/10 2336	6 6	FR 0120	22/60/12/1:0	DO		6710108 (65938)	BRWN FSND 0030 BRWN CLAY SAND 0045 BRWN CLAY GRVL 0087 BRWN ROCK 0122
NICHOL TOWNSHIP CON 15 018	17 548556 4840447 W	1995/05 6030	36 30	FR 0010	10/13/10/1:0	DO		6711725 (73495)	PRDG 0012 BRWN SAND STNS CSND 0015
NICHOL TOWNSHIP CON 15 018	17 548334 4840234 W	1999/08 2336	6 6	FR 0180	46/98/15/1:0	DO		6713080 (196660)	BRWN SAND STNS 0030 GREY CLAY STNS 0091 BRWN ROCK 0115 GREY ROCK 0130 GREY ROCK 0180
NICHOL TOWNSHIP CON 15 018	17 548354 4840268 W	2010/05 2663	6 6	UT 0184	78/132/10/1:0	DO		7146695 (Z107668) A093339	BRWN LOAM 0003 BRWN CLAY 0010 BRWN SAND STNS 0032 GREY CLAY SAND GRVL 0085 GREY LMSN 0105 BRWN LMSN 0140 GREY LMSN 0184
NICHOL TOWNSHIP CON 15 018	17 548386 4840249 W	2010/07 2663				DO		7149988 (Z113991) A	
NICHOL TOWNSHIP CON 15 018	17 548314 4840373 W	1974/06 2519	30	FR 0010	10/18/5/1:0	DO		6705142 ()	BRWN CLAY 0005 BRWN SAND 0017 BLUE SAND 0020 BLUE HPAN CLAY 0021
NICHOL TOWNSHIP CON 15 018	17 548459 4840482 W	2022/09 7557						7435961 (Z388641) P	
NICHOL TOWNSHIP CON 15 018	17 548419 4840393 W	2020/05 6865	6.26 6.13		129/101/10/1:	DO		7368438 (Z298689) A214517	BRWN CLAY SAND 0043 GREY CLAY FGVL 0056 GREY CLAY GRVL STNS 0089 GREY LMSN FCRD 0094 GREY LMSN 0162
NICHOL TOWNSHIP CON 15 018	17 548385 4840397 W	2019/11 7556	6.11 6	UT 0165	42/78/10/1:	DO		7350271 (Z291585) A277591	BRWN SAND 0035 GREY CLAY SOFT 0040 GREY CLAY GRVL 0094 GREY LMSN 0165
NICHOL TOWNSHIP CON 15 018	17 548403 4840370 W	2019/08 7557			10///:			7346405 (Z319765) A	
NICHOL TOWNSHIP CON 15 018	17 548411 4840396 W	2019/08 7557			13///:			7346404 (Z319766) A	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
NICHOL TOWNSHIP CON 15 020	17 548237 4841046 W	1989/03 3317	6 6	FR 0225	97/140/20/1:15	AC		6710068 (36914)	GRVL FILL 0003 BRWN CLAY STNS 0020 GREY CLAY 0030 GREY CLAY STNS 0077 BRWN LMSN 0096 GREY LMSN 0125 BRWN LMSN 0265
NICHOL TOWNSHIP CON 16 012	17 548465 4840975 W	2013/07 7221	2.86					7207130 (Z159266) A	
NICHOL TOWNSHIP CON 16 017	17 548337 4841071 W	2024/01 7472	2		///:	MO	0015 10	7472627 (3EYIS58J) A396937	BRWN LOAM FILL LOOS 0002 GREY SAND GRVL PCKD 0009 GREY CLAY TILL PCKD 0025
NICHOL TOWNSHIP CON 16 017	17 548493 4840891 W	2024/09 7472	2		///:	MO	0015 10	7491451 (JCQTU73W) A412715	GREY SAND SILT PCKD 0025
NICHOL TOWNSHIP CON 16 017	17 548542 4841030 W	2024/01 7472	2		///:	MO	0015 10	7472625 (5GBFS26K) A398748	BRWN LOAM FILL LOOS 0002 GREY SAND GRVL PCKD 0009 GREY CLAY TILL PCKD 0025
NICHOL TOWNSHIP CON 16 017	17 548556 4841167 W	2024/09 7472	2		///:	MO	0015 10	7491450 (N2AV6N7L) A412700	GREY SAND SILT PCKD 0025

Notes:
UTM: UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
DATE CNTR: Date Work Completedand Well Contractor Licence Number
CASING DIA: Casing diameter in inches
WATER: Unit of Depth in Fee. See Table 4 for Meaning of Code

PUMP TEST: Static Water Level in Feet / Water Level After Pumping in Feet / Pump Test Rate in GPM / Pump Test Duration in Hour : Minutes
WELL USE: See Table 3 for Meaning of Code
SCREEN: Screen Depth and Length in feet
WELL: WEL (AUDIT #) Well Tag . A: Abandonment; P: Partial Data Entry Only
FORMATION: See Table 1 and 2 for Meaning of Code

1. Core Material and Descriptive terms

Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
BLDR	BOULDERS	FCRD	FRACTURED	IRFM	IRON FORMATION	PORS	POROUS	SOFT	SOFT
BSLT	BASALT	FGRD	FINE-GRAINED	LIMY	LIMY	PRDG	PREVIOUSLY DUG	SPST	SOAPSTONE
CGRD	COARSE-GRAINED	FGVL	FINE GRAVEL	LMSN	LIMESTONE	PRDR	PREV. DRILLED	STKY	STICKY
CGVL	COARSE GRAVEL	FILL	FILL	LOAM	TOPSOIL	QRTZ	QUARTZITE	STNS	STONES
CHRT	CHERT	FLDS	FELDSPAR	LOOS	LOOSE	QSND	QUICKSAND	STNY	STONEY
CLAY	CLAY	FLNT	FLINT	LTCL	LIGHT-COLOURED	QTZ	QUARTZ	THIK	THICK
CLN	CLEAN	FOSS	FOSILIFEROUS	LYRD	LAYERED	ROCK	ROCK	THIN	THIN
CLYY	CLAYEY	FSND	FINE SAND	MARL	MARL	SAND	SAND	TILL	TILL
CMTD	CEMENTED	GNIS	GNEISS	MGRD	MEDIUM-GRAINED	SHLE	SHALE	UNKN	UNKNOWN TYPE
CONG	CONGLOMERATE	GRNT	GRANITE	MGVL	MEDIUM GRAVEL	SHLY	SHALY	VERY	VERY
CRYS	CRYSTALLINE	GRSN	GREENSTONE	MRBL	MARBLE	SHRP	SHARP	WBRG	WATER-BEARING
CSND	COARSE SAND	GRVL	GRAVEL	MSND	MEDIUM SAND	SHST	SCHIST	WDFR	WOOD FRAGMENTS
DKCL	DARK-COLOURED	GRWK	GREYWACKE	MUCK	MUCK	SILT	SILT	WTHD	WEATHERED
DLMT	DOLOMITE	GVLY	GRAVELLY	OBDN	OVERBURDEN	SLTE	SLATE		
DNSE	DENSE	GYPS	GYPSUM	PCKD	PACKED	SLTY	SILTY		
DRTY	DIRTY	HARD	HARD	PEAT	PEAT	SNDS	SANDSTONE		
DRY	DRY	HPAN	HARDPAN	PGVL	PEA GRAVEL	SNDY	SANDYOAPSTONE		

2. Core Color

Code	Description
WHIT	WHITE
GREY	GREY
BLUE	BLUE
GREN	GREEN
YLLW	YELLOW
BRWN	BROWN
RED	RED
BLCK	BLACK
BLGY	BLUE-GREY

3. Well Use

Code	Description	Code	Description
DO	Domestic	OT	Other
ST	Livestock	TH	Test Hole
IR	Irrigation	DE	Dewatering
IN	Industrial	MO	Monitoring
CO	Commercial	MT	Monitoring TestHole
MN	Municipal		
PS	Public		
AC	Cooling And A/C		
NU	Not Used		

4. Water Detail

Code	Description	Code	Description
FR	Fresh	GS	Gas
SA	Salty	IR	Iron
SU	Sulphur		
MN	Mineral		
UK	Unknown		

WATER WELL SURVEY

Project: 6585 Highway 6, Fergus Date: APRIL 4/5 2026

PROPERTY INFORMATION

Current Owner: DARLENE & STEPHEN POLLOCK Previous Owner (If Known): WA

Address: 78 SIDE ROAD 18

Contact Number: 519-362-4165

WELL INFORMATION

MECP Well Tag # 2

Well Depth: 146 FEET Well Diameter: 6" Well Use: Residential Agricultural Commercial

Construction Date: 93 ± Depth of Pump: 130 ±

Aquifer Type: Bedrock Overburden Is the well accessible for inspection? YES NO

Any issues with water supply i.e. your well going dry? (Describe) NO

Would you be willing to participate in a water well monitoring program? PERHAPS YES NO

WATER CHEMISTRY

Appearance: CLEAR Taste: NONE

Water treatment system? (Describe) NONE Odour: NONE

Rusty / black stains on sinks/toilets? NO

Have you had water chemistry tests done on your well water? (Describe) YES PUBLIC HEALTH 0-0

SKETCH OF PROPERTY

Please show location of your house, your well, and your septic bed, along with your driveway and roadways.

Any Additional Comments?

PLEASE RETURN TO:
Hydrogeology Consulting Services Inc.
25 Water Street West
Elora, Ontario
N0B 1S0

OR SCAN AND SEND VIA EMAIL OR TEXT TO:
chrishelmer@hydrog.ca
905-550-0969

HCS HYDROGEOLOGY CONSULTING SERVICES INC

ANY QUESTIONS? Please Contact:

Chris Helmer, Senior Hydrogeologist
Phone: 905-550-0969
Email: chrishelmer@hydrog.ca

WATER WELL SURVEY

Project: 6585 Highway 6, Fergus Date: April 4th 2026

PROPERTY INFORMATION

Current Owner: Rob & Annette Nicklasson Previous Owner (If Known): _____

Address: 0033 Sideroad 18 Fergus

Contact Number: 519-835-6554

WELL INFORMATION

MECP Well Tag # _____

Well Depth: 132" Well Diameter: 3Ft Well Use: Residential Agricultural Commercial

Construction Date: _____ Depth of Pump: 125"

Aquifer Type: Bedrock (Overburden) Is the well accessible for inspection? (YES) NO

Any issues with water supply i.e. your well going dry? (Describe) No

Would you be willing to participate in a water well monitoring program? (YES) NO

WATER CHEMISTRY

Appearance: Clear Taste: Good

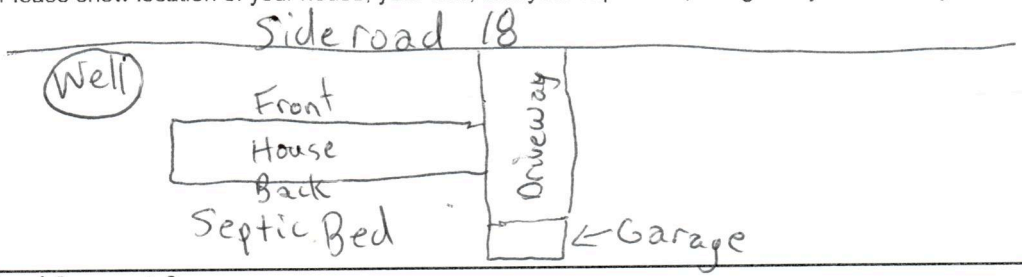
Water treatment system? (Describe) UV Odour: None

Rusty / black stains on sinks/toilets? None

Have you had water chemistry tests done on your well water? (Describe) _____

SKETCH OF PROPERTY

Please show location of your house, your well, and your septic bed, along with your driveway and roadways.



Any Additional Comments?

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WATER WELL SURVEY

Project: 6585 Highway 6, Fergus Date: Apr. 9/26

PROPERTY INFORMATION

Current Owner: John Montgomery Previous Owner (If Known): No previous owner

Address: 74 Sideroad 18 Fergus

Contact Number: 519-787-6639

WELL INFORMATION

MECP Well Tag #

Well Depth: 135 ft Well Diameter: 5" ID Well Use: (Residential) Agricultural Commercial

Construction Date: August 1993 Depth of Pump: 90 ft

Aquifer Type: (Bedrock) Overburden Is the well accessible for inspection? (YES) NO

Any issues with water supply i.e. your well going dry? (Describe) None

Would you be willing to participate in a water well monitoring program? (YES) NO

WATER CHEMISTRY

Appearance: clear Taste:

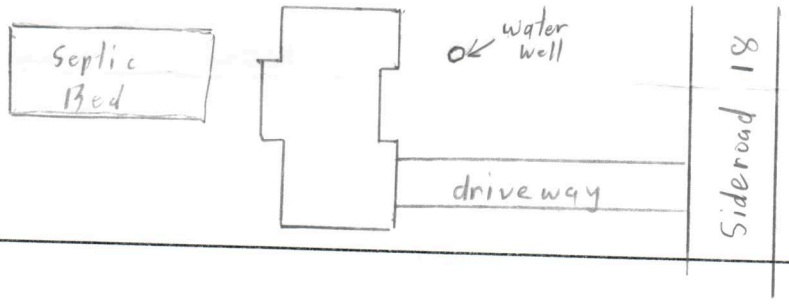
Water treatment system? (Describe) water softener Odour: not noticeable

Rusty / black stains on sinks/toilets? iron is in the water

Have you had water chemistry tests done on your well water? (Describe) No

SKETCH OF PROPERTY

Please show location of your house, your well, and your septic bed, along with your driveway and roadways.



Any Additional Comments?

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chrishelmer@hydrog.ca
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Email: chrishelmer@hydrog.ca

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WATER WELL SURVEY

Project: 6585 Highway 6, Fergus Date:

PROPERTY INFORMATION

Current Owner: JAMES & RITA SELF Previous Owner (If Known):

Address: 0061 SD RD 18 FERGUS ON. N1M 2W3

Contact Number: 519-843-5681

WELL INFORMATION

MECP Well Tag # —— DUG WELL

Well Depth: 14 Ft. Well Diameter: 36" Well Use: (Residential) Agricultural Commercial

Construction Date: JULY 1984 Depth of Pump: IN CELLAR

Aquifer Type: Bedrock Overburden Is the well accessible for inspection? (YES) NO

Any issues with water supply i.e. your well going dry? (Describe) DRY SUMMER - LOW WATER

Would you be willing to participate in a water well monitoring program? (YES) NO

WATER CHEMISTRY

Appearance: CLEAR Taste: NO (DO NOT DRINK)

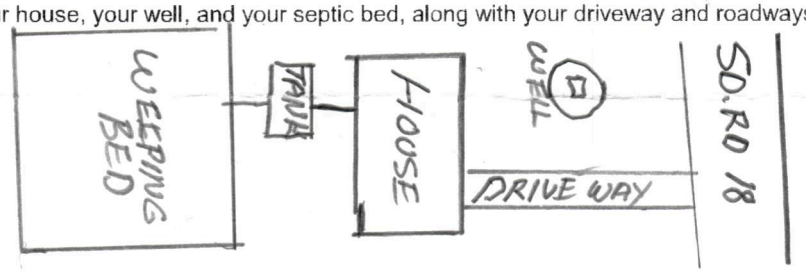
Water treatment system? (Describe) NO Odour: NO

Rusty / black stains on sinks/toilets? NO

Have you had water chemistry tests done on your well water? (Describe) No

SKETCH OF PROPERTY

Please show location of your house, your well, and your septic bed, along with your driveway and roadways.



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Email: chrishelmer@hydrog.ca

HCS HYDROGEOLOGY CONSULTING SERVICES INC

WATER WELL SURVEY

Project: 6585 Highway 6, Fergus Date: June. 6, 2026

PROPERTY INFORMATION

Current Owner: Barry & Katherine Earngey Previous Owner (If Known): _____

Address: 41 Sideroad 18, Fergus N1M 2W3

Contact Number: 226-383-8401

WELL INFORMATION

Well static 10'

MECP Well Tag # _____

Well Depth: 13' Well Diameter: 3'6" Well Use: (Residential) Agricultural Commercial

Construction Date: 1985 Depth of Pump: _____

Aquifer Type: Bedrock Overburden Is the well accessible for inspection? (YES) NO

Any issues with water supply i.e. your well going dry? (Describe) ~~X~~. No

Would you be willing to participate in a water well monitoring program? (YES) NO

WATER CHEMISTRY

Appearance: Clear Taste: good

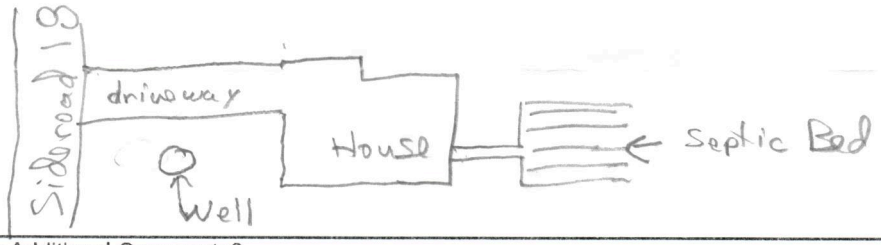
Water treatment system? (Describe) Ultraviolet Odour: No odour

Rusty / black stains on sinks/toilets? Calcium build-up

Have you had water chemistry tests done on your well water? (Describe) _____

SKETCH OF PROPERTY

Please show location of your house, your well, and your septic bed, along with your driveway and roadways.



