



Hydrogeology Assessment – Proposed Residential Development

526 Bay Street, Midland, Ontario

Prepared for:

2489752 Ontario Inc.
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Midland, Ontario L4R 5M9

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1.0 INTRODUCTION AND BACKGROUND

Pinchin Ltd. (Pinchin) was retained by 2489752 Ontario Inc. (Client) to complete a hydrogeological assessment of the property located at 526 Bay Street, Midland, Ontario (Site).

The Site is located between Bayshore Drive and Bay Street, on the east side of First Street, in the Town of Midland (Town), in Simcoe County, Ontario. The approximate site location is shown on Figure 1.

The Site consists of a parcel of land of 1,720 m² (0.43 acres), and was developed as a parking lot. It is understood that the Client intends to develop the Site for multi-tenant residential and commercial use. Based on information provided, the proposed development will consist of a four-storey multi-tenant residential building fronting Bay Street with no underground basement/structure.

The hydrogeological assessment was conducted in support of the proposed land development.

1.1 Purpose

The purpose of this hydrogeological assessment was to characterize the soil and groundwater conditions of the Site, evaluate the dewatering requirements for the proposed construction and operations phases of the development, assess the groundwater quality for potential excess water discharge, evaluate potential impacts on the surrounding environment due to the proposed development, and provide recommendations concerning mitigative measures, if required.

1.2 Proposed Development Parameters

A Site Plan and Pre-Consultation Schematic Plans dated December 2023 prepared by Quantum Engineering are included in Appendix I. In addition, a topographic survey plan dated October 25, 2023 prepared by DEMTech Services is also provided in Appendix I.

Based on the drawings and the information provided, the parameters pertinent to the Site and the proposed development include the following:

- The Site has an approximate area of 1,720 m², and is currently an asphalt-paved parking lot;
- The proposed development will have one slab-on-grade building surrounded by the exterior areas used for side walk, patios, parking spaces, and the designated areas for garbage enclosure, snow storage and transformer;
- The proposed building will occupy a total footprint area of 1,047.7 m², and will be built with four levels. The Level 1 (ground floor) will provide 15 interior parking spaces, two commercial areas, and residential entrance area including common room, utility room, lobby and elevator/stair areas, and the Level 2, Level 3 and Level 4 (penthouse level) will include a total of 15 residential units.



1.3 Previous and Current Investigations

1.3.1 Previous Investigations

AiMs Environmental did an environmental assessment in 2017 on a property that included the current Site area, during which eight boreholes (BH1 to BH8) with four monitoring wells (BH/MW1 to BH/MW4) were advanced. The approximate borehole and monitoring well locations and borehole logs are provided in Appendix II. However, it should be noted that a full report pertinent to the environmental assessment was not made available for review. In addition, two of the boreholes and monitoring wells (BH/MW3 and BH/MW4) are located beyond the current site area. BH/MW2 was not found during the site visits completed for this hydrogeological assessment. As such, only the existing well BH/MW1 was used for groundwater monitoring in this hydrogeological assessment.

1.3.2 Current Investigations

The hydrogeological assessment was conducted concurrently with a geotechnical investigation and Phase Two Environmental Site Assessment (ESA), in which a total of 15 boreholes (MW101 to MW106, MW104D, BH201 to BH205 and MW301 to MW303) were advanced and 10 monitoring wells (MW101 to MW106, MW104D, BH201 to BH205 and MW301 to MW303) were completed at the Site. Nine of the monitoring wells were constructed with the screens at depths between 1.5 mbgs and 4.6 mbgs and one monitoring well was constructed between 9.2 mbgs and 10.7 mbgs.

The approximate borehole and monitoring well locations are shown on Figure 2. The monitoring well construction details are provided in Table 1. The results of the geotechnical investigation and environmental site assessment (Phase Two ESA) are provided under separate cover.

2.0 METHODOLOGY

As mentioned, 10 monitoring wells (MW101 to MW106, MW104D, and MW301 to MW303) were completed at the Site for the concurrent environmental site assessment, geotechnical and hydrogeological investigation. In addition, one existing monitoring well BH/MW1 installed in the previous investigation was used for groundwater monitoring for this hydrogeological assessment.

The scope of work completed for this hydrogeological assessment consisted of the following tasks:

- A review of the existing data for the previous investigation and the borehole logs completed for the current investigations;
- A desktop water well inventory survey using data from the MECP Water Well Information System (WWIS) database within 500 m of the Site property boundaries;
- A review and summary of the regional geology and hydrogeology, and its linkage to the site-specific geology and hydrogeology;

- Groundwater level measurements between November 2023 and March 2024 to obtain static groundwater levels;
- Rising head hydraulic conductivity testing of selected monitoring wells;
- Preparation of local scale geologic cross-sections, groundwater elevation contours and flow directions;
- Background groundwater quality analysis as per Town of Midland Sewer Use Bylaw parameters;
- A dewatering assessment for the construction and operations phases of the proposed re-development;
- A potential impact assessment with mitigative measures, if required; and
- Preparation of a hydrogeological assessment report summarizing the findings of the investigation.

3.0 SITE DESCRIPTION AND GEOLOGICAL SETTING

3.1 Surface Water and Drainage

The Site is located in the Georgian Bay area of the Lake Huron Watershed. The Site is located approximately 150 m southeast of the Georgian Bay shoreline.