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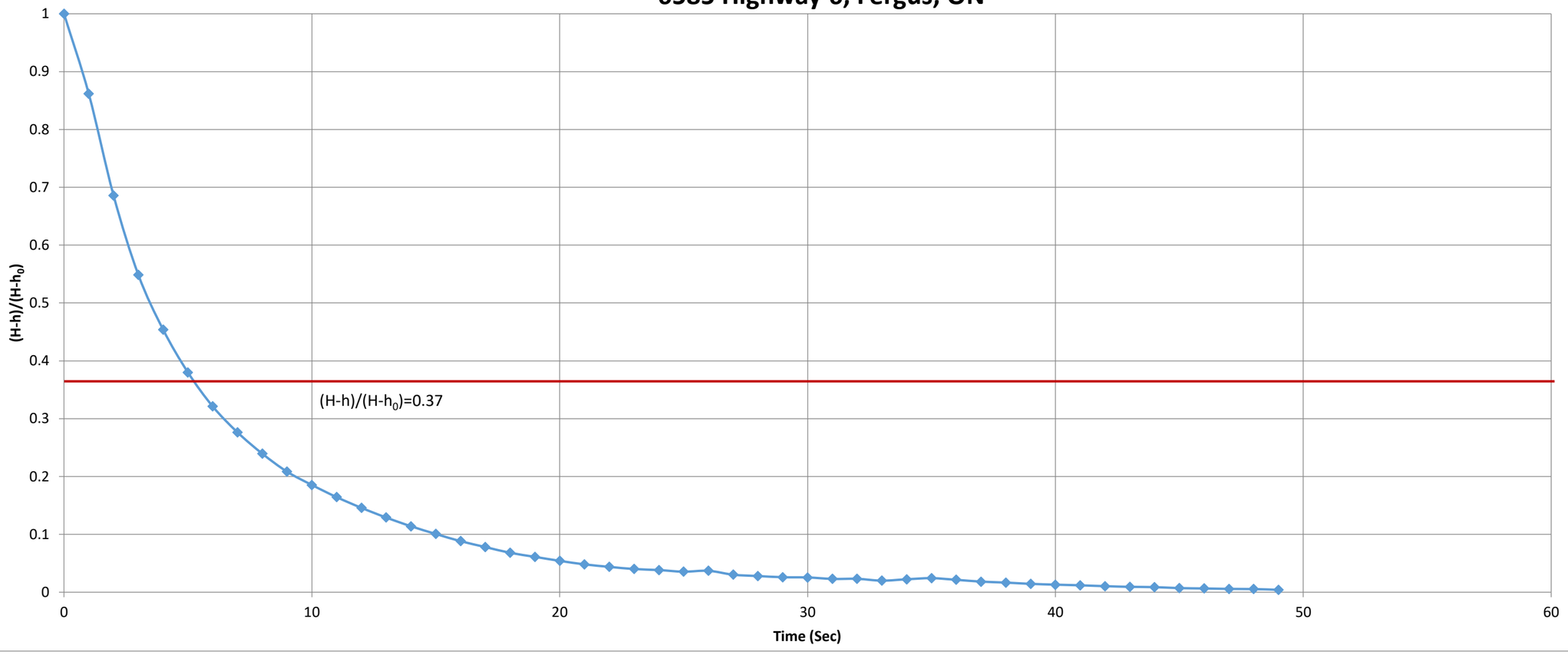
HCS HYDROGEOLOGY CONSULTING SERVICES INC

APPENDIX E: SLUG TEST ANALYSIS GRAPHS

Figures 1-12

Figure 1
MW1-26 (A459181) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.91	m	casing stickup from ground surface
SWL=	5.84	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	0.96	m	Water level change at T=0
$T_{0.37}$ =	5	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 1.4E-04 m/sec

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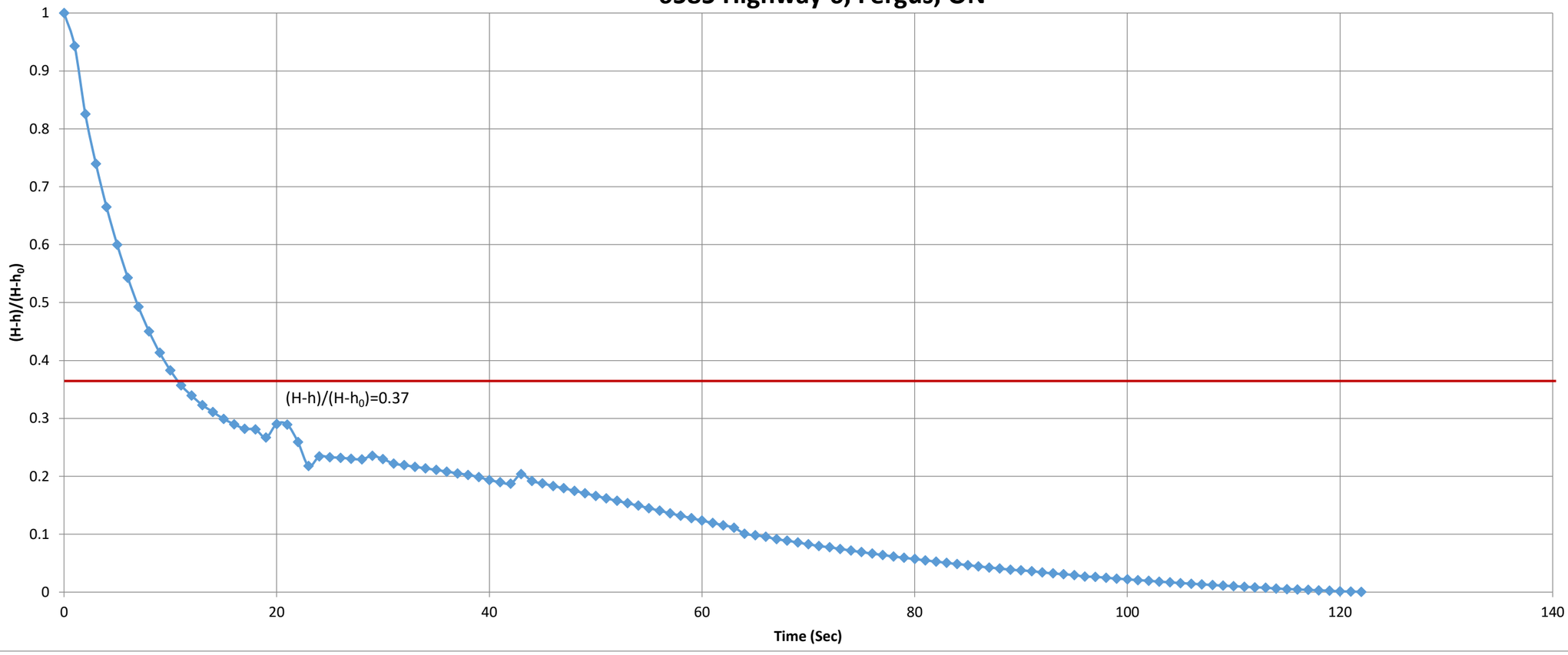
Figure 2
MW2-26 (A459190) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.92	m	casing stickup from ground surface
SWL=	3.61	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	1.62	m	Water level change at T=0
$T_{0.37}$ =	10	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 7.2E-05 m/sec

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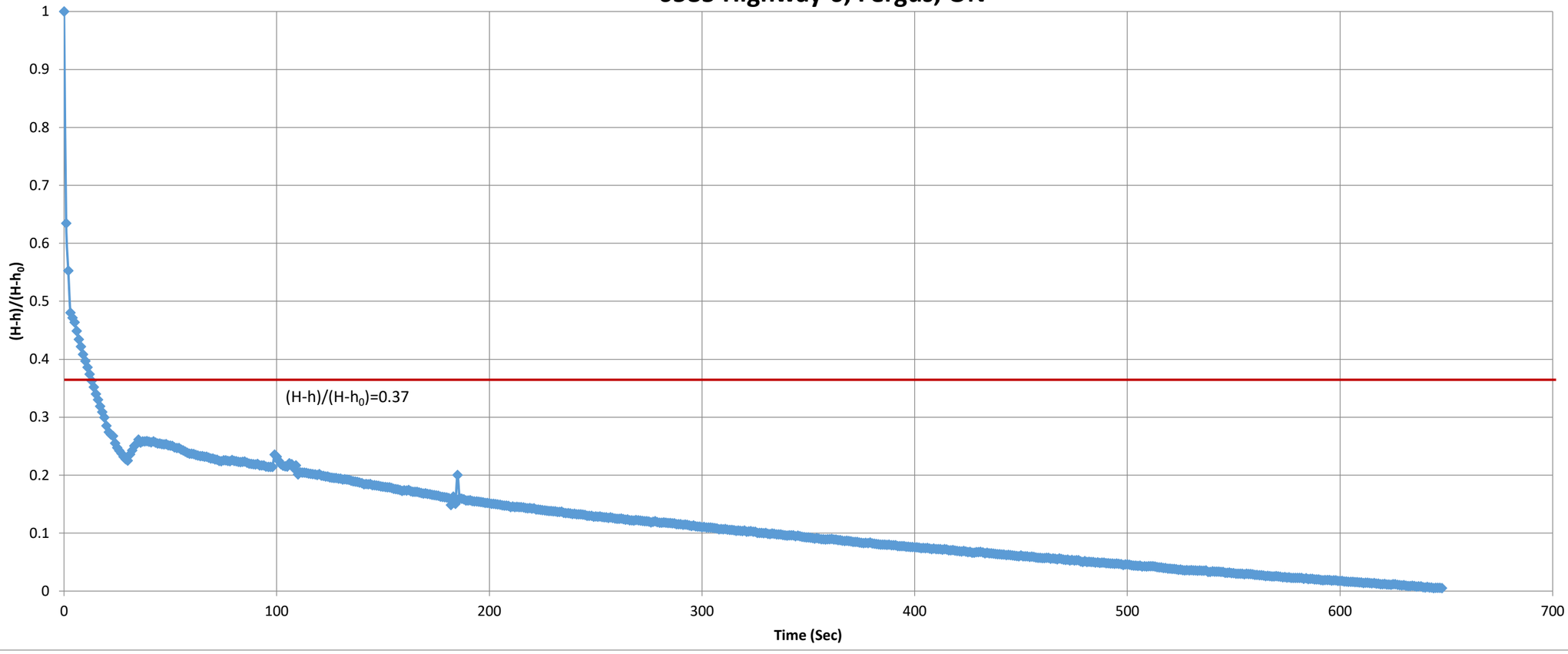
Figure 3
MW3-26 (A459214) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.72	m	casing stickup from ground surface
SWL=	4.63	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	0.43	m	Water level change at T=0
$T_{0.37}$ =	12	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 6.0E-05 m/sec

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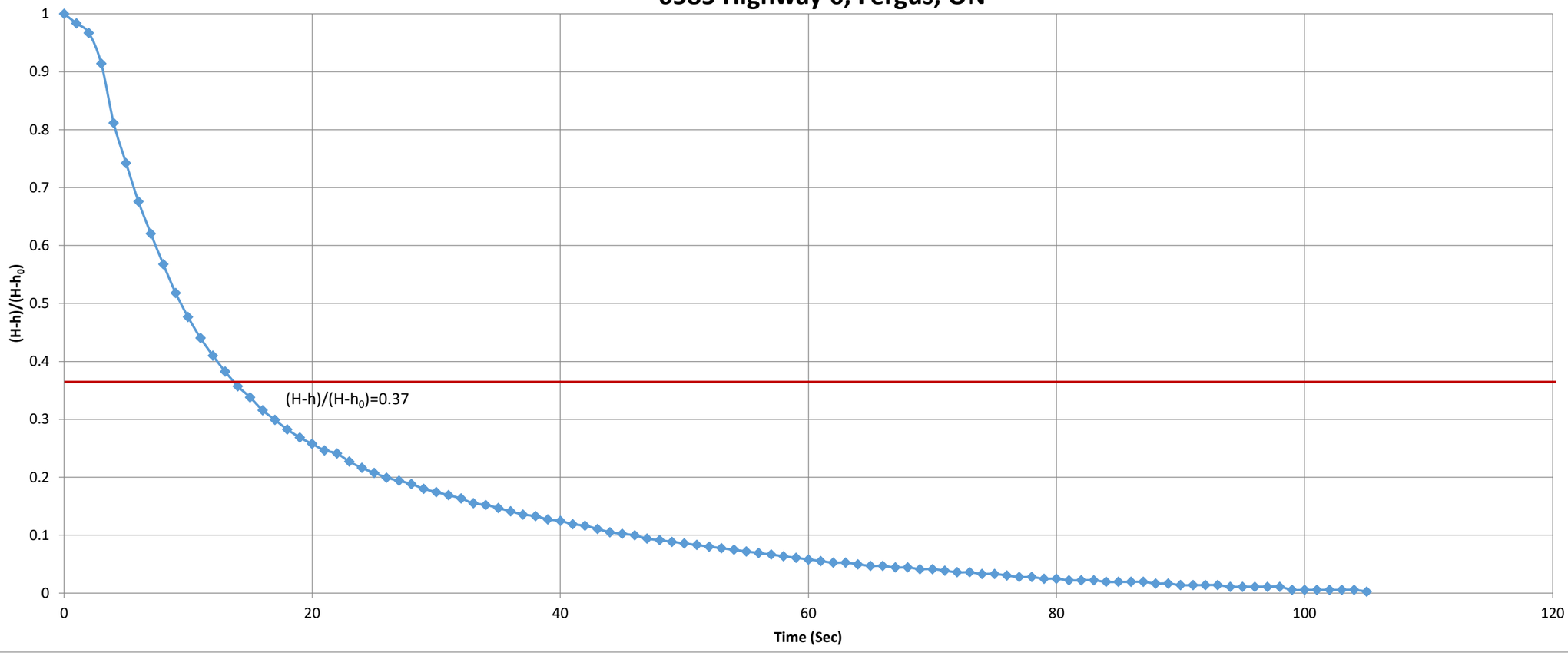
Figure 4
MW4-26 (A459218) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.70	m	casing stickup from ground surface
SWL=	4.84	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	1.08	m	Water level change at T=0
$T_{0.37}$ =	13	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 5.6E-05 m/sec

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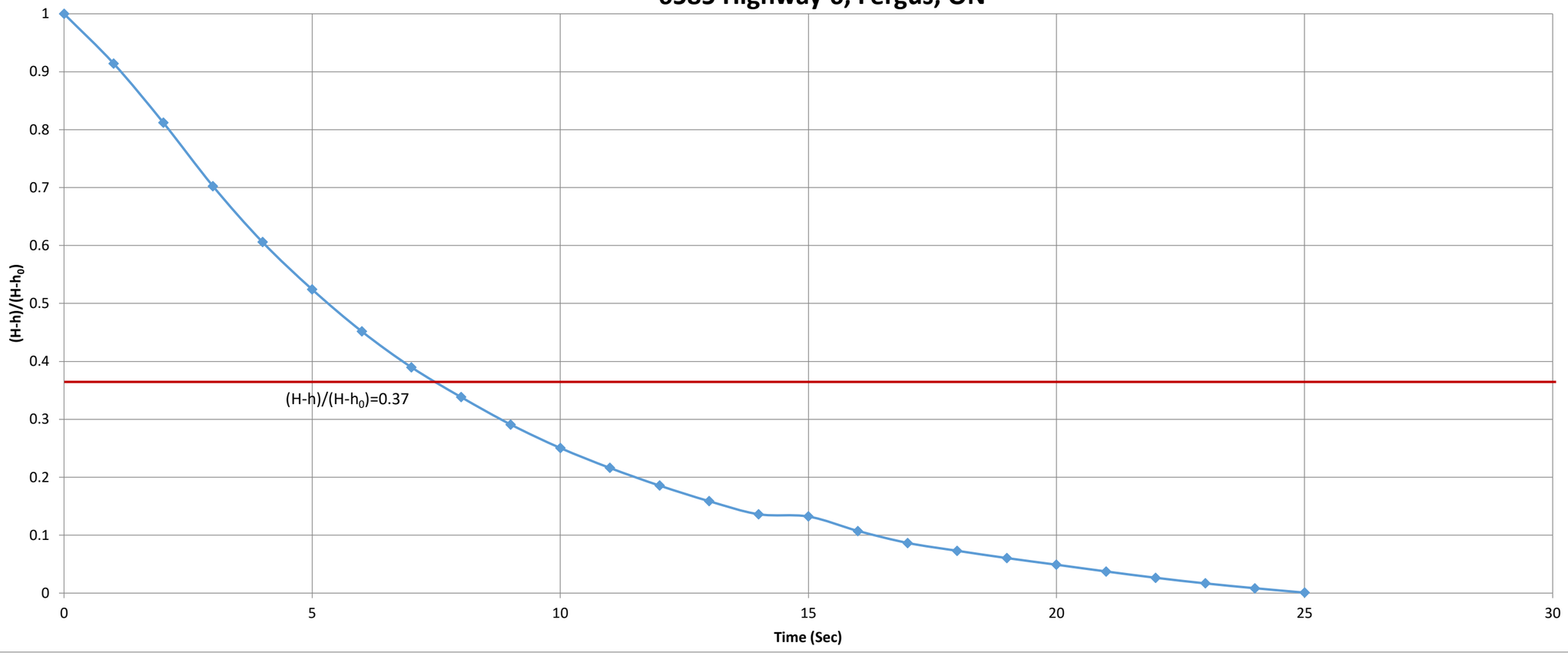
Figure 5
MW5-26 (A459183) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.98	m	casing stickup from ground surface
SWL=	5.66	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	1.39	m	Water level change at T=0
$T_{0.37}$ =	7	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 1.0E-04 m/sec

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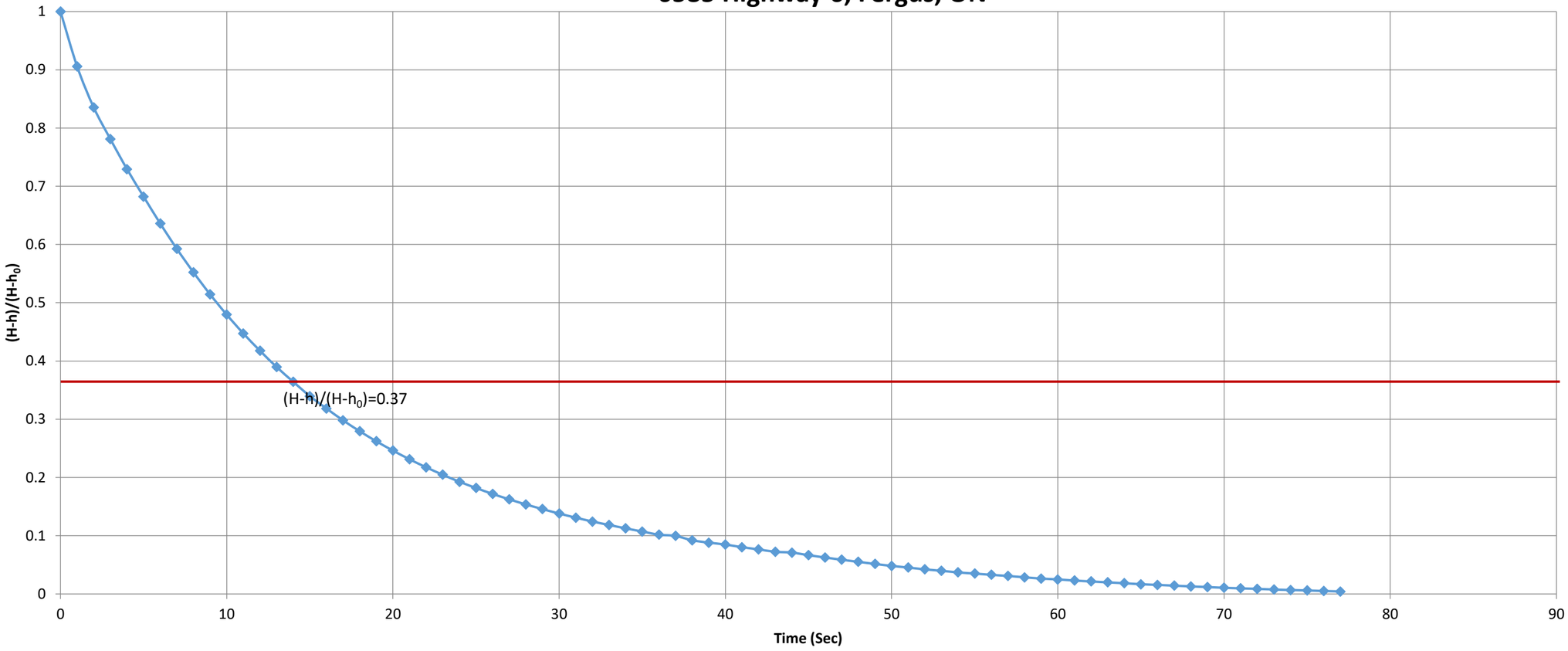
Figure 6
MW6-26 (A459182) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.83	m	casing stickup from ground surface
SWL=	5.23	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	2.09	m	Water level change at T=0
$T_{0.37}$ =	14	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 5.2E-05 m/sec