As shown on Figure 3, no open water body is present on-Site. The Site appears to slope towards the northwest, with topographic elevations ranging between 180 meters above sea level (masl) and 185 masl.

3.2 Physiography

The Site is located in an area comprised of the Sand Plains physiographic landform, within the Simcoe Uplands Physiographic Region (Chapman and Putnam, 2007).

3.3 Surficial Geology

The Site is located in an area covered by coarse-textured lacustrine deposits or foreshore and basinal deposits composed of sand, gravel, minor silt and clay.

3.4 Bedrock Geology

The Site is located in an area underlain by the Simcoe Group Gull River Formation, consisting of limestone and dolostone.

3.5 MECP Water Wells

Water well records from within a 500 m radius of the Site were accessed from the Ontario Ministry of the Environment, Conservation and Parks (MECP) Water Well Information System (WWIS).

A total of 57 water well records were found within a 500 m radius of the Site property lines. None of the well records were filed within the Site area. The approximate MECP water well locations are presented on Figure 3.

Among the noted well records, 48 records are related to test holes or monitoring wells, and 7 are for abandoned wells or for wells with no salient information. Reviews of the well record details were conducted for eight wells located adjacent to the Site, and a summary of the reviewed well records is presented below.

Well #	Location	Well Use	Soil Encountered	Well Screen	Date of Well Completion
7328626	Bay Street	Monitoring/test hole	0 – 0.5 ft.: unknown 0.5-13 ft.: sandy silt	Not recorded	October 2, 2018
7328627	Bayshore Drive	Monitoring/test hole	0 – 0.5 ft.: unknown 0.5-13 ft.: sandy silt	3-13 ft	October 2, 2018
7328484	Bay Street	Monitoring/test hole	0 – 6": asphalt 6"-13 ft.: sandy/gravelly silt	Not recorded	October 2, 2018
7328484	Bay Street	Monitoring/test hole	0 – 6": asphalt 6"-13 ft.: sandy/gravelly silt	3-13 ft	Not recorded
7204029	Not available				June 19, 2013
7328486	Bayshore Drive	Monitoring/test hole	0 – 6" ft.: asphalt 6"-13 ft.: silt	3-13 ft	October 2, 2018
7328487	Bayshore Drive	Monitoring/test hole	0 – 6": asphalt 6"-10 ft.: gravelly sand 10-20 ft.: silt	10-20 ft	October 2, 2018
7328488	First Street	Monitoring/test hole	0 – 6": asphalt 6"-13 ft.: sandy silt	3-13 ft	October 3, 2018

As presented, the soils encountered at the well locations mainly consists of sandy and silty soils, and bedrock was not encountered at the maximum drilling depth of approximately 6.1 mbgs.

4.0 SUBSURFACE CONDITIONS

4.1 Soil Stratigraphy

In general, the soil stratigraphy revealed in the drilled boreholes at the Site comprises fill material under topsoil or asphalt pavement, extending to maximum depth of approximately 3.1 mbgs, underlain by silty clay or clayey silt, locally with sandy silt, underlain by sand or silty sand at +/-4 mbgs, extending to the explored borehole depth. Bedrock was not encountered in any of the boreholes within the maximum explored depth of 6.1 mbgs.



Detailed soil descriptions and stratigraphy are presented in the Borehole Logs that are provided in Appendix III. Cross-sections showing the stratigraphy across the Site are presented in Figures 4A and 4B of this report.

4.2 Groundwater Conditions

As mentioned, ten monitoring wells were recently installed at the Site by Pinchin and one existing monitoring well installed at the Site during the previous investigation was found to be functional. The approximate monitoring well locations are shown in Figure 2, and the monitoring well construction details are presented in Table 1.

Water level measurements were conducted in all the accessible monitoring wells between November 2023 and June, 2024. The obtained groundwater level data is presented in Table 2. In addition, ground water levels recorded in the previous investigation are included in Table 2.

The measured groundwater levels ranged from 1.10 mbgs (Elevation: 180.36 masl) at MW103 (November 27, 2023) to 2.24 mbgs (Elevation: 179.16 masl) at MW303 (January 31, 2024). The highest recorded groundwater elevation on-Site was at MW103 on November 27, 2023 (Elevation: 180.36 masl).

Based on the groundwater elevations obtained on February 1, 2024, groundwater elevation contours were prepared and are presented on Figure 5. The groundwater flow was inferred to be generally to the north, towards Georgian Bay.

4.3 Hydraulic Conductivity

The hydraulic conductivities (K-values) of the soils at the Site were estimated based on the results of in-situ hydraulic conductivity tests completed in selected monitoring wells.