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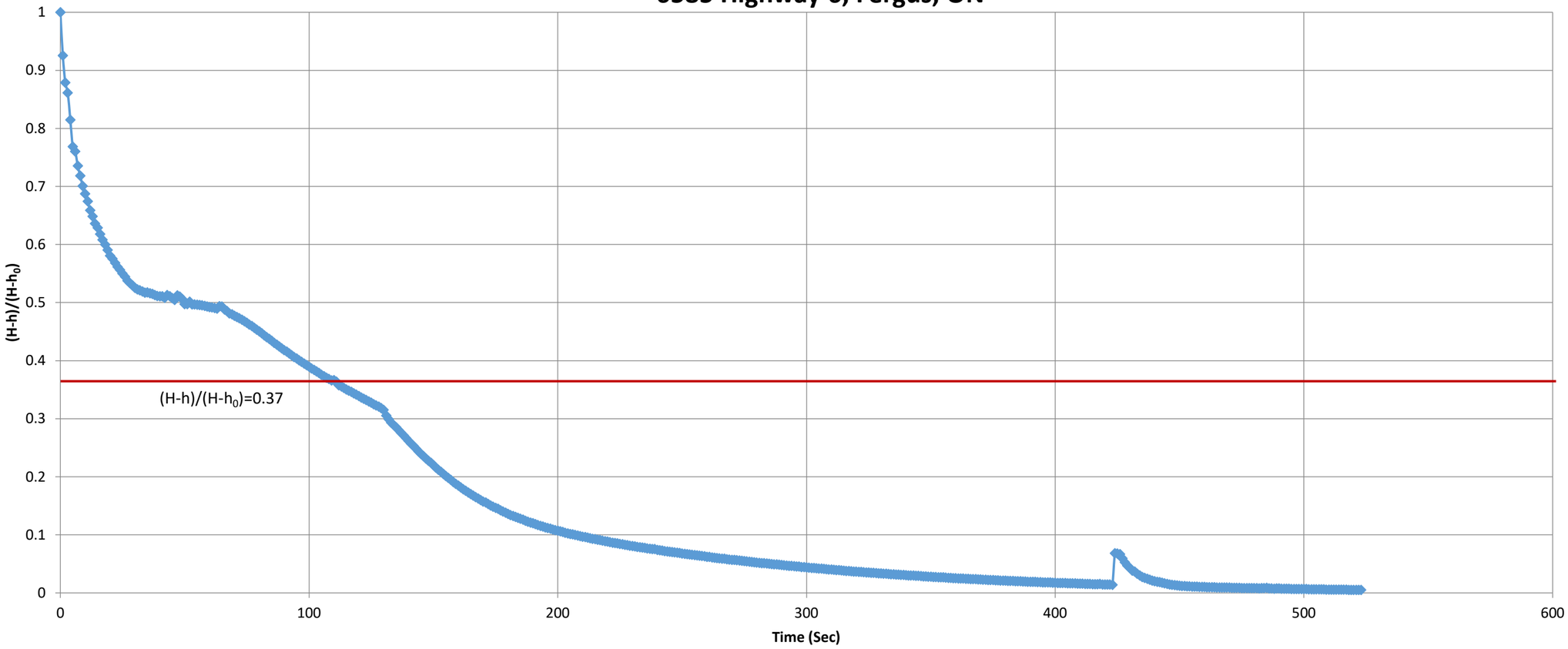
Figure 7
MW7-26 (A459187) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.66	m	casing stickup from ground surface
SWL=	5.54	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	2.21	m	Water level change at T=0
$T_{0.37}$ =	107	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 6.8E-06 m/sec

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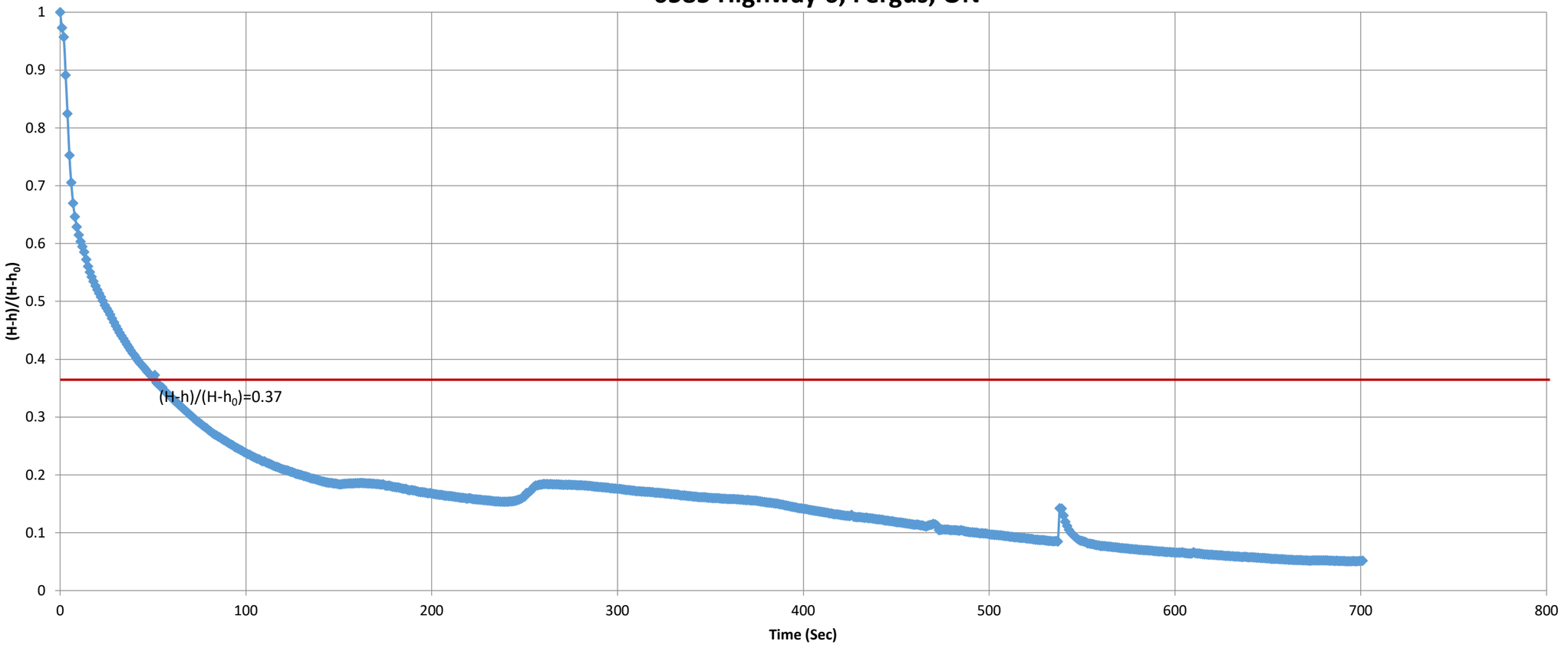
Figure 8
MW8-26 (A459184) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.89	m	casing stickup from ground surface
SWL=	5.90	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	3.05	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	1.20	m	Water level change at T=0
$T_{0.37}$ =	51	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 8.5E-06 m/sec

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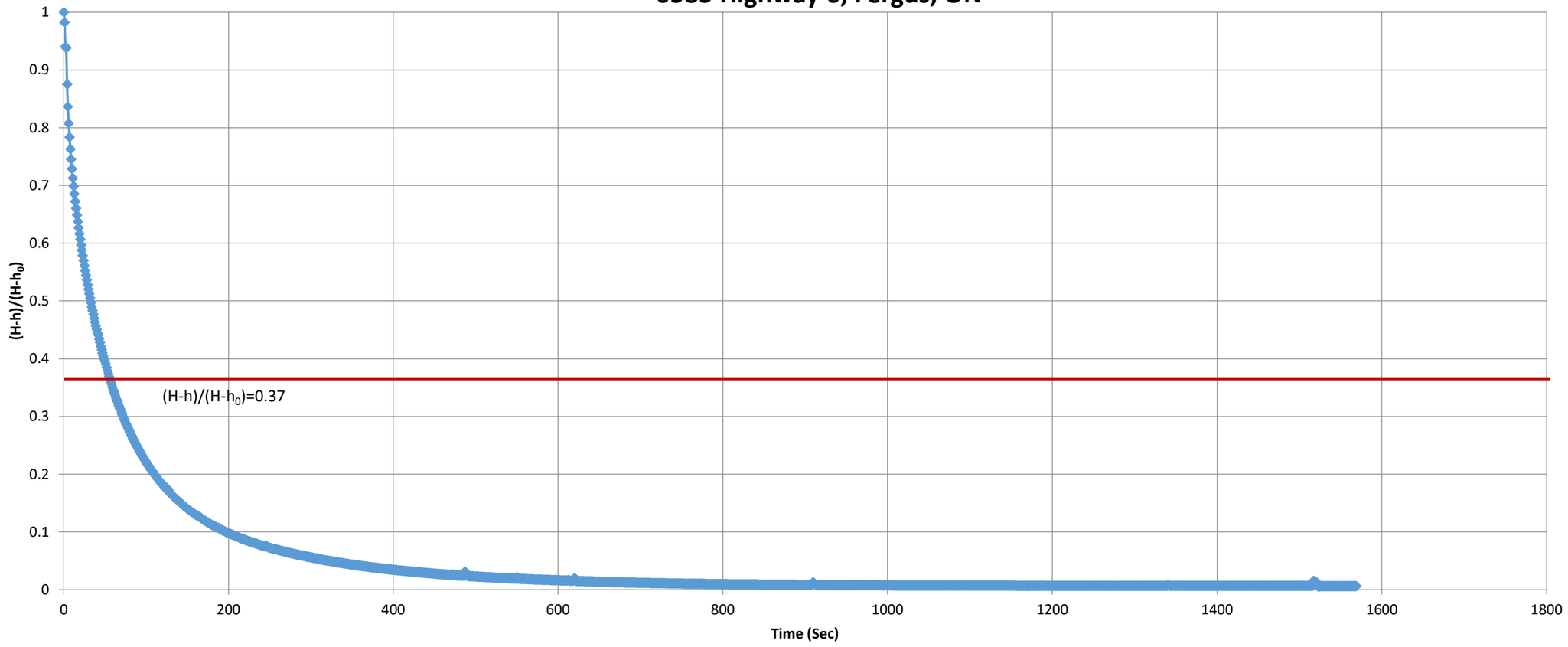
Figure 9
MW9-26 (A459189) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.78	m	casing stickup from ground surface
SWL=	6.39	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	5.25	m	Water level change at T=0
$T_{0.37}$ =	54	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 1.3E-05 m/sec

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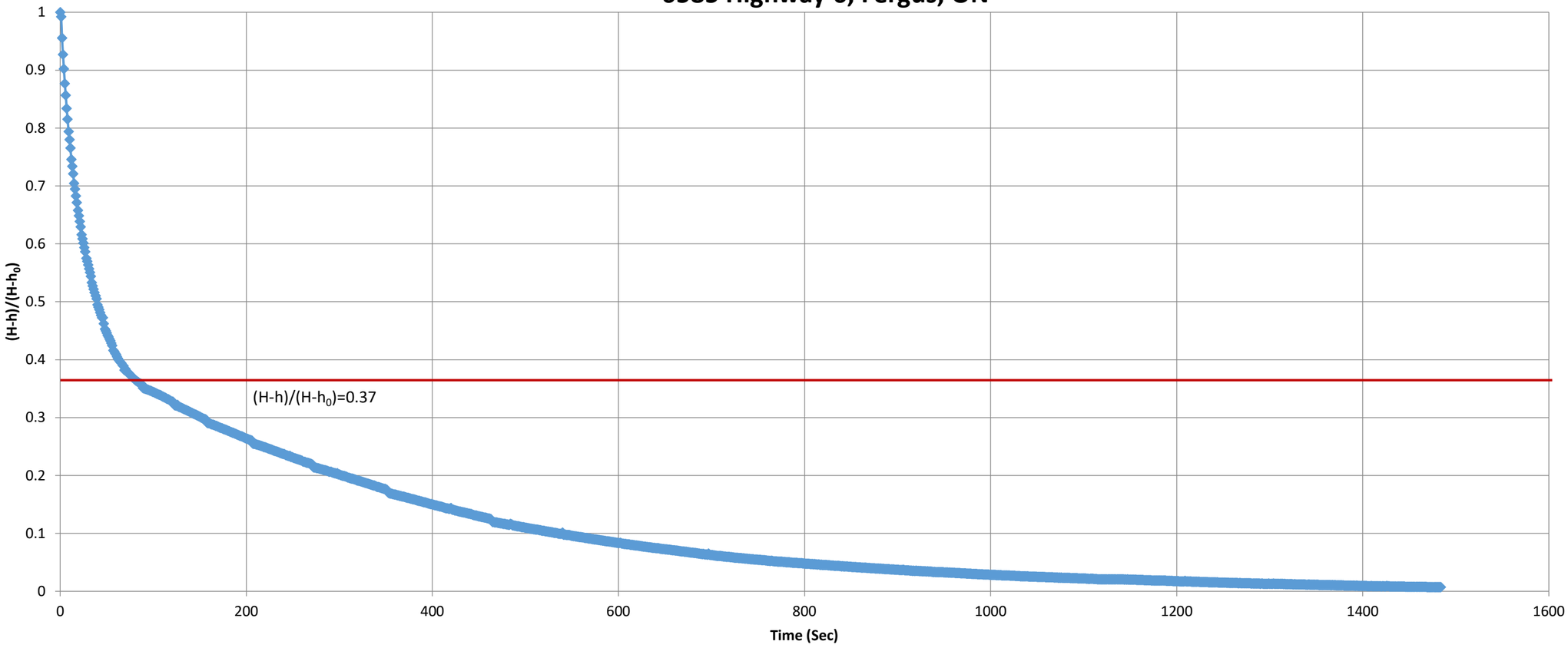
Figure 10
MW10-26 (A459186) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.74	m	casing stickup from ground surface
SWL=	2.67	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	2.27	m	Water level change at T=0
$T_{0.37}$ =	77	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 9.4E-06 m/sec

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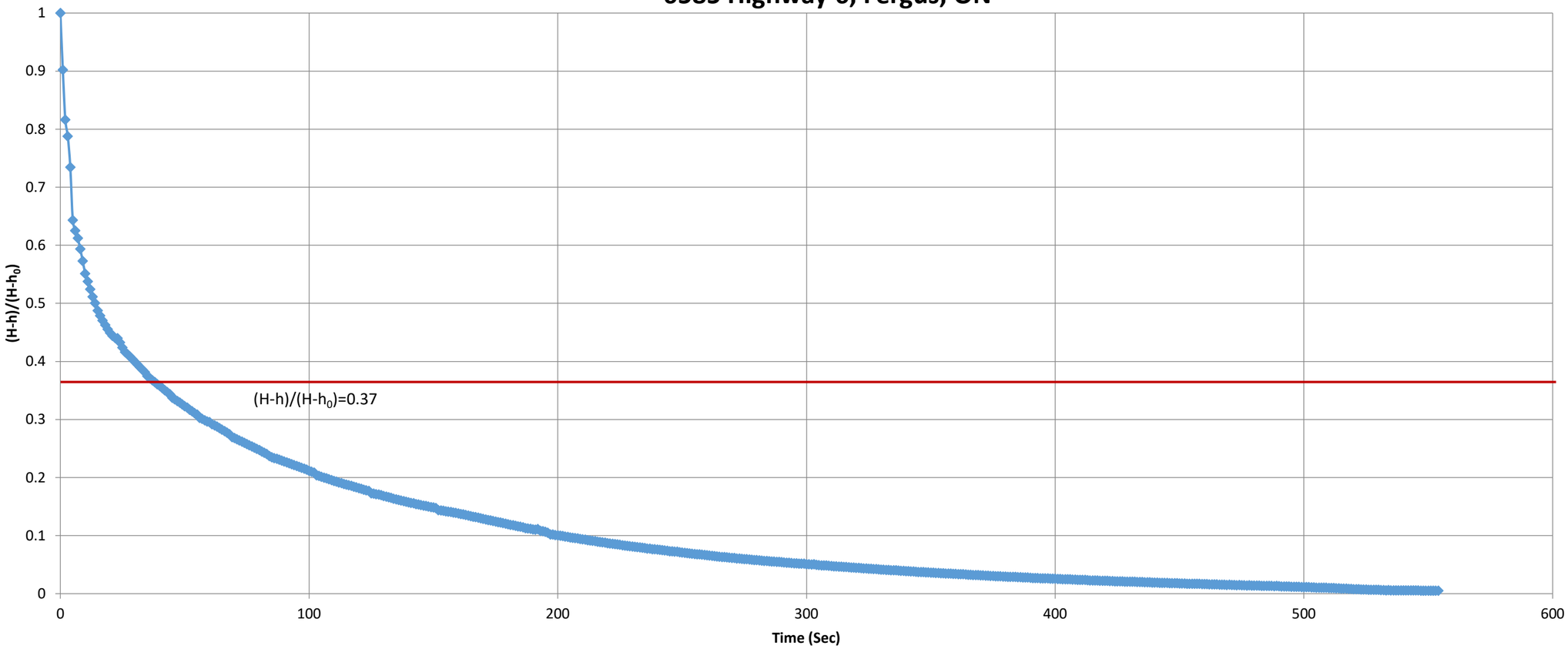
Figure 11
MW11-26 (A459188) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.76	m	casing stickup from ground surface
SWL=	4.71	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	2.42	m	Water level change at T=0
$T_{0.37}$ =	36	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 2.0E-05 m/sec