Rising head K-tests were conducted at six monitoring wells (MW101 to MW104) on January 31, 2024. The K-test curves and analysis are provided in Appendix IV. The estimated hydraulic conductivities (K-values) are presented as follows:

Monitoring Well	Screen Interval (mbgs)	Screened Soil	K Value (cm/sec)
MW101	1.5 – 4.6	Silty Clay; Sand	8.1×10^{-5}
MW102	1.5 – 4.6	Silty Clay; Silty Sand	1.2×10^{-3}
MW106	1.5 – 4.6	Silty Clay; Silty Sand	9.8×10^{-5}
MW301	1.5 – 4.6	Silty sand; Clayey Silt	1.2×10^{-6}
MW302	1.5 – 4.6	Silty Sand; Sandy Silt; Clayey Silt	1.2×10^{-6}
MW106	1.5 – 4.6	Fill (silty sand); Silty Clay; Silty Sand	1.2×10^{-4}
Geometric Mean			3.4×10^{-5}



As presented above, the estimated K-values for the soils at the Site, including silty clay, clayey silt, sandy silt, silty sand and sand/or their combinations ranged from 1.2×10^{-6} cm/sec to 1.2×10^{-3} cm/sec, with the geometric mean calculated to be 3.4×10^{-5} cm/sec.

5.0 DEWATERING ASSESSMENT

It is understood that the proposed residential/commercial development will have one slab-on-grade building with no underground structure.

For completion of the proposed development, excavation for the building footing construction and for the removal of the fill material will be required. In addition, excavation for installation and connection to the Town's sewer systems may be required. It would be assumed that the potential excavation will extend to a depth of approximately 4 mbgs.

Based on the groundwater level monitoring to date, the highest groundwater level was recorded at 1.10 mbgs (which was measured at MW103 on November 27, 2023). Therefore, the excavation for the proposed foundations and utility trenches is anticipated to be below the groundwater table, and groundwater control will be required during the construction phase of the development. Given the slab-on-grade building design and the measured groundwater levels, long-term dewatering from the subdrainage system, if designed, is not anticipated.

5.1 Short-Term Construction Dewatering Assessment

As discussed above, excavation for the proposed development will be assumed to be limited to trench excavations for the strip footing/foundation structures or for utility installation. The worst-case excavation would be assumed to the depth of 4 mbgs, and dewatering estimates presented below are based on an assumed 2.5 m wide x 30 m long trench excavation.

5.1.1 Groundwater Inflow

The following parameters and assumptions were utilized for the dewatering estimates:

- Depth of excavation: 4 mbgs;
- Initial groundwater level: 0.5 mbgs (the highest water level recorded to date was 1.10 mbgs in November 2023);
- Target groundwater level: 4.5 mbgs (0.5 m below trench excavation)
- Hydraulic Conductivity: 6.8×10^{-5} cm/sec (two times the geomean of the estimated K-values)

Based on the above assumptions (trench excavation of 2.5 m width x 30 m length), the short-term construction dewatering rate and zone of influence for footings and utility trenches were estimated and are presented below.



Excavation Type	Excavation Depth (mbgs)	Initial Water Level (mbgs)	Target Water Level (masl)	K- Estimate (cm/sec)	Estimated Zone of Influence (m from Edge of Excavation)	Dewatering Rate (without Safety Factor) (L/day)	Dewatering Rate Estimate with Safety Factor of 2 or 100% (L/day)
Sewer (2.5 m x 30 m)	4	0	4.5	6.8×10^{-5}	11	3,147	6,293

It should be noted that the application of a Safety Factor provides a more conservative assessment for planning purposes to account for potential variabilities in the hydraulic conductivities in the soil across the Site. In addition, during the initial stages of the construction dewatering, the dewatering volumes would be greater than those under a steady state condition, because the water stored in the soils is also being removed.

5.1.2 Stormwater Inflow

A significant amount of the dewatering demand from any construction project is the volume of water that is derived from stormwater that is generated during and after precipitation events. In the case of the proposed development, it will be necessary to handle stormwater that will accumulate within the excavation footprint.

For planning purposes, dewatering estimates are developed assuming the potential occurrence of extreme storm events, which are based upon events that have an observed “return period” or period of recurrence.

Based on the Canadian Climatic Normal 1981-2010 Data for the Midland Water Pollution Control Plant station, the accumulative days which had a precipitation rate greater than 25 mm/day vary from 0.22 to 0.9 days in a given month, with the maximum occurring in September. Therefore, a rate of 25 mm/day is used for the calculation as a high-precipitation storm event.

The volume of water that can be generated in the trench excavation area with an assumed dimension of 2.5 m x 30 m was estimated and is summarized below:

Excavation Area (m ²)	Precipitation Rate (mm/day)	Stormwater Volume (L/day)
2.5 m x 30 m	25	1,875

It should be noted that the above estimate does not take into account any infiltration or evaporation in the excavation area. However, it should also be noted that, for infrequent extreme storm events, the great majority of the generated stormwater becomes run-off or accumulates in the excavation area, due to the fixed assimilative capacity of the soils and the minimal evaporation until the cessation of the event.

5.1.3 Summary of Construction Dewatering Estimates

Based on the short-term construction dewatering calculations discussed above, the estimated construction phase dewatering rates for an assumed trench excavation with a dimension of 2 m wide x 30 m wide x 4 m deep are summarized below.

Construction Dewatering	Total Volume without Safety Factor for Groundwater (L/day)	Total Volume with Safety Factor of 2 for Groundwater (L/day)
Discharge of Groundwater	3,147	6,293
Discharge of Stormwater	1,875	1,875
Discharge of Groundwater and Stormwater	5,022	8,167

It is understood that water taking from groundwater in Ontario is governed under Part II.2 of the Environmental Protection Act (EPA or Act), Ontario Regulation (O. Reg.) 245/11 (Registrations Under II.2 of the Act – General) and O. Reg. 63/16 (Registrations under II.2 of the Act – Water Taking), Ontario Regulation 387/04 and the Ontario Water Resources Act (OWRA).