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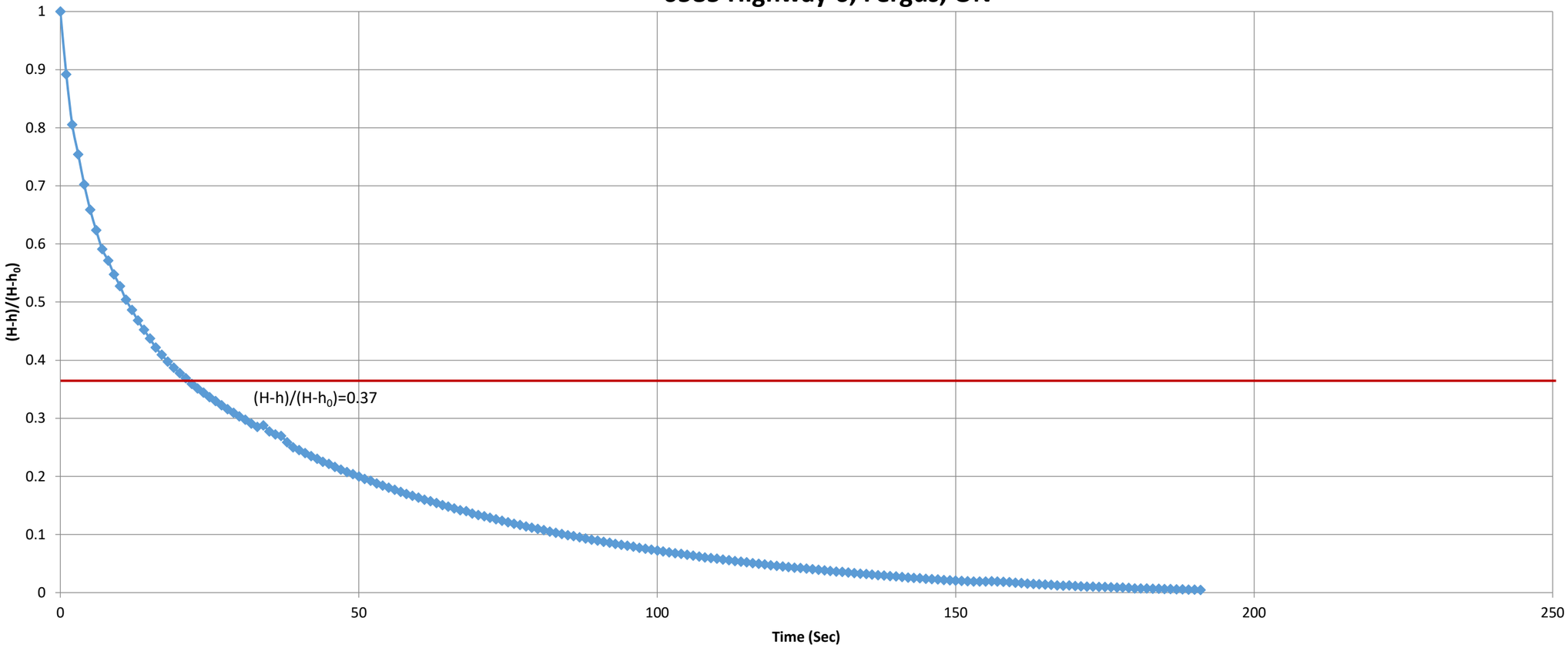
Figure 12
MW12-26 (A459185) Slug Test Analysis
6585 Highway 6, Fergus, ON



Hvorslev Method for Slug Test Analysis

stickup=	0.70	m	casing stickup from ground surface
SWL=	4.28	m	Static Water Level (mBTOP)
r =	0.025	m	casing radius
L =	1.53	m	screen length
R =	0.05	m	borehole radius (estimated)
$H-h_o$ =	2.94	m	Water level change at T=0
$T_{0.37}$ =	20	sec	T at $(H-h)/(H-h_0)=0.37$

$$k = \frac{r^2 \ln(L/R)}{2LT_{0.37}}$$

k= 3.6E-05 m/sec

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5/7/2026

APPENDIX F: GRAIN SIZE ANALYSIS GRAPHS

Figures 1-12

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH1-26, SS9*
Lab No.:	*151*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	99
9.5	99
4.75	99
2	99
1.18	98.5
0.6	98.0
0.3	87.3
0.15	15.5
0.075	4.5

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	3.8
0.020	3.1
0.017	3.4
0.01	3.4
0.007	3.4
0.005	3.4
0.002	1.9
0.001	1.2
Gradation Proportions %	
Gravel	1.1
Sand	94.4
Silt	2.5
Clay	1.9

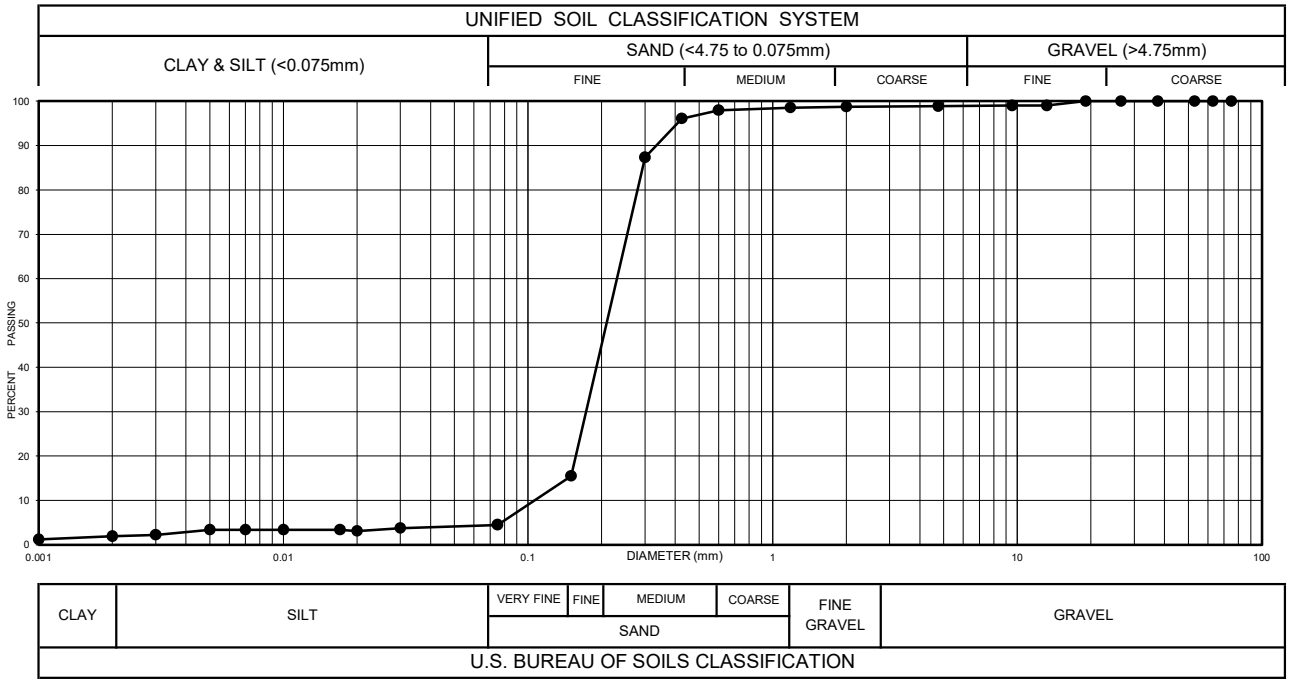
Soil Description	
SAND, trace Silt, trace Clay, trace Gravel	

Effective Particle Size %		
D_{60}	**D_{30}**	**D_{10}**
0.243	0.180	0.112

Coefficients	
C_u	**C_c**
2.160	1.189

Hydraulic Conductivity m/sec	1.5E-04

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH2-26, SS6*
Lab No.:	*152*	Depth:	*4.57-5.03m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	99.3
0.3	71.1
0.15	15.3
0.075	6.3

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	4.6
0.020	3.9
0.017	4.2
0.01	3.4
0.007	3.4
0.005	3.4
0.002	2.8
0.001	1.8
Gradation Proportions %	
Gravel	0.0
Sand	93.7
Silt	3.5
Clay	2.8

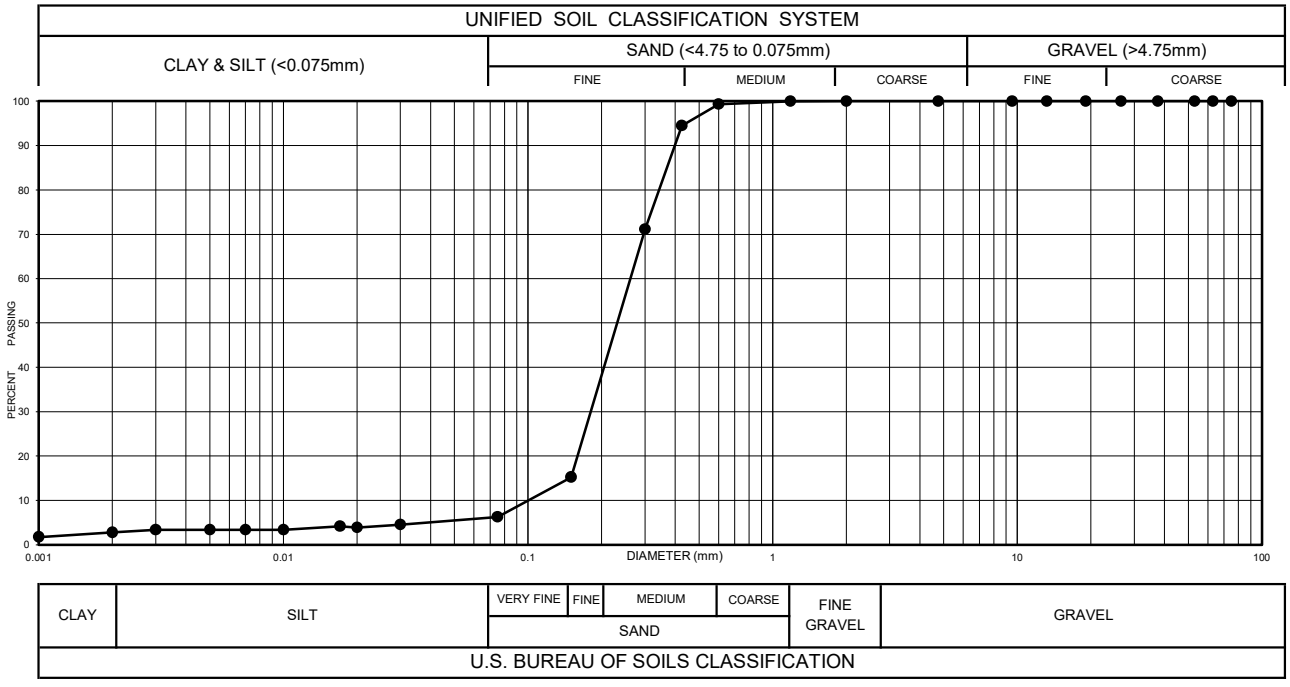
Soil Description	
SAND, trace Silt, trace Clay	

Effective Particle Size %		
D_{60}	**D_{30}**	**D_{10}**
0.270	0.190	0.106

Coefficients	
C_u	**C_c**
2.547	1.254

Hydraulic Conductivity m/sec	1.3E-04

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH3-26, SS6*
Lab No.:	*153*	Depth:	*4.57-5.03m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	99.9
0.6	99.5
0.3	70.6
0.15	13.1
0.075	5.6

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	4.7
0.020	4.0
0.017	4.3
0.01	4.3
0.007	3.4
0.005	3.4
0.002	2.8
0.001	1.8
Gradation Proportions %	
Gravel	0.0
Sand	94.4
Silt	2.8
Clay	2.8

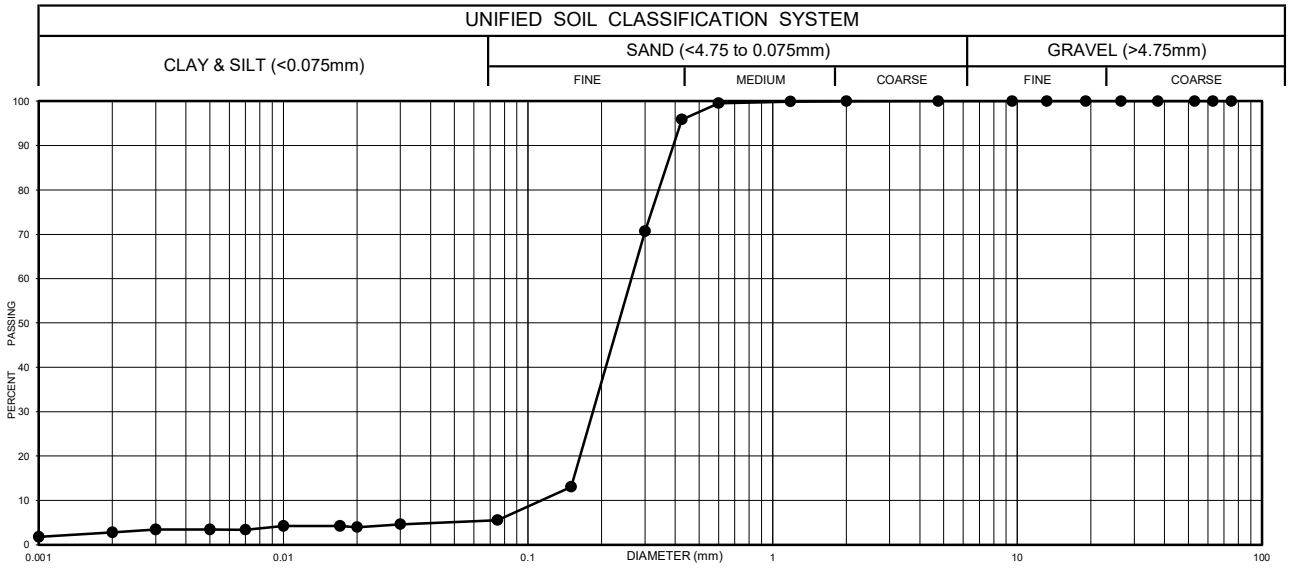
Soil Description	
SAND, trace Silt, trace Clay	

Effective Particle Size %		
D_{60}	**D_{30}**	**D_{10}**
0.272	0.194	0.119

Coefficients	
C_u	**C_c**
2.284	1.161

Hydraulic Conductivity m/sec	1.6E-04

Particle Size Distribution LS 702



CLAY	SILT	SAND				FINE GRAVEL	GRAVEL
		VERY FINE	FINE	MEDIUM	COARSE		

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Comments

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Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH4-26, SS7*
Lab No.:	*154*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	99.9
0.3	95.8
0.15	43.5
0.075	20.7

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	9.5
0.020	7.0
0.017	6.0
0.01	5.2
0.007	3.4
0.005	3.5
0.002	2.2
0.001	1.2
Gradation Proportions %	
Gravel	0.0
Sand	79.3
Silt	18.4
Clay	2.2

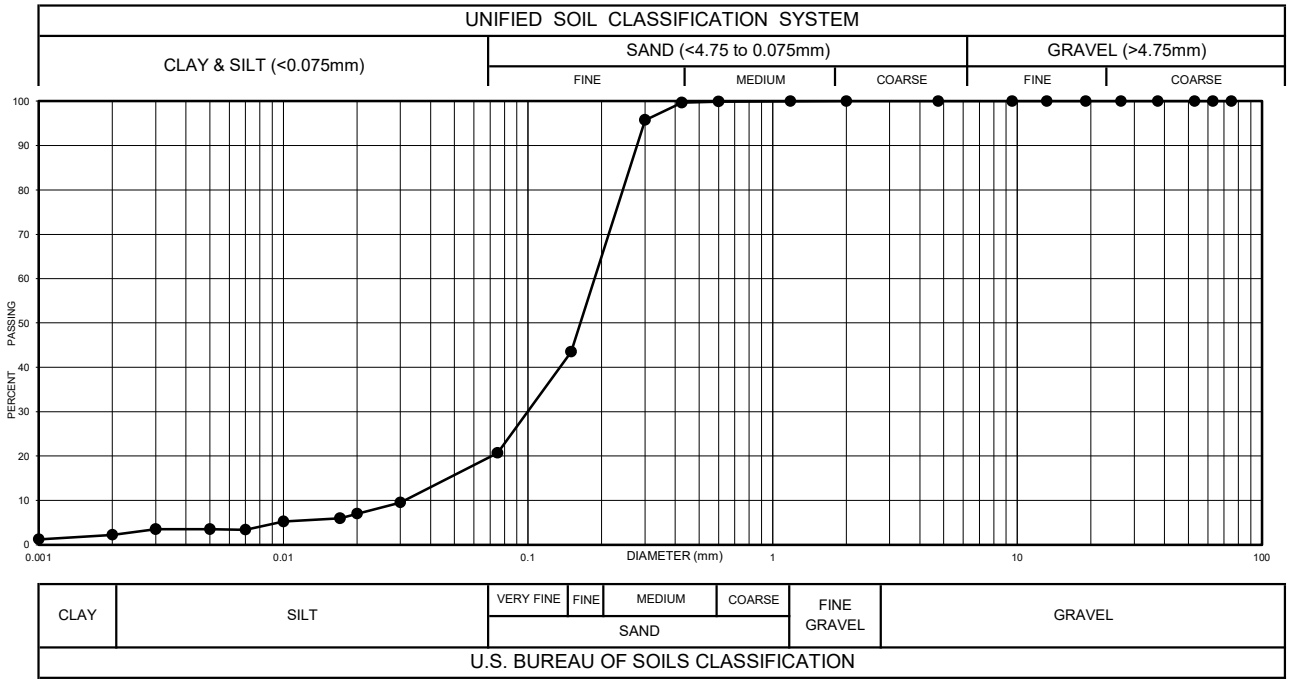
Soil Description	
SAND, some Silt, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.197	0.106	0.032

Coefficients	
C_u	C_c
6.198	1.776

Hydraulic Conductivity m/sec	5.5E-06

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH5-26, SS8*
Lab No.:	*155*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	100.0
0.3	98.5
0.15	87.1
0.075	43.2

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	6.0
0.020	5.7
0.017	6.1
0.01	5.8
0.007	5.0
0.005	4.2
0.002	3.3
0.001	2.3
Gradation Proportions %	
Gravel	0.0
Sand	56.8
Silt	39.9
Clay	3.3

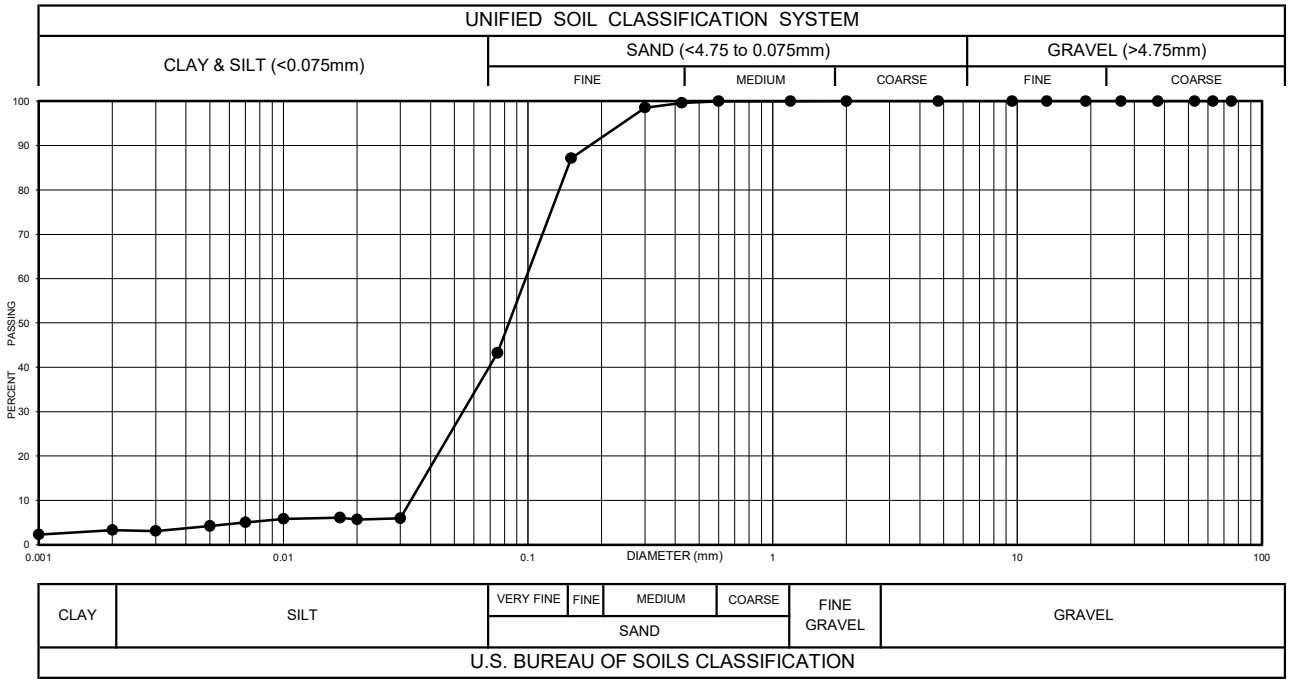
Soil Description	
SAND and SILT, trace Clay	

Effective Particle Size %		
D_{60}	**D_{30}**	**D_{10}**
0.104	0.059	0.035

Coefficients	
C_u	**C_c**
2.973	0.964

Hydraulic Conductivity m/sec	1.4E-05

Particle Size Distribution LS 702



Comments

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Reviewed By: _____

Kyle Hillar, C. Tech

GRIT ENGINEERING INC

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH6-26, SS8*
Lab No.:	*156*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis		Hydrometer Analysis	
Sieve Size (mm)	**% Passing**	**Diameter (mm)**	**% Passing**
53.0	100	0.030	3.9
37.5	100	0.020	3.2
26.5	100	0.017	3.5
19.00	100	0.01	3.5
13.2	100	0.007	3.5
9.5	100	0.005	2.6
4.75	100	0.002	1.7
2	100	0.001	1.2
1.18	100.0	**Gradation Proportions %**	
0.6	99.9	Gravel	0.0
0.3	89.3	Sand	93.1
0.15	24.0	Silt	5.1
0.075	6.9	Clay	1.7

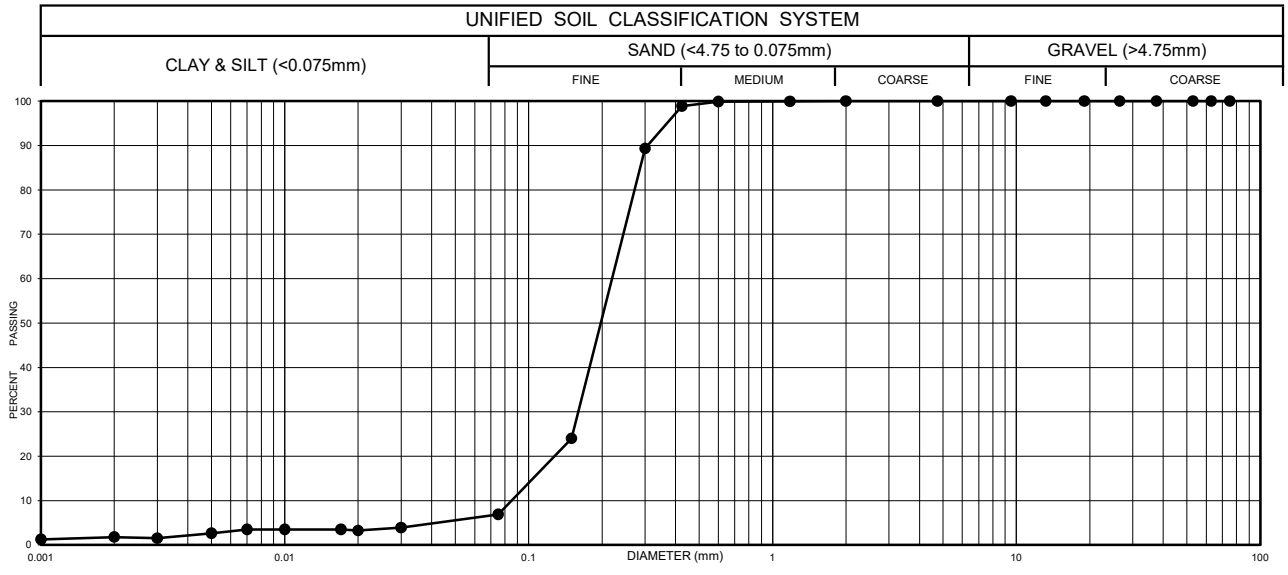
Soil Description	
SAND, trace Silt, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.233	0.164	0.089

Coefficients	
C_u	C_c
2.623	1.300

Hydraulic Conductivity m/sec	9.2E-05

Particle Size Distribution LS 702



CLAY	SILT	SAND				FINE GRAVEL	GRAVEL
		VERY FINE	FINE	MEDIUM	COARSE		

U.S. BUREAU OF SOILS CLASSIFICATION

Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH7-26, SS8*
Lab No.:	*157*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	100.0
0.3	99.6
0.15	66.9
0.075	40.6

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	20.5
0.020	18.6
0.017	15.6
0.01	11.1
0.007	8.5
0.005	6.8
0.002	4.4
0.001	2.9
Gradation Proportions %	
Gravel	0.0
Sand	59.4
Silt	36.2
Clay	4.4

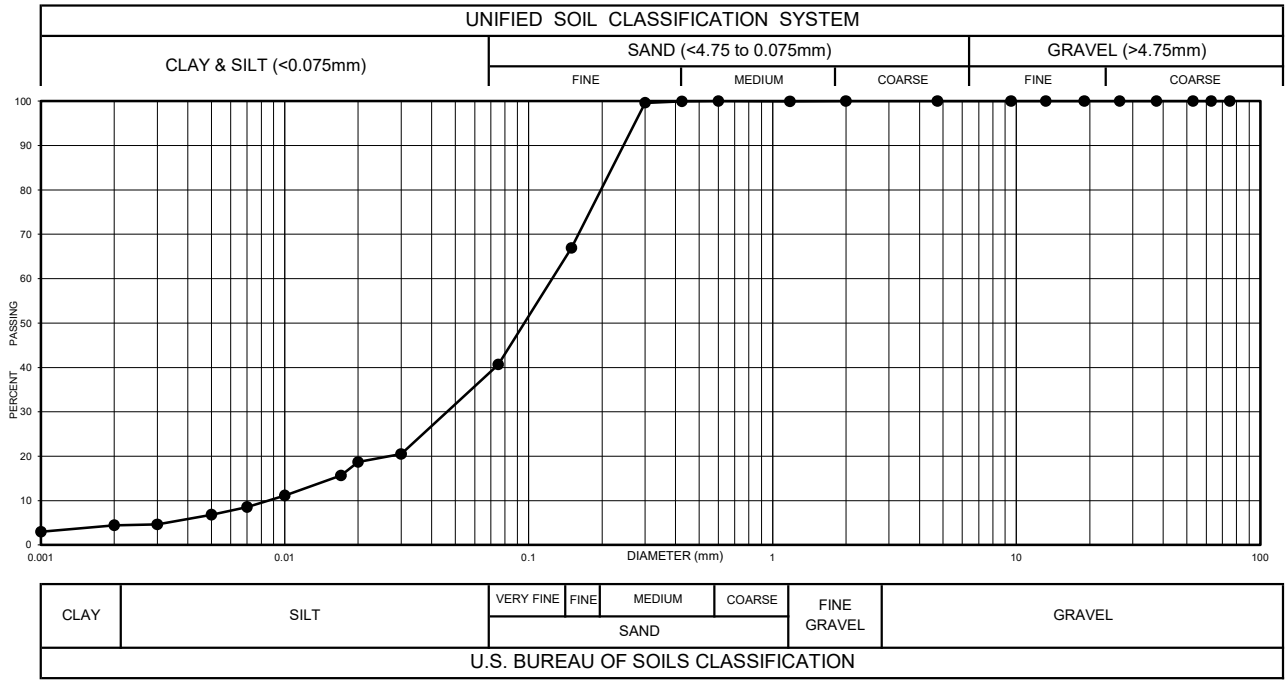
Soil Description	
SAND and SILT, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.130	0.051	0.009

Coefficients	
C_u	C_c
14.981	2.324

Hydraulic Conductivity m/sec	1.9E-07

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

GRIT ENGINEERING INC

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH8-26, SS8*
Lab No.:	*158*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis		Hydrometer Analysis	
Sieve Size (mm)	**% Passing**	**Diameter (mm)**	**% Passing**
53.0	100	0.030	3.4
37.5	100	0.020	4.2
26.5	100	0.017	3.6
19.00	100	0.01	3.4
13.2	100	0.007	3.4
9.5	100	0.005	3.4
4.75	100	0.002	2.5
2	100	0.001	1.8
1.18	100.0	**Gradation Proportions %**	
0.6	99.8	Gravel	0.0
0.3	99.1	Sand	83.7
0.15	61.1	Silt	13.8
0.075	16.3	Clay	2.5

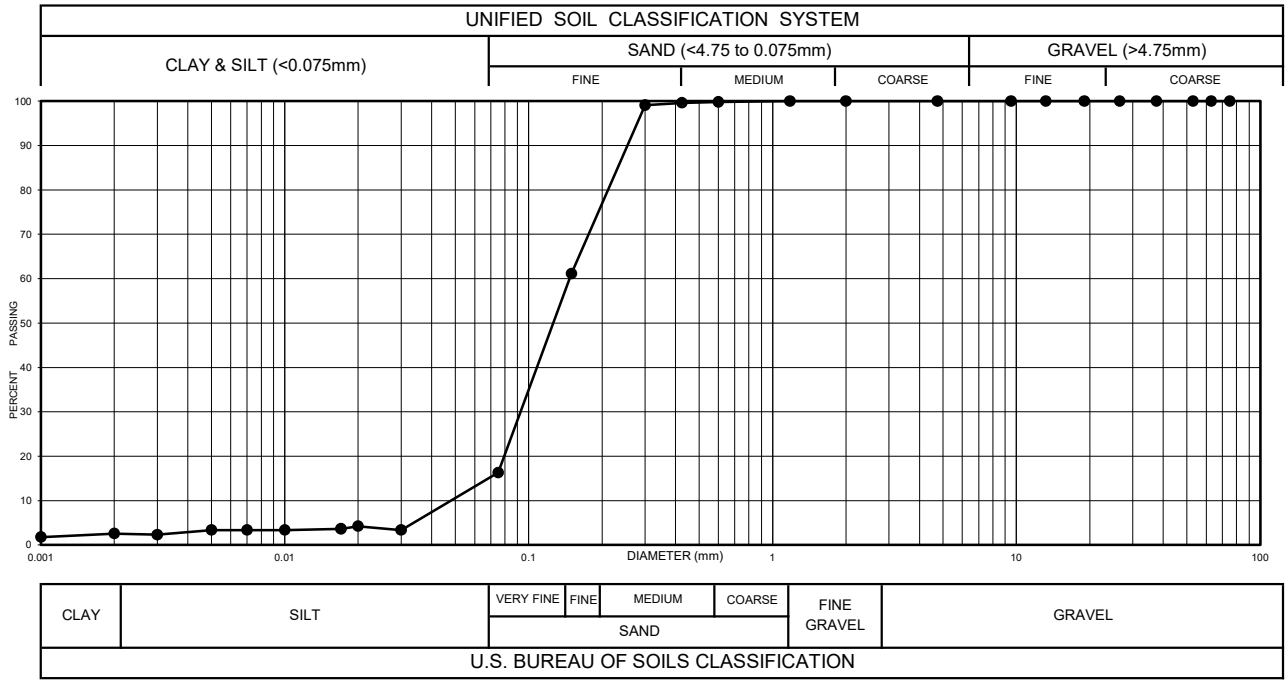
Soil Description	
SAND, some Silt, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.148	0.098	0.053

Coefficients	
C_u	C_c
2.787	1.219

Hydraulic Conductivity m/sec	3.3E-05

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH9-26, SS8*
Lab No.:	*159*	Depth:	*6.10-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	100.0
0.3	99.1
0.15	83.2
0.075	33.9

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	6.7
0.020	4.3
0.017	4.2
0.01	3.6
0.007	3.6
0.005	3.6
0.002	2.1
0.001	1.2
Gradation Proportions %	
Gravel	0.0
Sand	66.1
Silt	31.8
Clay	2.1

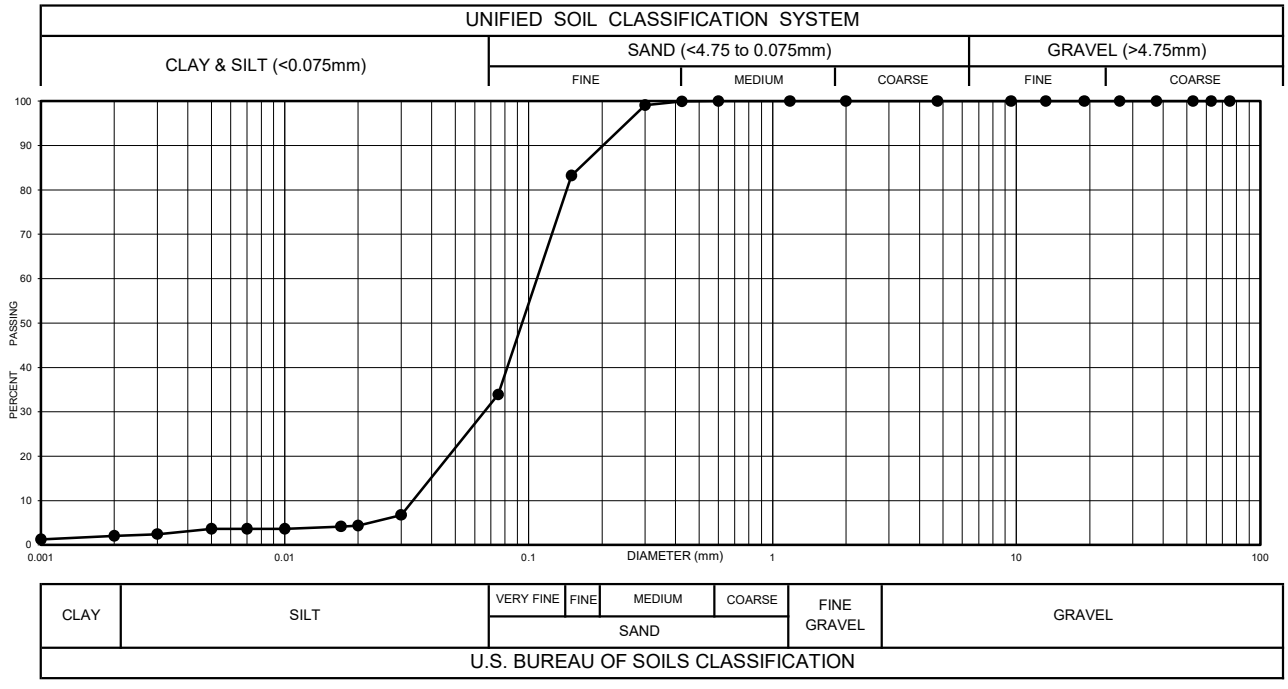
Soil Description	
SILTY SAND, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.115	0.069	0.035

Coefficients	
C_u	C_c
3.235	1.155

Hydraulic Conductivity m/sec	1.3E-05

Particle Size Distribution LS 702



Comments

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Reviewed By: _____

Kyle Hillar, C. Tech

GRIT ENGINEERING INC

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH10-26, SS7*
Lab No.:	*160*	Depth:	*4.57-5.03m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis		Hydrometer Analysis	
Sieve Size (mm)	**% Passing**	**Diameter (mm)**	**% Passing**
53.0	100	0.030	4.4
37.5	100	0.020	3.0
26.5	100	0.017	3.5
19.00	100	0.01	3.5
13.2	100	0.007	3.5
9.5	100	0.005	2.7
4.75	100	0.002	1.4
2	100	0.001	0.6
1.18	100.0	**Gradation Proportions %**	
0.6	99.9	Gravel	0.0
0.3	98.9	Sand	75.2
0.15	76.7	Silt	23.4
0.075	24.8	Clay	1.4

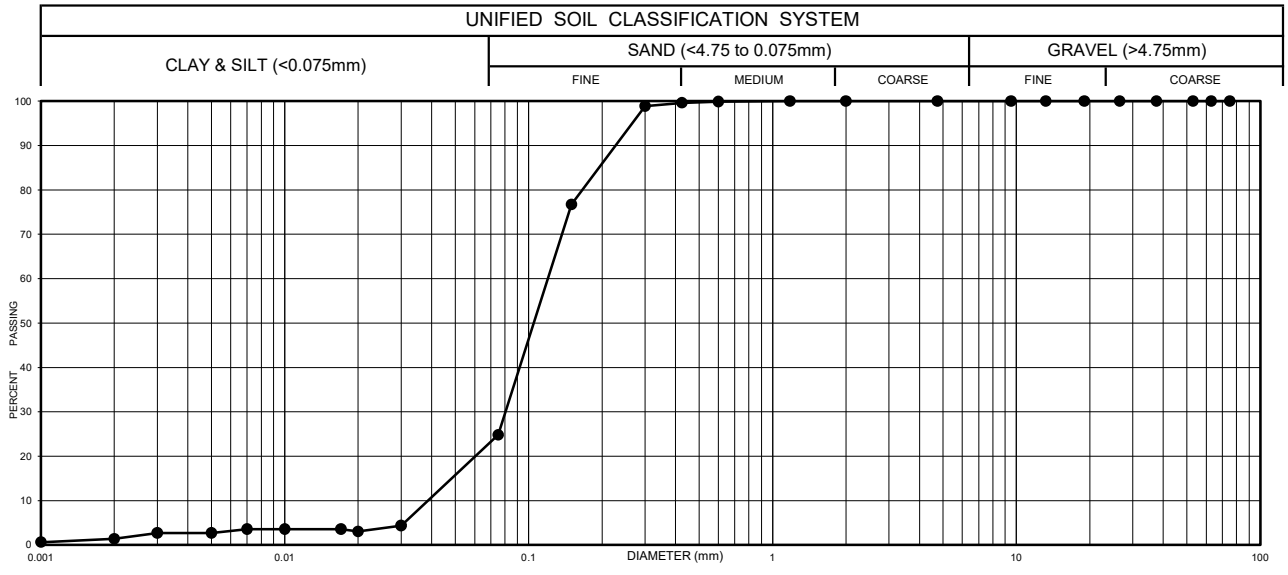
Soil Description	
SILTY SAND, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.126	0.083	0.042

Coefficients	
C_u	C_c
2.967	1.276

Hydraulic Conductivity m/sec	2.0E-05

Particle Size Distribution LS 702



CLAY	SILT	SAND				FINE GRAVEL	GRAVEL
		VERY FINE	FINE	MEDIUM	COARSE		

U.S. BUREAU OF SOILS CLASSIFICATION

Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH11-26, SS8*
Lab No.:	*161*	Depth:	*6.1-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis	
Sieve Size (mm)	**% Passing**
53.0	100
37.5	100
26.5	100
19.00	100
13.2	100
9.5	100
4.75	100
2	100
1.18	100.0
0.6	99.8
0.3	97.0
0.15	47.7
0.075	16.0

Hydrometer Analysis	
Diameter (mm)	**% Passing**
0.030	4.9
0.020	5.4
0.017	4.8
0.01	3.6
0.007	2.7
0.005	2.7
0.002	1.8
0.001	1.3
Gradation Proportions %	
Gravel	0.0
Sand	84.0
Silt	14.2
Clay	1.8