Based on the dewatering calculations described above, the estimated total dewatering inflow from groundwater, including a Safety Factor of 2, and from the storm water for a trench excavation with a dimension of 2.5 m wide x 30 m long x 4 m deep is below the threshold for an Environmental Activity Sector Registration (EASR) requirement for construction dewatering of more than 50,000 L/day (50 m³/day), and is also below the threshold limit of 400,000 L/day (400 m³/day) for a Permit-to-Take-Water (PTTW) requirement. It is understood that excavation at multiple locations may occur at the same time during the construction. However, the total dewatering volume can be managed and controlled within the limit of 50,000 L/day. Therefore, an EASR registration or a PTTW will not be required for the construction of the proposed building.

5.2 Long-Term Dewatering Estimate - Operations

It is understood that the proposed buildings will be slab-on-grade with no underground structure. Therefore, long-term dewatering is not anticipated to be associated with the proposed development. A PTTW will not be required for the operation of the proposed building.

6.0 GROUNDWATER QUALITY

One unfiltered groundwater sample was obtained from MW104 on December 18, 2023 to evaluate the water quality with reference to the Town of Midland Sanitary/Storm Sewer Use By-Law (No. 94-25) parameter criteria.

The groundwater sample was submitted to and analyzed by Bureau Veritas (BV), which is a lab accredited by Canadian Association For Laboratory Accreditation Inc. (CALA). The laboratory Certificate of Analysis is presented in Appendix V.

The analytical results were compared with the relevant standards (Town of Midland Sewer Use bylaw (No. 94-25) – Sanitary and Storm Sewer Discharge Limits). Exceedances of the Storm and Sanitary Sewer Discharge limits were measured in the analyzed water sample for two parameters including total suspended solids (TSS) and copper. The identified exceedances are detailed below.

Monitoring Well	Parameter	Unit	Storm Sewer Guideline Value	Sanitary Sewer Guideline Value	Measured Concentration
MW104	TSS	mg/L	<u>15</u>	<u>350</u>	1,100
	Copper	ug/L	<u>10</u>	1,000	17

It should be noted that the measured exceedances including TSS and Cu are likely attributed to the sediments contained in the analyzed water sample. To confirm this, a filtered water sample for analysis of TSS and metals is recommended to be undertaken, to simulate the effects of filtration on the concentrations of these parameters.

Therefore, based on the groundwater quality assessment, the excess water generated from the Site cannot be discharged directly into the local sewer systems before appropriate treatment via sediment filtration.

7.0 CONCLUSIONS

Pinchin provides the following conclusions arising out of the Hydrogeology Assessment activities to date:

- The Site is located in the Georgian Bay area in the Lake Huron Watershed. The closest point of Georgian Bay to the Site is located approximately 150 m northwest of the Site;
- The Site is located on the Simcoe Uplands Physiographic Region, within a Sand Plains physiographic landform, covered by coarse-textured lacustrine deposits or foreshore and basinal deposits composed of sand, gravel, minor silt and, and underlain by the Simcoe Group Gull River Formation, consisting of limestone and dolostone;



- The soil stratigraphy revealed in the drilled boreholes at the Site generally comprises fill material under topsoil or asphalt pavement, extending to a maximum depth of approximately 3.1 mbgs, underlain by silty clay or clayey silt, locally with sandy silt, underlain by sand or silty sand, extending to the explored borehole depth. Bedrock was not encountered in any of the boreholes within the maximum explored depth of 6.1 mbgs;
- The groundwater levels measured between November 2023 and June 2024 ranged from 1.10 mbgs to 2.24 mbgs, and elevations ranged from 179.16 masl to 180.36 masl. The groundwater flow was inferred to be generally to the north, towards Georgian Bay;
- The hydraulic conductivities (K-values) estimated for the soils at the Site, including silty clay, clayey silt, sandy silt, silty sand and sand/or their combinations ranged from 1.2×10^{-6} cm/sec to 1.2×10^{-3} cm/sec, with the geometric mean calculated to be 3.4×10^{-5} cm/sec;
- Given the proposed slab-on-grade building design, long-term subdrainage discharge will not be required. However, groundwater control will be needed during the construction phase of the development. A dewatering estimate for a trench excavation (2.5 m wide X 30 m X long 4 m deep), which is assumed to be a potential worst-case scenario for the footing construction or for the potential sewer installation, indicated a maximum flow rate of 8,167 L/day from groundwater and storm water inflow. An EASR registration or a PTTW will not be required; and
- A groundwater quality assessment completed as per the Town of Midland Sanitary and Storm Sewer Use Bylaw indicated that the unfiltered groundwater sample did not meet the storm or sanitary sewer standards. The excess water generated during the construction cannot be discharged directly into the local sewer system without appropriate treatment via sediment filtration.

8.0 REFERENCES

- Cuddy, S., Soo Chan, G. and Pos, R. June 2013. *Hydrogeological Assessment Submissions, Conservation Authority Guidelines for Development Applications*.
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- Ontario Geological Survey. 2010. *Surficial Geology of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 128-REV.
- Armstrong, D.K. and Dodge, J.E.P. 2007. *Paleozoic Geology Map of Southern Ontario*; Ontario Geological Survey, Miscellaneous Release--Data 219.
- Ontario Geological Survey online database.



Ontario Ministry of Environment, Conservation and Parks (MECP) on-line water well information database.

9.0 TERMS AND LIMITATIONS

This Hydrogeology Assessment was performed for the exclusive use of 2489752 Ontario Inc. (Client), the Town of Midland (Town), and Simcoe County (County) in order to evaluate the subsurface conditions at 526 Bay Street, Midland, Ontario.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practises in the field of hydrogeology for the Site. Classification and identification of soil and geologic units have been based upon commonly accepted methods employed in professional geotechnical and geological engineering practice. No warranty or other conditions, expressed or implied, should be understood. Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations.

The performance of this Hydrogeological Assessment to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the subgrade soil and groundwater conditions at the Site and recognizes reasonable limits on time and cost.

Regardless of how exhaustive a geological/hydrogeological investigation is performed, the investigation cannot identify all of the subsurface conditions. In addition, this report is intended to be supplemented and updated with future, more extensive, investigations at the detailed design stage(s) of the Project.

Therefore, no warranty is expressed or implied that the entire Site is representative of the subsurface information obtained at the specific locations of our investigation and previous investigations done by others. If, during construction, subsurface conditions differ from then what was encountered within our test locations and the additional subsurface information provided to us, Pinchin should be contacted to review our recommendations. This report does not alleviate the contractor, owner, or any other parties of their respective responsibilities.

This report has been prepared for the exclusive use of the Client, the Town, the County and Client's authorized agents. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice.

The liability of Pinchin or our officers, directors, shareholders or staff will be limited to the lesser of the fees paid or actual damages incurred by the Client. Pinchin will not be responsible for any consequential or indirect damages. Pinchin will only be liable for damages resulting from the negligence of Pinchin.



Pinchin will not be liable for any losses or damage if the Client has failed, within a period of two years following the date upon which the claim is discovered (Claim Period), to commence legal proceedings against Pinchin to recover such losses or damage unless the laws of the jurisdiction which governs the Claim Period which is applicable to such claim provides that the applicable Claim Period is greater than two years and cannot be abridged by the contract between the Client and Pinchin, in which case the Claim Period shall be deemed to be extended by the shortest additional period which results in this provision being legally enforceable.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

Specific limitations related to the legal and financial and limitations to the scope of the current work are outlined in our proposal and any subsequent Change Order documentation, the attached Methodology and the Authorization to Proceed, Limitation of Liability and Terms of Engagement which accompanied the proposal.

Information provided by Pinchin is intended for Client, the Town, the County, and Client's authorized agents' use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

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Template: Master Geotechnical Investigation Report – Ontario, GEO, April 18, 2019

TABLES



Table 1

MONITORING WELL CONSTRUCTION DETAILS

2489752 Ontario Inc.

526 Bay Street, Midland, Ontario

Monitoring Well	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)	Stick-Up Height (metres)	Well Construction Details				
				Borehole Depth (mbgs)	Well Diameter (centimetres)	Monitoring Well Screen Interval (mbgs)	Screen length (metres)	Screened Soil
MW101	181.52	181.41	-0.11	6.1	5.1	1.5 - 4.6	3.05	silty clay; sand
MW102	181.49	181.38	-0.11	6.1	5.1	1.5 - 4.6	3.05	silty clay; silty sand
MW103	181.46	181.38	-0.08	6.1	5.1	1.5 - 4.6	3.05	silty clay; sand
MW104	181.42	181.32	-0.10	6.1	5.1	1.5 - 4.6	3.05	silty clay; sand
MW104D	181.42	181.30	-0.12	10.7	5.1	9.2 - 10.7	1.50	sand
MW105	181.19	181.10	-0.09	6.1	5.1	1.5 - 4.6	3.05	Fill (clayey silt); silty clay; sandy silt; silty sand
MW106	181.37	181.28	-0.09	6.1	5.1	1.5 - 4.6	3.05	silty clay; silty sand
MW301	181.52	181.41	-0.11	4.6	5.1	1.5 - 4.6	3.05	silty sand; clayey silt
MW302	181.37	182.39	1.02	4.6	5.1	1.5 - 4.6	3.05	silty sand; sand silt; clayey silt
MW303	181.40	181.29	-0.11	4.6	5.1	1.5 - 4.6	3.05	Fill (silty sand); silty clay; silty sand silt
BH/MW1	181.52	181.39	-0.13	4.5	5.1	1.5 - 4.5	3.05	silty clay; silty sand
BH/MW2	181.37	-	-	4.5	5.1	1.5 - 4.5	3.05	sandy silt; silty clay; silty sand

Notes:

masl = metres above sea level

mbgs = metres below ground surface



TABLE 2
GROUNDWATER ELEVATION DATA
2489752 Ontario Inc.
526 Bay Street, Midland, Ontario