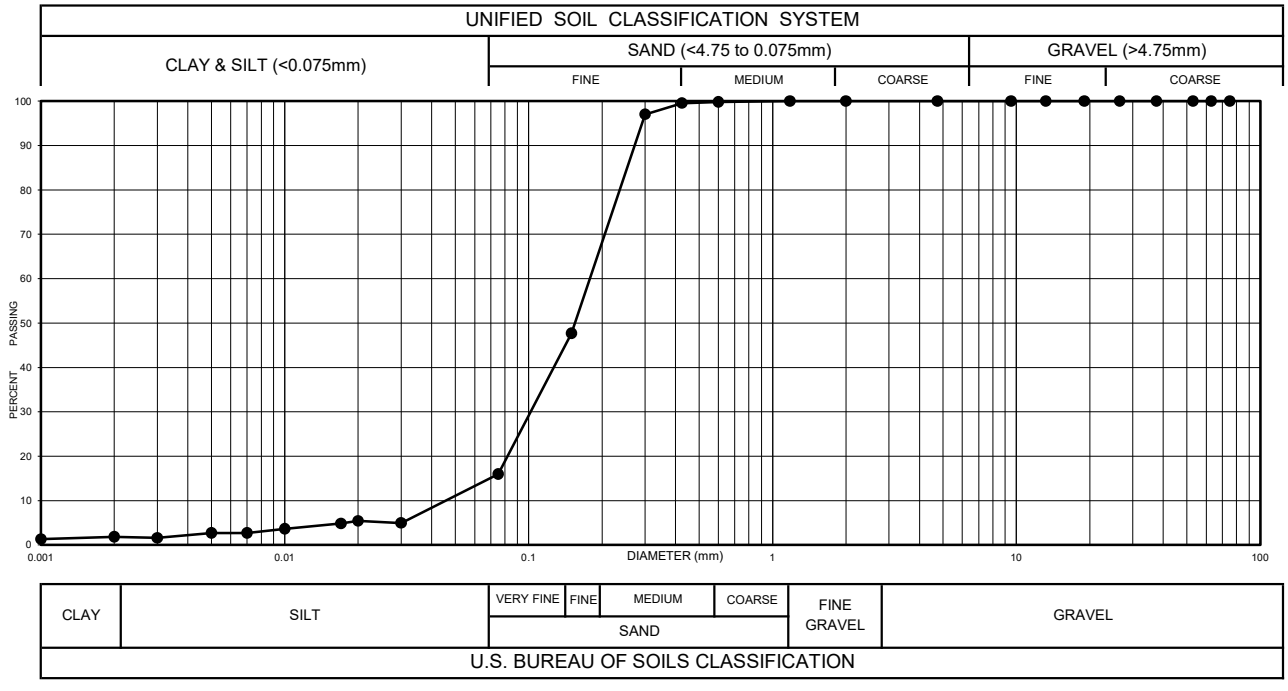
Soil Description	
SAND, some Silt, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.187	0.108	0.051

Coefficients	
C_u	C_c
3.701	1.233

Hydraulic Conductivity m/sec	2.4E-05

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

Gradation Analysis Report

Project Name	*6585 Highway 6 Subdivision*	Project No.:	*GE26-1576-1*
Client	*1052367 Ontario Ltd*	Sample ID:	*BH12-26, SS7*
Lab No.:	*162*	Depth:	*6.1-6.55m*
Sampled By:	*Shawn Baetz*	Date:	*2026-04-17,20,21*

Grain Size Analysis		Hydrometer Analysis	
Sieve Size (mm)	**% Passing**	**Diameter (mm)**	**% Passing**
53.0	100	0.030	6.2
37.5	100	0.020	4.8
26.5	100	0.017	4.7
19.00	100	0.01	3.6
13.2	100	0.007	3.6
9.5	100	0.005	3.6
4.75	100	0.002	2.0
2	100	0.001	1.3
1.18	100.0	**Gradation Proportions %**	
0.6	99.9	Gravel	0.0
0.3	93.8	Sand	81.7
0.15	42.2	Silt	16.3
0.075	18.3	Clay	2.0

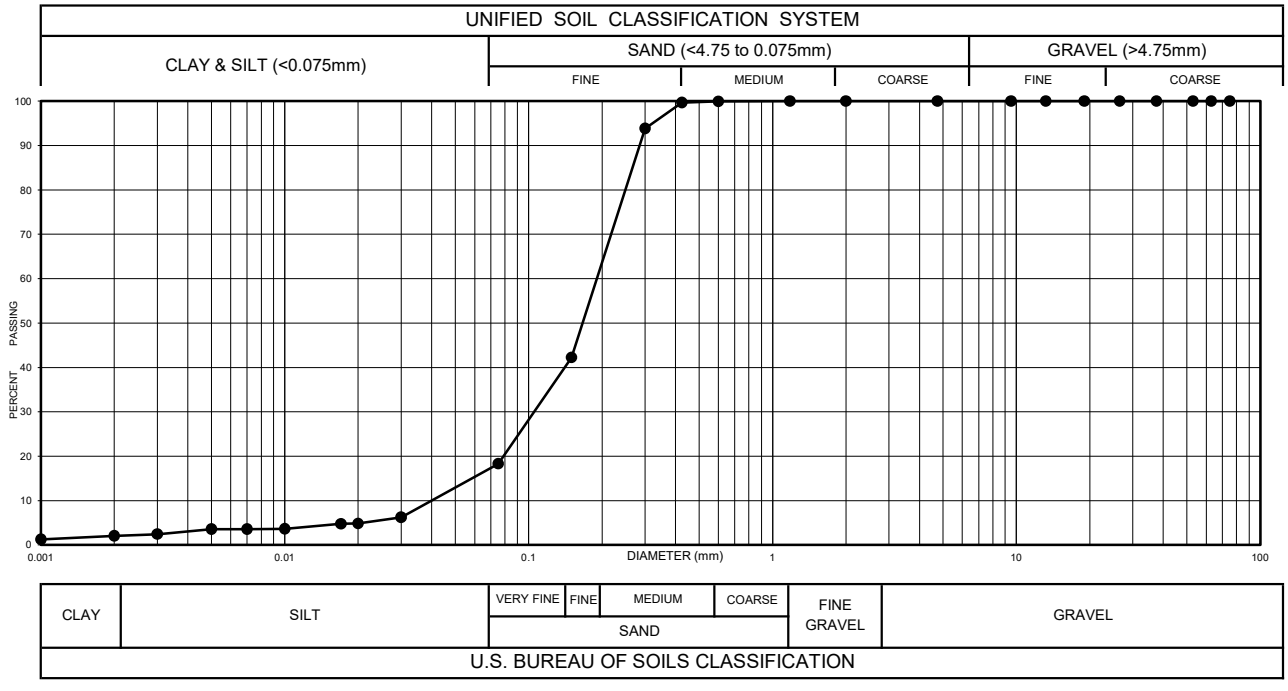
Soil Description	
SAND, some Silt, trace Clay	

Effective Particle Size %		
D_{60}	D_{30}	D_{10}
0.202	0.112	0.044

Coefficients	
C_u	C_c
4.561	1.404

Hydraulic Conductivity m/sec	1.4E-05

Particle Size Distribution LS 702



Comments

Kozeny Carman

Reviewed By: _____

Kyle Hillar, C. Tech

APPENDIX G: LABORATORY CERTIFICATES OF ANALYSIS

WT2610978

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	:	**WT2610978**			
Client	:	**Hydrogeology Consulting Services**	Laboratory	:	ALS Environmental - Waterloo
Contact	:	Chris Helmer	Account Manager	:	Emily Smith
Address	:	25 Water Street West Elora Ontario Canada N0B 1S0	Address	:	60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	905 550 0969	Telephone	:	+1 519 886 6910
Project	:	6585 Hwy 6, Fergus	Date Samples Received	:	04-May-2026 19:15
PO	:	----	Date Analysis Commenced	:	05-May-2026
C-O-C number	:	----	Issue Date	:	12-May-2026 15:21
Sampler	:	AR/KB			
Site	:	----			
Quote number	:	Standing Offer 2026			
No. of samples received	:	4			
No. of samples analysed	:	4			

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
MW2-26 ----	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2<100	1.87 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2<100	0.00204 mg/L	0.0009 mg/L
	Water	Copper, total	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.0108 mg/L	0.001 mg/L
	Water	Lead, total	Based on Hardness <30 mg/L	ONPWQO	IPWQOT2<100	0.00940 mg/L	0.001 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2<100	0.135 mg/L	0.01 mg/L
	Water	Zinc, total		ONPWQO	IPWQOT2<100	0.0462 mg/L	0.02 mg/L

	Water	Copper, dissolved	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.00184 mg/L	0.001 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2<100	<0.050 mg/L	0.01 mg/L
	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2>100	1.87 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2>100	0.00204 mg/L	0.0009 mg/L
	Water	Copper, total	Based on Hardness > 20 mg/L	ONPWQO	IPWQOT2>100	0.0108 mg/L	0.005 mg/L
	Water	Lead, total	Based on Alkalinity >80 mg/L	ONPWQO	IPWQOT2>100	0.00940 mg/L	0.005 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2>100	0.135 mg/L	0.01 mg/L
	Water	Zinc, total		ONPWQO	IPWQOT2>100	0.0462 mg/L	0.02 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2>100	<0.050 mg/L	0.01 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2<100	0.00204 mg/L	0.0009 mg/L
	Water	Copper, total		ONPWQO	PWQOT2<100	0.0108 mg/L	0.005 mg/L
	Water	Iron, total		ONPWQO	PWQOT2<100	3.71 mg/L	0.3 mg/L
	Water	Lead, total	Based on Alkalinity <20 mg/L	ONPWQO	PWQOT2<100	0.00940 mg/L	0.005 mg/L
	Water	Zinc, total		ONPWQO	PWQOT2<100	0.0462 mg/L	0.03 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2>100	0.00204 mg/L	0.0009 mg/L
	Water	Copper, total		ONPWQO	PWQOT2>100	0.0108 mg/L	0.005 mg/L
	Water	Iron, total		ONPWQO	PWQOT2>100	3.71 mg/L	0.3 mg/L
	Water	Zinc, total		ONPWQO	PWQOT2>100	0.0462 mg/L	0.03 mg/L
MW5-26 ----	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2<100	2.19 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2<100	0.00177 mg/L	0.0009 mg/L
	Water	Copper, total	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.00801 mg/L	0.001 mg/L
	Water	Lead, total	Based on Hardness <30 mg/L	ONPWQO	IPWQOT2<100	0.00672 mg/L	0.001 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2<100	0.527 mg/L	0.01 mg/L
	Water	Zinc, total		ONPWQO	IPWQOT2<100	0.0393 mg/L	0.02 mg/L
	Water	Copper, dissolved	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.00183 mg/L	0.001 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2<100	<0.050 mg/L	0.01 mg/L
	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2>100	2.19 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2>100	0.00177 mg/L	0.0009 mg/L

	Water	Copper, total	Based on Hardness > 20 mg/L	ONPWQO	IPWQOT2>100	0.00801 mg/L	0.005 mg/L
	Water	Lead, total	Based on Alkalinity >80 mg/L	ONPWQO	IPWQOT2>100	0.00672 mg/L	0.005 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2>100	0.527 mg/L	0.01 mg/L
	Water	Zinc, total		ONPWQO	IPWQOT2>100	0.0393 mg/L	0.02 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2>100	<0.050 mg/L	0.01 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2<100	0.00177 mg/L	0.0009 mg/L
	Water	Copper, total		ONPWQO	PWQOT2<100	0.00801 mg/L	0.005 mg/L
	Water	Iron, total		ONPWQO	PWQOT2<100	3.94 mg/L	0.3 mg/L
	Water	Lead, total	Based on Alkalinity <20 mg/L	ONPWQO	PWQOT2<100	0.00672 mg/L	0.005 mg/L
	Water	Zinc, total		ONPWQO	PWQOT2<100	0.0393 mg/L	0.03 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2>100	0.00177 mg/L	0.0009 mg/L
	Water	Copper, total		ONPWQO	PWQOT2>100	0.00801 mg/L	0.005 mg/L
	Water	Iron, total		ONPWQO	PWQOT2>100	3.94 mg/L	0.3 mg/L
	Water	Zinc, total		ONPWQO	PWQOT2>100	0.0393 mg/L	0.03 mg/L
MW8-26 ----	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2<100	70.8 mg/L	0.075 mg/L
	Water	Arsenic, total		ONPWQO	IPWQOT2<100	0.0302 mg/L	0.005 mg/L
	Water	Cadmium, total	Based on Hardness < 100 mg/L	ONPWQO	IPWQOT2<100	0.00198 mg/L	0.0001 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2<100	0.0627 mg/L	0.0009 mg/L
	Water	Copper, total	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.200 mg/L	0.001 mg/L
	Water	Lead, total	Based on Hardness <30 mg/L	ONPWQO	IPWQOT2<100	0.156 mg/L	0.001 mg/L
	Water	Nickel, total		ONPWQO	IPWQOT2<100	0.115 mg/L	0.025 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2<100	8.85 mg/L	0.01 mg/L
	Water	Silver, total		ONPWQO	IPWQOT2<100	0.000308 mg/L	0.0001 mg/L
	Water	Thallium, total		ONPWQO	IPWQOT2<100	0.000829 mg/L	0.0003 mg/L
	Water	Vanadium, total		ONPWQO	IPWQOT2<100	0.112 mg/L	0.006 mg/L
	Water	Zinc, total		ONPWQO	IPWQOT2<100	0.654 mg/L	0.02 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2<100	<0.050 mg/L	0.01 mg/L
	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2>100	70.8 mg/L	0.075 mg/L

Water	Arsenic, total		ONPWQO	IPWQOT2>100	0.0302 mg/L	0.005 mg/L
Water	Cadmium, total	Based on Hardness > 100 mg/L	ONPWQO	IPWQOT2>100	0.00198 mg/L	0.0005 mg/L
Water	Cobalt, total		ONPWQO	IPWQOT2>100	0.0627 mg/L	0.0009 mg/L
Water	Copper, total	Based on Hardness > 20 mg/L	ONPWQO	IPWQOT2>100	0.200 mg/L	0.005 mg/L
Water	Lead, total	Based on Alkalinity >80 mg/L	ONPWQO	IPWQOT2>100	0.156 mg/L	0.005 mg/L
Water	Nickel, total		ONPWQO	IPWQOT2>100	0.115 mg/L	0.025 mg/L
Water	Phosphorus, total		ONPWQO	IPWQOT2>100	8.85 mg/L	0.01 mg/L
Water	Silver, total		ONPWQO	IPWQOT2>100	0.000308 mg/L	0.0001 mg/L
Water	Thallium, total		ONPWQO	IPWQOT2>100	0.000829 mg/L	0.0003 mg/L
Water	Vanadium, total		ONPWQO	IPWQOT2>100	0.112 mg/L	0.006 mg/L
Water	Zinc, total		ONPWQO	IPWQOT2>100	0.654 mg/L	0.02 mg/L
Water	Phosphorus, dissolved		ONPWQO	IPWQOT2>100	<0.050 mg/L	0.01 mg/L
Water	Cadmium, total		ONPWQO	PWQOT2<100	0.00198 mg/L	0.0002 mg/L
Water	Cobalt, total		ONPWQO	PWQOT2<100	0.0627 mg/L	0.0009 mg/L
Water	Copper, total		ONPWQO	PWQOT2<100	0.200 mg/L	0.005 mg/L
Water	Iron, total		ONPWQO	PWQOT2<100	134 mg/L	0.3 mg/L
Water	Lead, total	Based on Alkalinity <20 mg/L	ONPWQO	PWQOT2<100	0.156 mg/L	0.005 mg/L
Water	Nickel, total		ONPWQO	PWQOT2<100	0.115 mg/L	0.025 mg/L
Water	Silver, total		ONPWQO	PWQOT2<100	0.000308 mg/L	0.0001 mg/L
Water	Zinc, total		ONPWQO	PWQOT2<100	0.654 mg/L	0.03 mg/L
Water	Cadmium, total		ONPWQO	PWQOT2>100	0.00198 mg/L	0.0002 mg/L
Water	Cobalt, total		ONPWQO	PWQOT2>100	0.0627 mg/L	0.0009 mg/L
Water	Copper, total		ONPWQO	PWQOT2>100	0.200 mg/L	0.005 mg/L
Water	Iron, total		ONPWQO	PWQOT2>100	134 mg/L	0.3 mg/L
Water	Lead, total	Based on Alkalinity >80 mg/L	ONPWQO	PWQOT2>100	0.156 mg/L	0.025 mg/L
Water	Nickel, total		ONPWQO	PWQOT2>100	0.115 mg/L	0.025 mg/L
Water	Silver, total		ONPWQO	PWQOT2>100	0.000308 mg/L	0.0001 mg/L
Water	Zinc, total		ONPWQO	PWQOT2>100	0.654 mg/L	0.03 mg/L

MW10-26 ----	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2<100	1.37 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2<100	0.00119 mg/L	0.0009 mg/L
	Water	Copper, total	Based on Hardness < 20 mg/L	ONPWQO	IPWQOT2<100	0.00410 mg/L	0.001 mg/L
	Water	Lead, total	Based on Hardness <30 mg/L	ONPWQO	IPWQOT2<100	0.00408 mg/L	0.001 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2<100	0.087 mg/L	0.01 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2<100	<0.050 mg/L	0.01 mg/L
	Water	Aluminum, total	Based on pH between 6.5 and 9.0	ONPWQO	IPWQOT2>100	1.37 mg/L	0.075 mg/L
	Water	Cobalt, total		ONPWQO	IPWQOT2>100	0.00119 mg/L	0.0009 mg/L
	Water	Phosphorus, total		ONPWQO	IPWQOT2>100	0.087 mg/L	0.01 mg/L
	Water	Phosphorus, dissolved		ONPWQO	IPWQOT2>100	<0.050 mg/L	0.01 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2<100	0.00119 mg/L	0.0009 mg/L
	Water	Iron, total		ONPWQO	PWQOT2<100	2.23 mg/L	0.3 mg/L
	Water	Cobalt, total		ONPWQO	PWQOT2>100	0.00119 mg/L	0.0009 mg/L
	Water	Iron, total		ONPWQO	PWQOT2>100	2.23 mg/L	0.3 mg/L

Key:

ONPWQO	Ontario PWQO (Provincial Water Quality Objectives, JULY, 1994)
IPWQOT2<100	Surface Water T2 Interim PWQOs (Hardness < 100 mg/L)
IPWQOT2>100	Surface Water T2 Interim PWQOs (Hardness > 100 mg/L)
PWQOT2<100	Surface Water T2 PWQOs (Hardness < 100 mg/L)
PWQOT2>100	Surface Water T2 PWQOs (Hardness > 100 mg/L)

General Comments

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

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

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

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

Lavender shading is applied where the LOR itself is greater than the Guideline Upper Limit (or Lower than the Guideline Lower Limit, if applicable).

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

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
TMV	Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.