					March 1, 2017			November 27, 2023			November 29, 2023			December 18, 2023		
Monitoring Well	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)	Stick-Up Height (metres)	Monitoring Well Screen Interval (mbgs)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)
MW101	181.52	181.41	-0.11	1.5 - 4.6	-	-	-	1.45	1.56	179.96	1.52	1.63	179.89	1.57	1.68	179.84
MW102	181.49	181.38	-0.11	1.5 - 4.6	-	-	-	1.39	1.50	179.99	1.37	1.48	180.01	1.41	1.52	179.97
MW103	181.46	181.38	-0.08	1.5 - 4.6	-	-	-	1.02	1.10	180.36	1.28	1.36	180.10	1.26	1.34	180.12
MW104	181.42	181.32	-0.10	1.5 - 4.6	-	-	-	1.26	1.36	180.06	1.08	1.18	180.24	1.33	1.43	179.99
MW104D	181.42	181.30	-0.12	9.2 - 10.7	-	-	-	-	-	-	-	-	-	-	-	-
MW105	181.19	181.10	-0.09	1.5 - 4.6	-	-	-	1.29	1.38	179.81	1.36	1.45	179.74	1.42	1.51	179.68
MW106	181.37	181.28	-0.09	1.5 - 4.6	-	-	-	1.17	1.26	180.11	1.17	1.26	180.11	1.28	1.37	180.00
MW301	181.52	181.41	-0.11	1.5 - 4.6	-	-	-	-	-	-	-	-	-	-	-	-
MW302	181.37	182.39	1.02	1.5 - 4.6	-	-	-	-	-	-	-	-	-	-	-	-
MW303	181.40	181.29	-0.11	1.5 - 4.6	-	-	-	-	-	-	-	-	-	-	-	-
BH/MW1	181.52	181.39	-0.13	1.5 - 4.5	-	1.61	179.91	1.55	1.68	179.84	1.53	1.66	179.86	1.54	1.67	179.85
BH/MW2	181.37	-	-	1.5 - 4.5	-	1.21	180.16	-	-	-	-	-	-	-	-	-

Notes:
masl = metres above sea level
mbgs = metres below ground surface



TABLE 2
GROUNDWATER ELEVATION DATA
2489752 Ontario Inc.
526 Bay Street, Midland, Ontario

					January 31, 2024			February 1, 2024			February 2, 2024			March 11, 2024		
Monitoring Well	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)	Stick-Up Height (metres)	Monitoring Well Screen Interval (mbgs)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)
MW101	181.52	181.41	-0.11	1.5 - 4.6	1.58	1.69	179.83	1.57	1.68	179.84	1.55	1.66	179.86	1.58	1.69	179.83
MW102	181.49	181.38	-0.11	1.5 - 4.6	1.43	1.54	179.95	1.40	1.51	179.98	1.39	1.50	179.99	1.39	1.50	179.99
MW103	181.46	181.38	-0.08	1.5 - 4.6	-	-	-	1.30	1.38	180.08	-	-	-	1.27	1.35	180.11
MW104	181.42	181.32	-0.10	1.5 - 4.6	-	-	-	1.07	1.17	180.25	-	-	-	1.05	1.15	180.27
MW104D	181.42	181.30	-0.12	9.2 - 10.7	-	-	-	1.10	1.22	180.20	-	-	-	1.04	1.16	180.26
MW105	181.19	181.10	-0.09	1.5 - 4.6	-	-	-	1.39	1.48	179.71	-	-	-	1.46	1.55	179.64
MW106	181.37	181.28	-0.09	1.5 - 4.6	1.19	1.28	180.09	1.26	1.35	180.02	1.29	1.38	179.99	1.24	1.33	180.04
MW301	181.52	181.41	-0.11	1.5 - 4.6	1.45	1.56	179.96	1.73	1.84	179.68	-	-	-	1.65	1.76	179.76
MW302	181.37	182.39	1.02	1.5 - 4.6	2.97	1.95	179.42	2.95	1.93	179.44	-	-	-	3.05	2.03	179.34
MW303	181.40	181.29	-0.11	1.5 - 4.6	2.13	2.24	179.16	2.12	2.23	179.17	-	-	-	1.13	1.24	180.16
BH/MW1	181.52	181.39	-0.13	1.5 - 4.5	-	-	-	1.56	1.69	179.83	1.55	1.68	179.84	1.56	1.69	179.83
BH/MW2	181.37	-	-	1.5 - 4.5	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
masl = metres above sea level
mbgs = metres below ground surface