Analytical Results

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----				
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	ONPWQO IPWQOT2<100	ONPWQO IPWQOT2>100	ONPWQO PWQOT2<100	ONPWQO PWQOT2>100
Physical Tests												
Colour, apparent	----	E330/WT	2.0	CU	331	328	1090	266	----	----	----	----
Conductivity	----	E100/WT	2.0	µS/cm	1020	556	493	500	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	342	682	6850	377	----	----	----	----
pH	----	E108/WT	0.10	pH units	7.95	7.94	7.88	7.86	----	----	6.5 - 8.5 pH units	6.5 - 8.5 pH units
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L	640 DLDS	408 DLDS	793 DLDS	385 DLDS	----	----	----	----
Turbidity	----	E121/WT	0.10	NTU	89.7	198	>4000 TMV	67.9	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	2.0	mg/L	328	360	3910	312	----	----	----	----
Anions and Nutrients												
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0067	0.0144	0.0303	0.0112	----	----	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	135 DLDS	6.47	8.05	9.45	----	----	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	<0.100 DLDS	0.069	0.042	0.045	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	6.97 DLDS	3.85	2.83	5.09	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	<0.010	<0.010	<0.010	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	38.9 DLDS	22.6	1.26	3.00	----	----	----	----
Total Metals												
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	1.87	2.19	70.8 DLHC	1.37	0.075 mg/L	0.075 mg/L	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	0.00018	<0.00010	<0.00100 DLHC	0.00011	0.02 mg/L	0.02 mg/L	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00222	0.00187	0.0302 DLHC	0.00080	0.005 mg/L	0.005 mg/L	0.1 mg/L	0.1 mg/L
Barium, total	7440-39-3	E420/WT	0.00010	mg/L	0.0331	0.0417	0.372 DLHC	0.0194	----	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L	0.000091	0.000110	0.00370 DLHC	0.000065	----	----	1.1 mg/L	0.011 mg/L
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L	<0.000050	<0.000050	0.000789 DLHC	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L	0.013	0.020	<0.100 DLHC	<0.010	0.2 mg/L	0.2 mg/L	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L	0.0000821	0.0000833	0.00198 DLHC	0.0000378	0.0001 mg/L	0.0005 mg/L	0.0002 mg/L	0.0002 mg/L
Calcium, total	7440-70-2	E420/WT	0.050	mg/L	106	202	2130 DLHC	112	----	----	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L	0.000139	0.000122	0.00402 DLHC	0.000137	----	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L	0.00333	0.00322	0.0847 DLHC	0.00273	----	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L	0.00204	0.00177	0.0627 DLHC	0.00119	0.0009 mg/L	0.0009 mg/L	0.0009 mg/L	0.0009 mg/L
Copper, total	7440-50-8	E420/WT	0.00050	mg/L	0.0108	0.00801	0.200 DLHC	0.00410	0.001 mg/L	0.005 mg/L	0.005 mg/L	0.005 mg/L
Iron, total	7439-89-6	E420/WT	0.010	mg/L	3.71	3.94	134 DLHC	2.23	----	----	0.3 mg/L	0.3 mg/L
Lead, total	7439-92-1	E420/WT	0.000050	mg/L	0.00940	0.00672	0.156 DLHC	0.00408	0.001 mg/L	0.005 mg/L	0.005 mg/L	0.025 mg/L

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----				
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	ONPWQO IPWQOT2<100	ONPWQO IPWQOT2>100	ONPWQO PWQOT2<100	ONPWQO PWQOT2>100
Total Metals												
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L	0.0034	0.0031	0.104 DLHC	0.0016	----	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	18.7	43.1	373 DLHC	23.7	----	----	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L	0.148	0.295	7.65 DLHC	0.107	----	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L	0.00356	0.000732	<0.000500 DLHC	0.000408	0.04 mg/L	0.04 mg/L	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00384	0.00327	0.115 DLHC	0.00208	0.025 mg/L	0.025 mg/L	0.025 mg/L	0.025 mg/L
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L	0.135	0.527	8.85 DLHC	0.087	0.01 mg/L	0.01 mg/L	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	2.25	20.8	8.16 DLHC	1.13	----	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L	0.00269	0.00212	0.0586 DLHC	0.00239	----	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L	0.000319	0.000263	<0.000500 DLHC	0.000111	0.1 mg/L	----	0.1 mg/L	0.1 mg/L
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	6.62	7.43	79.4 DLHC	6.73	----	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	0.000018	0.000013	0.000308 DLHC	0.000029	0.0001 mg/L	0.0001 mg/L	0.0001 mg/L	0.0001 mg/L
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	129	17.2	6.10 DLHC	2.97	----	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.290	0.357	2.90 DLHC	0.170	----	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	13.9	7.93	<5.00 DLHC	1.11	----	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00200 DLHC	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	0.000043	0.000040	0.000829 DLHC	0.000021	0.0003 mg/L	0.0003 mg/L	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	0.00091	0.00123	0.0315 DLHC	0.00041	----	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	0.00015	0.00016	<0.00100 DLHC	0.00023	----	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.0566	0.0912	0.950 DLHC	0.0463	----	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00100 DLHC	<0.00010	0.03 mg/L	0.03 mg/L	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.00130	0.000713	0.00438 DLHC	0.000272	0.005 mg/L	0.005 mg/L	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	0.00383	0.00461	0.112 DLHC	0.00307	0.006 mg/L	0.006 mg/L	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0462	0.0393	0.654 DLHC	0.0196	0.02 mg/L	0.02 mg/L	0.03 mg/L	0.03 mg/L
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	0.00073	0.00098	0.00287 DLHC	0.00055	0.004 mg/L	0.004 mg/L	----	----
Dissolved Metals												
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L	0.0034	0.0031	0.0024	0.0054	0.075 mg/L	0.075 mg/L	----	----
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L	0.00012	<0.00010	<0.00010	<0.00010	0.02 mg/L	0.02 mg/L	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L	0.00041	0.00021	0.00013	0.00024	0.005 mg/L	0.005 mg/L	0.1 mg/L	0.1 mg/L
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L	0.0235	0.0304	0.00996	0.0120	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	----	----	1.1 mg/L	0.011 mg/L
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L	0.011	0.017	<0.010	<0.010	0.2 mg/L	0.2 mg/L	----	----

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----				
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	ONPWQO IPWQOT2<100	ONPWQO IPWQOT2>100	ONPWQO PWQOT2<100	ONPWQO PWQOT2>100
Dissolved Metals												
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L	0.0000153	0.0000072	<0.0000050	0.0000092	0.0001 mg/L	0.0005 mg/L	0.0002 mg/L	0.0002 mg/L
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L	85.8	87.4	93.9	95.3	----	----	----	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L	<0.00050	<0.00050	0.00054	<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L	0.00016	<0.00010	<0.00010	0.00020	0.0009 mg/L	0.0009 mg/L	0.0009 mg/L	0.0009 mg/L
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L	0.00184	0.00183	0.00061	0.00078	0.001 mg/L	0.005 mg/L	0.005 mg/L	0.005 mg/L
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----	----	0.3 mg/L	0.3 mg/L
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.001 mg/L	0.005 mg/L	0.005 mg/L	0.025 mg/L
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L	0.0023	<0.0010	<0.0010	<0.0010	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L	17.4	20.6	22.9	23.1	----	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L	0.0186	0.00288	0.00628	0.0395	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L	0.00373	0.000656	0.000122	0.000348	0.04 mg/L	0.04 mg/L	----	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L	0.00093	<0.00050	<0.00050	<0.00050	0.025 mg/L	0.025 mg/L	0.025 mg/L	0.025 mg/L
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	0.01 mg/L	0.01 mg/L	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L	1.89	20.9	0.595	0.730	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L	0.00066	0.00058	0.00027	0.00033	----	----	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L	0.000347	0.000293	0.000098	0.000133	0.1 mg/L	----	0.1 mg/L	0.1 mg/L
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L	3.91	4.64	5.54	4.82	----	----	----	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.0001 mg/L	0.0001 mg/L	0.0001 mg/L	0.0001 mg/L
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L	130	16.6	3.07	3.04	----	----	----	----
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L	0.271	0.214	0.147	0.150	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L	15.2	8.87	0.51	1.20	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L	0.000012	<0.000010	<0.000010	<0.000010	0.0003 mg/L	0.0003 mg/L	----	----
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.03 mg/L	0.03 mg/L	----	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L	0.00109	0.000435	0.000152	0.000227	0.005 mg/L	0.005 mg/L	----	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.006 mg/L	0.006 mg/L	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L	0.0067	0.0048	<0.0010	0.0040	0.02 mg/L	0.02 mg/L	0.03 mg/L	0.03 mg/L

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----	ONPWQO IPWQOT2<100	ONPWQO IPWQOT2>100	ONPWQO PWQOT2<100	ONPWQO PWQOT2>100
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004				
Dissolved Metals												
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	0.004 mg/L	0.004 mg/L	----	----
Dissolved metals filtration location	----	EP421/WT	-	-	Laboratory	Laboratory	Laboratory	Laboratory	----	----	----	----

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

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----	----	----	----	----
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	---- ----	---- ----	---- ----	---- ----
Physical Tests												
Colour, apparent	----	E330/WT	2.0	CU	331	328	1090	266	----	----	----	----
Conductivity	----	E100/WT	2.0	µS/cm	1020	556	493	500	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	342	682	6850	377	----	----	----	----
pH	----	E108/WT	0.10	pH units	7.95	7.94	7.88	7.86	----	----	----	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L	640 DLDS	408 DLDS	793 DLDS	385 DLDS	----	----	----	----
Turbidity	----	E121/WT	0.10	NTU	89.7	198	>4000 TMV	67.9	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	2.0	mg/L	328	360	3910	312	----	----	----	----
Anions and Nutrients												
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0067	0.0144	0.0303	0.0112	----	----	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	135 DLDS	6.47	8.05	9.45	----	----	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	<0.100 DLDS	0.069	0.042	0.045	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	6.97 DLDS	3.85	2.83	5.09	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	<0.010	<0.010	<0.010	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	38.9 DLDS	22.6	1.26	3.00	----	----	----	----
Total Metals												
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	1.87	2.19	70.8 DLHC	1.37	----	----	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	0.00018	<0.00010	<0.00100 DLHC	0.00011	----	----	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00222	0.00187	0.0302 DLHC	0.00080	----	----	----	----
Barium, total	7440-39-3	E420/WT	0.00010	mg/L	0.0331	0.0417	0.372 DLHC	0.0194	----	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L	0.000091	0.000110	0.00370 DLHC	0.000065	----	----	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L	<0.000050	<0.000050	0.000789 DLHC	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L	0.013	0.020	<0.100 DLHC	<0.010	----	----	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L	0.0000821	0.0000833	0.00198 DLHC	0.0000378	----	----	----	----
Calcium, total	7440-70-2	E420/WT	0.050	mg/L	106	202	2130 DLHC	112	----	----	----	----

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----	----	----	----	----
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40	----	----	----	----
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	----	----	----	----
Total Metals												
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L	0.000139	0.000122	0.00402 DLHC	0.000137	----	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L	0.00333	0.00322	0.0847 DLHC	0.00273	----	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L	0.00204	0.00177	0.0627 DLHC	0.00119	----	----	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L	0.0108	0.00801	0.200 DLHC	0.00410	----	----	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L	3.71	3.94	134 DLHC	2.23	----	----	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L	0.00940	0.00672	0.156 DLHC	0.00408	----	----	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L	0.0034	0.0031	0.104 DLHC	0.0016	----	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	18.7	43.1	373 DLHC	23.7	----	----	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L	0.148	0.295	7.65 DLHC	0.107	----	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L	0.00356	0.000732	<0.000500 DLHC	0.000408	----	----	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00384	0.00327	0.115 DLHC	0.00208	----	----	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L	0.135	0.527	8.85 DLHC	0.087	----	----	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	2.25	20.8	8.16 DLHC	1.13	----	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L	0.00269	0.00212	0.0586 DLHC	0.00239	----	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L	0.000319	0.000263	<0.000500 DLHC	0.000111	----	----	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	6.62	7.43	79.4 DLHC	6.73	----	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	0.000018	0.000013	0.000308 DLHC	0.000029	----	----	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	129	17.2	6.10 DLHC	2.97	----	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.290	0.357	2.90 DLHC	0.170	----	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	13.9	7.93	<5.00 DLHC	1.11	----	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00200 DLHC	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	0.000043	0.000040	0.000829 DLHC	0.000021	----	----	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	0.00091	0.00123	0.0315 DLHC	0.00041	----	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	0.00015	0.00016	<0.00100 DLHC	0.00023	----	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.0566	0.0912	0.950 DLHC	0.0463	----	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00100 DLHC	<0.00010	----	----	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.00130	0.000713	0.00438 DLHC	0.000272	----	----	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	0.00383	0.00461	0.112 DLHC	0.00307	----	----	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0462	0.0393	0.654 DLHC	0.0196	----	----	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	0.00073	0.00098	0.00287 DLHC	0.00055	----	----	----	----
Dissolved Metals												
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L	0.0034	0.0031	0.0024	0.0054	----	----	----	----

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----	----	----	----	----
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	----	----	----	----
Dissolved Metals												
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L	0.00012	<0.00010	<0.00010	<0.00010	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L	0.00041	0.00021	0.00013	0.00024	----	----	----	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L	0.0235	0.0304	0.00996	0.0120	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L	0.011	0.017	<0.010	<0.010	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L	0.0000153	0.0000072	<0.0000050	0.0000092	----	----	----	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L	85.8	87.4	93.9	95.3	----	----	----	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L	<0.00050	<0.00050	0.00054	<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L	0.00016	<0.00010	<0.00010	0.00020	----	----	----	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L	0.00184	0.00183	0.00061	0.00078	----	----	----	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----	----	----	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L	0.0023	<0.0010	<0.0010	<0.0010	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L	17.4	20.6	22.9	23.1	----	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L	0.0186	0.00288	0.00628	0.0395	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L	0.00373	0.000656	0.000122	0.000348	----	----	----	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L	0.00093	<0.00050	<0.00050	<0.00050	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L	1.89	20.9	0.595	0.730	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L	0.00066	0.00058	0.00027	0.00033	----	----	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L	0.000347	0.000293	0.000098	0.000133	----	----	----	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L	3.91	4.64	5.54	4.82	----	----	----	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L	130	16.6	3.07	3.04	----	----	----	----
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L	0.271	0.214	0.147	0.150	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L	15.2	8.87	0.51	1.20	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L	0.000012	<0.000010	<0.000010	<0.000010	----	----	----	----
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----

SubMatrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW2-26 ----	MW5-26 ----	MW8-26 ----	MW10-26 ----	----	----	----	----
					Client sampling date / time: 04-May-2026 14:25	04-May-2026 13:45	04-May-2026 15:10	04-May-2026 15:40				
					WT2610978-001	WT2610978-002	WT2610978-003	WT2610978-004	----	----	----	----
Dissolved Metals												
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L	0.00109	0.000435	0.000152	0.000227	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L	0.0067	0.0048	<0.0010	0.0040	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	----	----	----
Dissolved metals filtration location	----	EP421/WT	-	-	Laboratory	Laboratory	Laboratory	Laboratory	----	----	----	----

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

ALS Canada Ltd.

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Quality Control Interpretive Report

Work Order	:	**WT2610978**			
Client	:	Hydrogeology Consulting Services	Laboratory	:	ALS Environmental - Waterloo
Contact	:	Chris Helmer	Account Manager	:	Emily Smith
Address	:	25 Water Street West Elora ON Canada N0B 1S0	Address	:	60 Northland Road, Unit 1 Waterloo Ontario Canada N2V 2B8
Telephone	:	905 550 0969	Telephone	:	+1 519 886 6910
Project	:	6585 Hwy 6, Fergus	Date Samples Received	:	04-May-2026 19:15
PO	:	----	Issue Date	:	12-May-2026 15:21
C-O-C number	:	----			
Sampler	:	AR/KB			
Site	:	----			
Quote number	:	Standing Offer 2026			
No. of samples received	:	4			
No. of samples analysed	:	4			

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence												
Amber glass total (sulfuric acid) [ON MECP]												
MW2-26	001	2572956	E298	04-May-2026	06-May-2026	28 days	1 days	✓	06-May-2026	28 days	1 days	✓
MW5-26	002	2572956	E298	04-May-2026	06-May-2026	28 days	1 days	✓	06-May-2026	28 days	1 days	✓
MW8-26	003	2574291	E298	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW10-26	004	2574291	E298	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC												
HDPE [ON MECP]												
MW2-26	001	2574016	E235.Cl	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW5-26	002	2574016	E235.Cl	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW8-26	003	2574016	E235.Cl	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW10-26	004	2574016	E235.Cl	04-May-2026	06-May-2026	28 days	1 days	✓	07-May-2026	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)												
HDPE [ON MECP]												
MW2-26	001	2574022	E378-U	04-May-2026	06-May-2026	7 days	2 days	✓	11-May-2026	7 days	7 days	✓
MW5-26	002	2574022	E378-U	04-May-2026	06-May-2026	7 days	2 days	✓	11-May-2026	7 days	7 days	✓

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)												
HDPE [ON MECP]												
MW8-26	003	2574022	E378-U	04-May-2026	06-May-2026	7 days	2 days	✓	11-May-2026	7 days	7 days	✓
MW10-26	004	2574022	E378-U	04-May-2026	06-May-2026	7 days	1 days	✓	11-May-2026	7 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC												
HDPE [ON MECP]												
MW2-26	001	2574013	E235.F	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW5-26	002	2574013	E235.F	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW8-26	003	2574013	E235.F	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW10-26	004	2574013	E235.F	04-May-2026	06-May-2026	28 days	1 days	✓	07-May-2026	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC												
HDPE [ON MECP]												
MW2-26	001	2574014	E235.NO3	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓
MW5-26	002	2574014	E235.NO3	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓
MW8-26	003	2574014	E235.NO3	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓
MW10-26	004	2574014	E235.NO3	04-May-2026	06-May-2026	7 days	1 days	✓	07-May-2026	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC												
HDPE [ON MECP]												
MW2-26	001	2574015	E235.NO2	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓
MW5-26	002	2574015	E235.NO2	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓
MW8-26	003	2574015	E235.NO2	04-May-2026	06-May-2026	7 days	2 days	✓	07-May-2026	7 days	2 days	✓

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC												
HDPE [ON MECP]												
MW10-26	004	2574015	E235.NO2	04-May-2026	06-May-2026	7 days	1 days	✓	07-May-2026	7 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC												
HDPE [ON MECP]												
MW2-26	001	2574017	E235.SO4	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW5-26	002	2574017	E235.SO4	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW8-26	003	2574017	E235.SO4	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW10-26	004	2574017	E235.SO4	04-May-2026	06-May-2026	28 days	1 days	✓	07-May-2026	28 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS												
HDPE - dissolved (lab filtered)												
MW2-26	001	2574332	E421	04-May-2026	06-May-2026	0 hrs	50 hrs	× UCP	06-May-2026	0 hrs	50 hrs	× UCP
MW5-26	002	2574332	E421	04-May-2026	06-May-2026	0 hrs	51 hrs	× UCP	06-May-2026	0 hrs	51 hrs	× UCP
MW8-26	003	2574332	E421	04-May-2026	06-May-2026	0 hrs	49 hrs	× UCP	06-May-2026	0 hrs	49 hrs	× UCP
MW10-26	004	2574332	E421	04-May-2026	06-May-2026	0 hrs	49 hrs	× UCP	06-May-2026	0 hrs	49 hrs	× UCP
Physical Tests : Alkalinity Species by Titration												
HDPE [ON MECP]												
MW2-26	001	2574020	E290	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW5-26	002	2574020	E290	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW8-26	003	2574020	E290	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW10-26	004	2574020	E290	04-May-2026	06-May-2026	14 days	1 days	✓	07-May-2026	14 days	2 days	✓