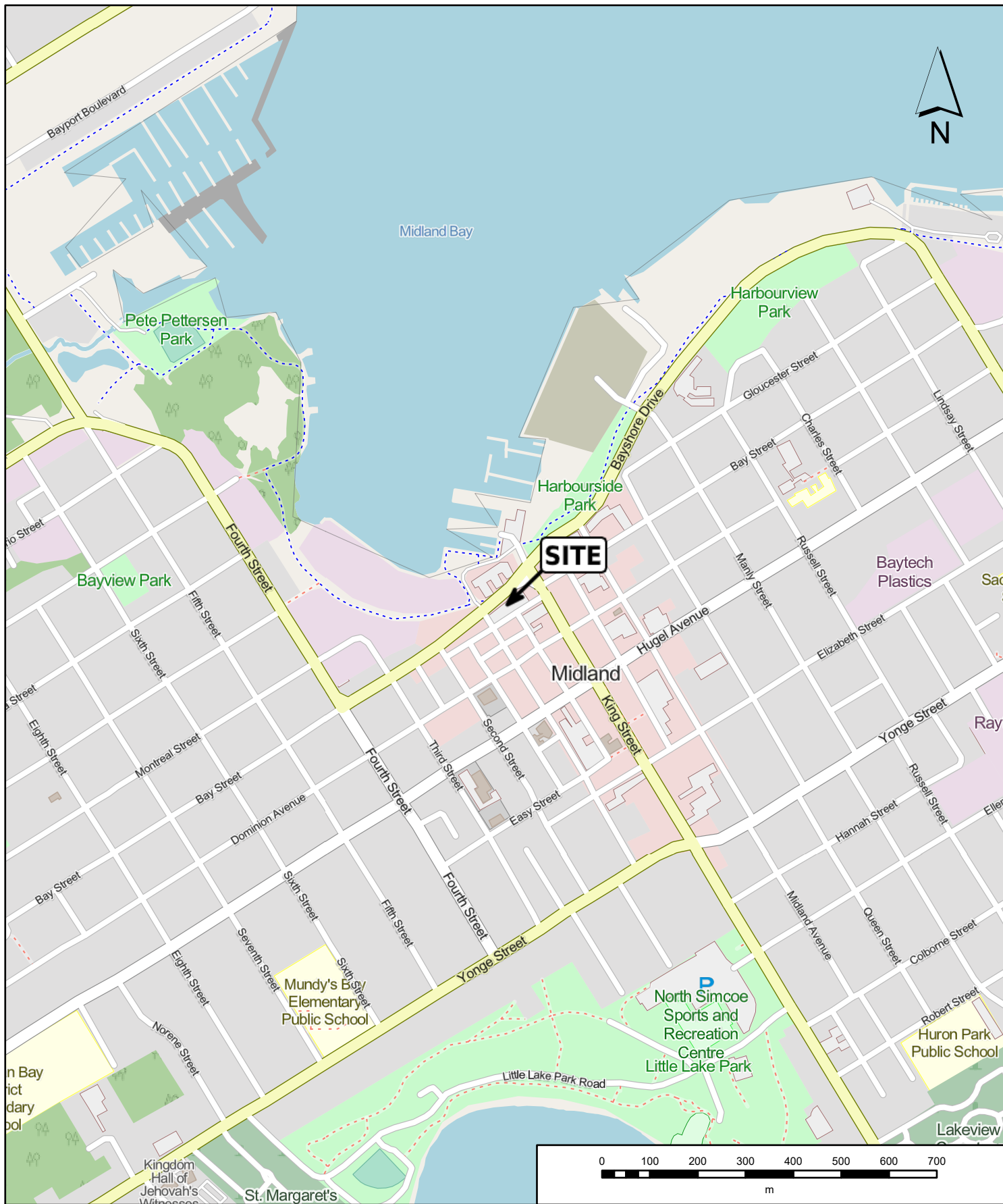


TABLE 2
GROUNDWATER ELEVATION DATA
2489752 Ontario Inc.
526 Bay Street, Midland, Ontario