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Physical Tests : Colour (Apparent) by Spectrometer												
HDPE [ON MECP]												
MW2-26	001	2572369	E330	04-May-2026	----	----	----		05-May-2026	48 hrs	27 hrs	✓
MW5-26	002	2572369	E330	04-May-2026	----	----	----		05-May-2026	48 hrs	27 hrs	✓
MW8-26	003	2572369	E330	04-May-2026	----	----	----		05-May-2026	48 hrs	26 hrs	✓
MW10-26	004	2572369	E330	04-May-2026	----	----	----		05-May-2026	48 hrs	25 hrs	✓
Physical Tests : Conductivity in Water												
HDPE [ON MECP]												
MW2-26	001	2574019	E100	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW5-26	002	2574019	E100	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW8-26	003	2574019	E100	04-May-2026	06-May-2026	28 days	2 days	✓	07-May-2026	28 days	2 days	✓
MW10-26	004	2574019	E100	04-May-2026	06-May-2026	28 days	1 days	✓	07-May-2026	28 days	2 days	✓
Physical Tests : pH by Meter												
HDPE [ON MECP]												
MW2-26	001	2574021	E108	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW5-26	002	2574021	E108	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW8-26	003	2574021	E108	04-May-2026	06-May-2026	14 days	2 days	✓	07-May-2026	14 days	2 days	✓
MW10-26	004	2574021	E108	04-May-2026	06-May-2026	14 days	1 days	✓	07-May-2026	14 days	2 days	✓
Physical Tests : TDS by Gravimetry												
HDPE [ON MECP]												
MW2-26	001	2573100	E162	04-May-2026	----	----	----		06-May-2026	7 days	1 days	✓

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry												
HDPE [ON MECP]												
MW5-26	002	2573100	E162	04-May-2026	----	----	----		06-May-2026	7 days	2 days	✓
MW8-26	003	2573100	E162	04-May-2026	----	----	----		06-May-2026	7 days	1 days	✓
MW10-26	004	2573100	E162	04-May-2026	----	----	----		06-May-2026	7 days	1 days	✓
Physical Tests : Turbidity by Nephelometry												
HDPE [ON MECP]												
MW2-26	001	2572052	E121	04-May-2026	----	----	----		05-May-2026	48 hrs	24 hrs	✓
MW5-26	002	2572052	E121	04-May-2026	----	----	----		05-May-2026	48 hrs	25 hrs	✓
MW8-26	003	2572052	E121	04-May-2026	----	----	----		05-May-2026	48 hrs	24 hrs	✓
MW10-26	004	2572052	E121	04-May-2026	----	----	----		05-May-2026	48 hrs	23 hrs	✓
Total Metals : Total Metals in Water by CRC ICPMS												
HDPE total (nitric acid)												
MW2-26	001	2573135	E420	04-May-2026	06-May-2026	180 days	1 days	✓	07-May-2026	180 days	2 days	✓
MW5-26	002	2573135	E420	04-May-2026	06-May-2026	180 days	1 days	✓	07-May-2026	180 days	2 days	✓
MW8-26	003	2573135	E420	04-May-2026	06-May-2026	180 days	1 days	✓	07-May-2026	180 days	2 days	✓
MW10-26	004	2573135	E420	04-May-2026	06-May-2026	180 days	1 days	✓	07-May-2026	180 days	2 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: Water

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method / Lab	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Conductivity in Water	E100 / WT	2574019	1	20	5.0	5.0	✓
pH by Meter	E108 / WT	2574021	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2572052	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2573100	1	11	9.1	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2574016	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2574013	1	9	11.1	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2574015	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2574014	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2574017	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2574020	1	19	5.3	5.0	✓
Ammonia by Fluorescence	E298 / WT	2572956	2	39	5.1	5.0	✓
Colour (Apparent) by Spectrometer	E330 / WT	2572369	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2574022	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420 / WT	2573135	1	11	9.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2574332	1	10	10.0	5.0	✓
Laboratory Control Samples (LCS)							
Conductivity in Water	E100 / WT	2574019	1	20	5.0	5.0	✓
pH by Meter	E108 / WT	2574021	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2572052	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2573100	1	11	9.1	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2574016	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2574013	1	9	11.1	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2574015	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2574014	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2574017	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2574020	1	19	5.3	5.0	✓
Ammonia by Fluorescence	E298 / WT	2572956	2	39	5.1	5.0	✓

Matrix: Water

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method / Lab	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS)							
Colour (Apparent) by Spectrometer	E330 / WT	2572369	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2574022	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420 / WT	2573135	1	11	9.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2574332	1	10	10.0	5.0	✓
Method Blanks (MB)							
Conductivity in Water	E100 / WT	2574019	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2572052	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2573100	1	11	9.1	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2574016	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2574013	1	9	11.1	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2574015	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2574014	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2574017	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2574020	1	19	5.3	5.0	✓
Ammonia by Fluorescence	E298 / WT	2572956	2	39	5.1	5.0	✓
Colour (Apparent) by Spectrometer	E330 / WT	2572369	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2574022	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420 / WT	2573135	1	11	9.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2574332	1	10	10.0	5.0	✓
Matrix Spikes (MS)							
Chloride in Water by IC	E235.Cl / WT	2574016	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2574013	1	9	11.1	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2574015	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2574014	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2574017	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298 / WT	2572956	2	39	5.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2574022	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420 / WT	2573135	1	11	9.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2574332	1	10	10.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
Conductivity Screen (Internal Use Only)	ES100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed as CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because hardness is a property of water due to dissolved divalent cations. In non-turbid waters, Hardness from total Ca/Mg is normally comparable to Dissolved Hardness, but may be biased high if particulate forms of Ca or Mg are present.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Turbidity by Nephelometry	E121 ALS Environmental - Waterloo	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
Preparation Methods	***Method / Lab***	***Matrix***	***Method Reference***	***Method Descriptions***
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Autotitrator	EP108-TITR ALS Environmental - Waterloo	Water		Sample preparation for parameters analysed by Autotitrator
Preparation for Ion Chromatography	EP235-IC ALS Environmental - Waterloo	Water		Sample preparation for ion chromatography
Preparation for Orthophosphate	EP378-PO4 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod)	Sample preparation for orthophosphate analysis
Total Metals Water Digestion	EP420 ALS Environmental - Waterloo	Water	EPA 200.2 (mod)	Water samples are digested with HNO3 and HCl to liberate "total recoverable" metals.

GC - 893
N - 842
MM - 962

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17

Page

Environmental Division Waterloo

Work Order Reference WT2610978

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Hydrogeology Consulting
Contact:	Chris Helmer
Phone:	905-550-0969
	Company address below will appear on the final report
Street:	25 Water Street West
City/Province:	Elora, ON
Postal Code:	N0B 1S0
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax chrishelmer@hydrog.ca

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax chrishelmer@hydrog.ca

Email 2

Project Information

ALS Account # / Quote #: 2026 Standing Offer

Job #: 6585 Hwy. 6, Fergus

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Emily Smith | Sampler: Adrian Rudy, Kevin Brunner

Select Service Level Below - Contact your AM to

Regular [R] ☒ Standard TAT if received by 3 p

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Busines | Same Day (Laborato

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level

Analysi

Indicate Filtered (F), Preserved (P) or Filtered and ...

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Genchem Pkg 1 (Total Metals)	Dissolved Metals (Lab Filter)	SAMPLES ON HOL	SUSPECTED HAZARD (see Special Instructions)
	MW2-26	3May 26	14:25hrs.	Water	4	✓	✓		
	MW5-26	3May 26	13:45hrs	Water	4	✓	✓		
	MW8-26	3May 26	15:10hrs	Water	4	✓	✓		
	MW10-26	3May 26	15:40hrs.	Water	4	✓	✓		

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

Are samples taken from a Regulated DW System? ☐ YES ☒ NO

Are samples for human consumption/ use? ☐ YES ☒ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

PWQO

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C				
					15.9				

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Adrian Rudy	May 3, 2026	18:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
NTB	04/05/2026	19:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

APPENDIX H: SITE-LEVEL WATER BALANCE CALCULATIONS

6585 Highway 6, Fergus
Table A - Climatic Water Budget Calculations

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	Units
A	Temp	-7.40	-6.30	-1.90	5.70	12.20	17.5	20	19	14.9	8.3	2.1	-3.90		Degrees C
B	Heat Index (Hm) (***depends on T***!)	0.00	0.00	0.00	1.22	3.86	6.66	8.16	7.55	5.22	2.15	0.27	0.00	35.09	
C	Unadjusted Potential EVT (UPET) (***depends on T***!)	0.00	0.00	0.00	0.88	1.97	2.89	3.33	3.15	2.44	1.31	0.31	0.00		mm
D	Possible Monthly Duration of Sunlight (N)	24.3	24.3	30.6	33.6	38.1	38.7	39.0	36.0	31.2	28.5	24.0	22.8		
	Daylight Correction Value	0.81	0.81	1.02	1.12	1.27	1.29	1.30	1.20	1.04	0.95	0.80	0.76		
E	Adjusted Potential EVT (PET)	0.00	0.00	0.00	29.71	75.22	111.82	129.74	113.45	76.07	37.47	7.40	0.00	580.90	mm
F	Precipitation (P)	67.90	55.90	59.60	74.10	86.90	83.80	89.20	96.60	93.10	77.20	93.00	68.60	945.90	mm
G	Runoff Coefficient (C)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
H	Runoff (R)	6.79	5.59	5.96	7.41	8.69	8.38	8.92	9.66	9.31	7.72	9.30	6.86	94.59	mm
I	Infiltration (IN)	61.11	50.31	53.64	66.69	78.21	75.42	80.28	86.94	83.79	69.48	83.70	61.74		mm
J	IN - PET	61.11	50.31	53.64	36.98	2.99	-36.40	-49.46	-26.51	7.72	32.01	76.30	61.74		mm
K	Accumulated Water Loss (WL) (****Depends on Data!***)	0.00	0.00	0.00	0.00	0.00	-36.40	-85.86	-112.37	-112.37	-112.37	-112.37	-112.37		mm
L	Water Stored (WS)	54.00	54.00	54.00	54.00	54.00	26.65	20.68	32.29	40.00	54.00	54.00	54.00		mm
M	Change in Water Storage (CWS)	0.00	0.00	0.00	0.00	0.00	-27.35	-5.97	11.60	7.72	14.00	0.00	0.00		mm
N	Actual EVT (AET)	0.00	0.00	0.00	29.71	75.22	102.77	86.25	75.34	76.07	37.47	7.40	0.00	490.24	mm
O	Percolation (PERC)	61.11	50.31	53.64	36.98	2.99	0.00	0.00	0.00	0.00	18.01	76.30	61.74	361.07	mm
P	Data Check	67.90	55.90	59.60	74.10	86.90	83.80	89.20	96.60	93.10	77.20	93.00	68.60		***should equal precipitation***
	Precipitation Surplus	67.90	55.90	59.60	44.39	11.68	0.00	0.00	0.00	17.03	39.73	85.60	68.60	450.42	mm
	Precipitation Deficit	0.00	0.00	0.00	0.00	0.00	28.02	40.54	16.85	0.00	0.00	0.00	0.00	85.41	mm

A= ***1.055478189***

619.80 0.676416021

Wsmax= ***54*** see Tab for calculation

b= ***0.008425926***

Total Water Surplus **365.00** **mm**

Methodology from Thornthwaite, C.W. and Mather, J.R. (1955) as described in Daniel, David E. and Koerner, Robert M. (1997)

HCS HYDROGEOLOGY CONSULTING SERVICES INC

6585 Highway 6, Fergus

Table B: Pre-Development Water Balance

Inputs (per Unit Area)	Grass/ Trees	Built/ Paved	Total	
Total Area (m2)	290801.00	2382.00	293183.00	
Pervious Area (m2)	290801.00		290801.00	***99.2%***
Impervious Area (m2)		2382.00	2382.00	***0.81%***
Infiltration Factors				
Topography [a]	0.30	0.30	--	
Soil [a]	0.30	0.30	--	
Land Cover [a]	0.10	0.10	--	
MOECC Infiltration Factor	0.70	n/a	--	
Actual Infiltration Factor	0.70	n/a	--	
Run-Off Coefficient	0.30	1.00	--	
Runoff from Impervious Surfaces [b]	n/a	0.80	--	
Precipitation (mm/yr) [c]	945.90	945.90	945.90	
Run-On (mm/yr)	0.00	0.00	0.00	
Other Inputs (mm/yr)	0.00	0.00	0.00	
TOTAL INPUTS (mm/yr)	945.90	945.90	945.90	
Outputs (per Unit Area)				
Precipitation Surplus (mm/yr)	365.00	756.72	368.19	
Net Surplus (mm/yr)	365.00	756.72	368.19	
Evapotranspiration (mm/yr)	580.90	189.18	577.71	
Infiltration (mm/yr) [d]	255.50	529.70	257.73	
Rooftop Infiltration (mm/yr)	n/a	0.00	0.00	
Total Infiltration (mm/yr)	255.50	529.70	257.73	
Runoff (Pervious)	109.50	n/a	108.61	
Runoff (Impervious) [e]	n/a	227.02	1.84	
Total Runoff (mm/yr)	109.50	227.02	110.46	
TOTAL OUTPUTS (mm/yr)	945.90	945.90	945.90	
Difference (Inputs-Outputs)	0.00	0.00	0.00	

Inputs (Volumes)			
Precipitation (m^3/yr)	275068.67	2253.13	277321.80
Run-On (m^3/yr)	0.00	0.00	0.00
Other Inputs (m^3/yr)	0.00	0.00	0.00
TOTAL INPUTS (m^3/yr)	275068.67	2253.13	277321.80
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	106143.57	1802.51	107946.07
Net Surplus (m^3/yr)	106143.57	1802.51	107946.07
Evapotranspiration (m^3/yr)	168925.10	450.63	169375.73
Infiltration (m^3/yr)	74300.50	1261.75	75562.25
Rooftop Infiltration (m^3/yr)	n/a	0.00	0.00
Total Infiltration (m^3/yr)	74300.50	1261.75	75562.25
Runoff Pervious Areas (m^3/yr)	31843.07	n/a	31843.07
Runoff Impervious Areas (m^3/yr)	n/a	540.75	540.75
Total Runoff (m^3/yr)	31843.07	540.75	32383.82
TOTAL OUTPUTS (m^3/yr)	275068.67	2253.13	277321.80
Difference (Inputs-Outputs)	0.00	0.00	0.00

a- from MOECC (2003)

b- Evaporation assumed to be 20% of precipitation

c- from Canadian Climate Centre Normals (1991-2020)

d- assumes existing impervious areas discharge to ground surface, allowing potential to infiltrate

e- accounts for infiltration of runoff from impervious areas as it flows across adjacent pervious areas

Table C: Post-Development Water Balance (no Mitigation)

Inputs (per Unit Area)	Grass/ Trees	Built/ Paved	Total	
Total Area (m2)	89444.45	203738.55	293183.00	
Pervious Area (m2)	89444.45		89444.45	***30.51%***
Impervious Area (m2)		203738.55	203738.55	***69.49%***
Infiltration Factors				
Topography [a]	0.30	0.30	--	
Soil [a]	0.30	0.30	--	
Land Cover [a]	0.10	0.10	--	
MOECC Infiltration Factor	0.70	n/a	--	
Actual Infiltration Factor	0.70	n/a	--	
Run-Off Coefficient	0.30	1.00	--	
Runoff from Impervious Surfaces [b]	n/a	0.80	--	
Precipitation (mm/yr) [c]	945.90	945.90	945.90	
Run-On (mm/yr)	0.00	0.00	0.00	
Other Inputs (mm/yr)	0.00	0.00	0.00	
TOTAL INPUTS (mm/yr)	945.90	945.90	945.90	
Outputs (per Unit Area)				
Precipitation Surplus (mm/yr)	365.00	756.72	637.22	
Net Surplus (mm/yr)	365.00	756.72	637.22	
Evapotranspiration (mm/yr)	580.90	189.18	308.68	
Infiltration (mm/yr) [d]	255.50	0.00	77.95	
Rooftop Infiltration (mm/yr) [d]	0.00	0.00	0.00	
Total Infiltration (mm/yr)	255.50	0.00	77.95	
Runoff (Pervious)	109.50	n/a	33.41	
Runoff (Impervious)	n/a	756.72	525.86	
Total Runoff (mm/yr)	109.50	756.72	559.27	
TOTAL OUTPUTS (mm/yr)	945.90	945.90	945.90	
Difference (Inputs-Outputs)	0.00	0.00	0.00	

Inputs (Volumes)			
Precipitation (m^3/yr)	84605.51	192716.29	277321.80
Run-On (m^3/yr)	0.00	0.00	0.00
Other Inputs (m^3/yr)	0.00	0.00	0.00
TOTAL INPUTS (m^3/yr)	84605.51	192716.29	277321.80
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	32647.59	154173.04	186820.63
Net Surplus (m^3/yr)	32647.59	154173.04	186820.63
Evapotranspiration (m^3/yr)	51957.91	38543.26	90501.17
Infiltration (m^3/yr)	22853.32	0.00	22853.32
Rooftop Infiltration (m^3/yr)	n/a	0.00	0.00
Total Infiltration (m^3/yr)	22853.32	0.00	22853.32
Runoff Pervious Areas (m^3/yr)	9794.28	n/a	9794.28
Runoff Impervious Areas* (m^3/yr)	n/a	154173.04	154173.04
Total Runoff (m^3/yr)	9794.28	154173.04	163967.31
TOTAL OUTPUTS (m^3/yr)	84605.51	192716.29	277321.80
Difference (Inputs-Outputs)	0.00	0.00	0.00

a- from MOECC (2003)

b- Evaporation assumed to be 20% of precipitation

c- from Canadian Climate Centre Normals (1991-2020)

d- assumes impervious surfaces do not have the opportunity for infiltration

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Table D: Water Balance Summary

	Pre- Development	Post-Development	Change (Pre-Post)
Inputs (Volumes)			
Precipitation (mm/yr)	945.90	945.90	0.00
Run-On (mm/yr)	0	0	0.00
Other Inputs (mm/yr)	0	0	0.00
TOTAL INPUTS (mm/yr)	945.90	945.90	0.00
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	107946.07	186820.63	78874.56
Net Surplus (m^3/yr)	107946.07	186820.63	78874.56
Evapotranspiration (m^3/yr)	169375.73	90501.17	-78874.56
Infiltration (m^3/yr)	75562.25	22853.32	-52708.94
Rooftop Infiltration (m^3/yr)	0.00	0.00	0.00
Total Infiltration (m^3/yr)	75562.25	22853.32	-52708.94
Runoff Pervious Areas (m^3/yr)	31843.07	9794.28	-22048.79
Runoff Impervious Areas (m^3/yr)	540.75	154173.04	153632.28
Total Runoff (m^3/yr)	32383.82	163967.31	131583.49
TOTAL OUTPUTS (m^3/yr)	277321.80	277321.80	0.00

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