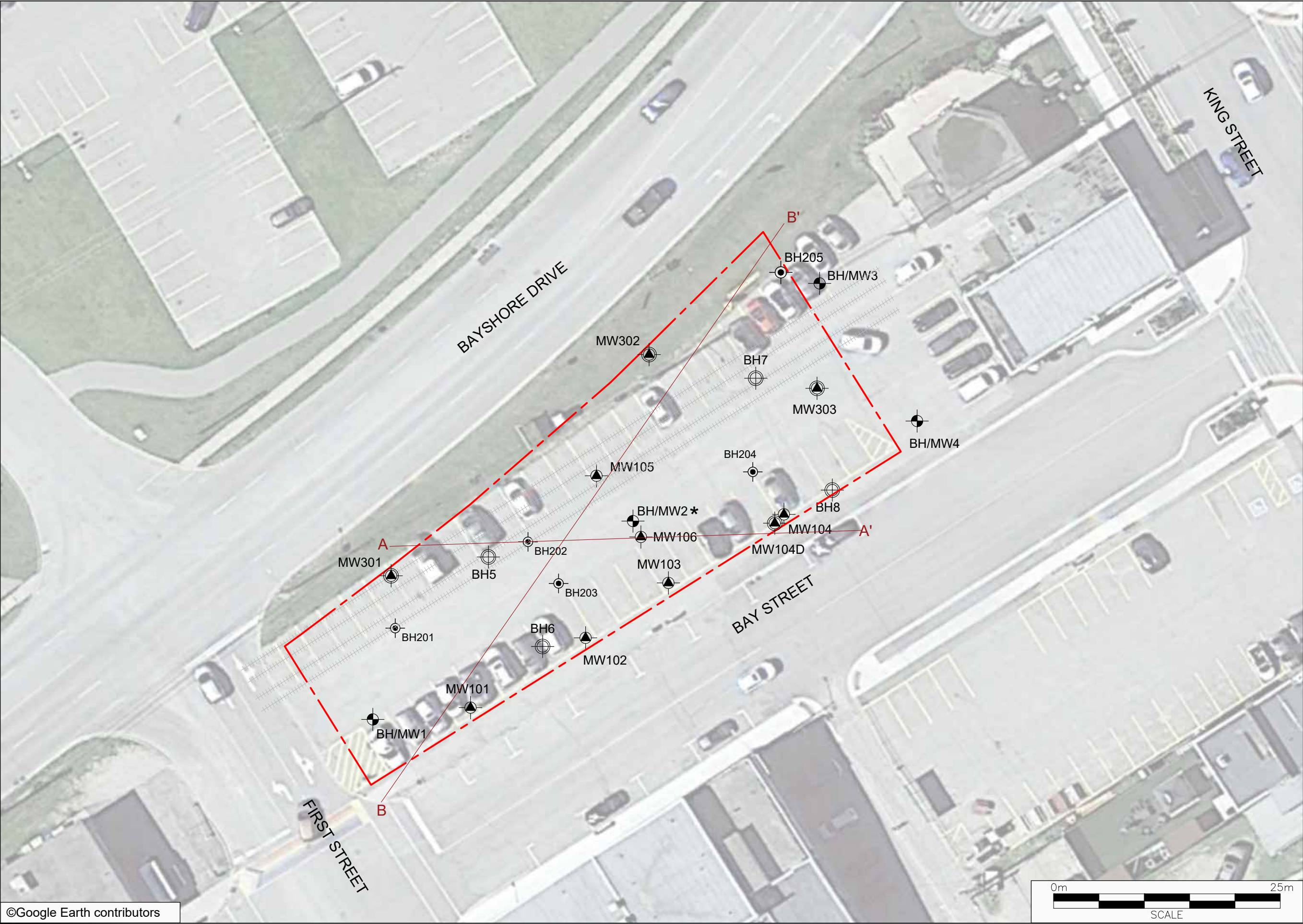
					April 5, 2024			May 2, 2024			June 20, 2024		
Monitoring Well	Ground Surface Elevation (masl)	Top of Pipe Elevation (masl)	Stick-Up Height (metres)	Monitoring Well Screen Interval (mbgs)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)	Groundwater Level to Top of Pipe (mTOP)	Groundwater Below Ground Surface (mbgs)	Calculated Groundwater Elevation (masl)
MW101	181.52	181.41	-0.11	1.5 - 4.6	1.61	1.72	179.80	1.58	1.69	179.83	1.56	1.67	179.85
MW102	181.49	181.38	-0.11	1.5 - 4.6	1.39	1.50	179.99	1.42	1.53	179.96	1.38	1.49	180.00
MW103	181.46	181.38	-0.08	1.5 - 4.6	1.28	1.36	180.10	1.25	1.33	180.13	1.26	1.34	180.12
MW104	181.42	181.32	-0.10	1.5 - 4.6	1.06	1.16	180.26	1.03	1.13	180.29	1.02	1.12	180.30
MW104D	181.42	181.30	-0.12	9.2 - 10.7	1.09	1.21	180.21	1.15	1.27	180.15	1.02	1.14	180.28
MW105	181.19	181.10	-0.09	1.5 - 4.6	1.50	1.59	179.60	1.37	1.46	179.73	1.35	1.44	179.75
MW106	181.37	181.28	-0.09	1.5 - 4.6	1.18	1.27	180.10	1.30	1.39	179.98	1.16	1.25	180.12
MW301	181.52	181.41	-0.11	1.5 - 4.6	1.56	1.67	179.85	1.36	1.47	180.05	-	-	-
MW302	181.37	182.39	1.02	1.5 - 4.6	3.07	2.05	179.32	2.95	1.93	179.44	3.18	2.16	179.21
MW303	181.40	181.29	-0.11	1.5 - 4.6	2.12	2.23	179.17	2.10	2.21	179.19	-	-	-
BH/MW1	181.52	181.39	-0.13	1.5 - 4.5	1.56	1.69	179.83	1.55	1.68	179.84	-	-	-
BH/MW2	181.37	-	-	1.5 - 4.5	-	-	-	-	-	-	-	-	-

Notes:
masl = metres above sea level
mbgs = metres below ground surface

FIGURES



	PROJECT NAME: HYDROGEOLOGICAL ASSESSMENT					
	CLIENT NAME: 2489752 ONTARIO INC.					
	PROJECT LOCATION: 526 BAY STREET, MIDLAND, ONTARIO					
	FIGURE NAME: KEY MAP				FIGURE NUMBER: 1	
	PROJECT NUMBER: 328478.004	SCALE: 1:15,000	DRAWN BY: AMG	REVIEWED BY: BG	DATE: MAY 2026	



LEGEND

- SITE BOUNDARY
- BOREHOLE (PINCHIN, 2023)
- ▲ MONITORING WELL (PINCHIN, 2023)
- ⊙ BOREHOLE (AIMS, 2017)
- ▲ MONITORING WELL (PINCHIN, 2024)
- BOREHOLE/MONITORING WELL (AIM, 2017)
- ++++ FORMER RAILWAY LINE
- * DAMAGED BH/MW
- x-x CROSS-SECTION

LEGEND IS COLOUR DEPENDENT.
NON-COLOUR COPIES MAY ALTER
INTERPRETATION.

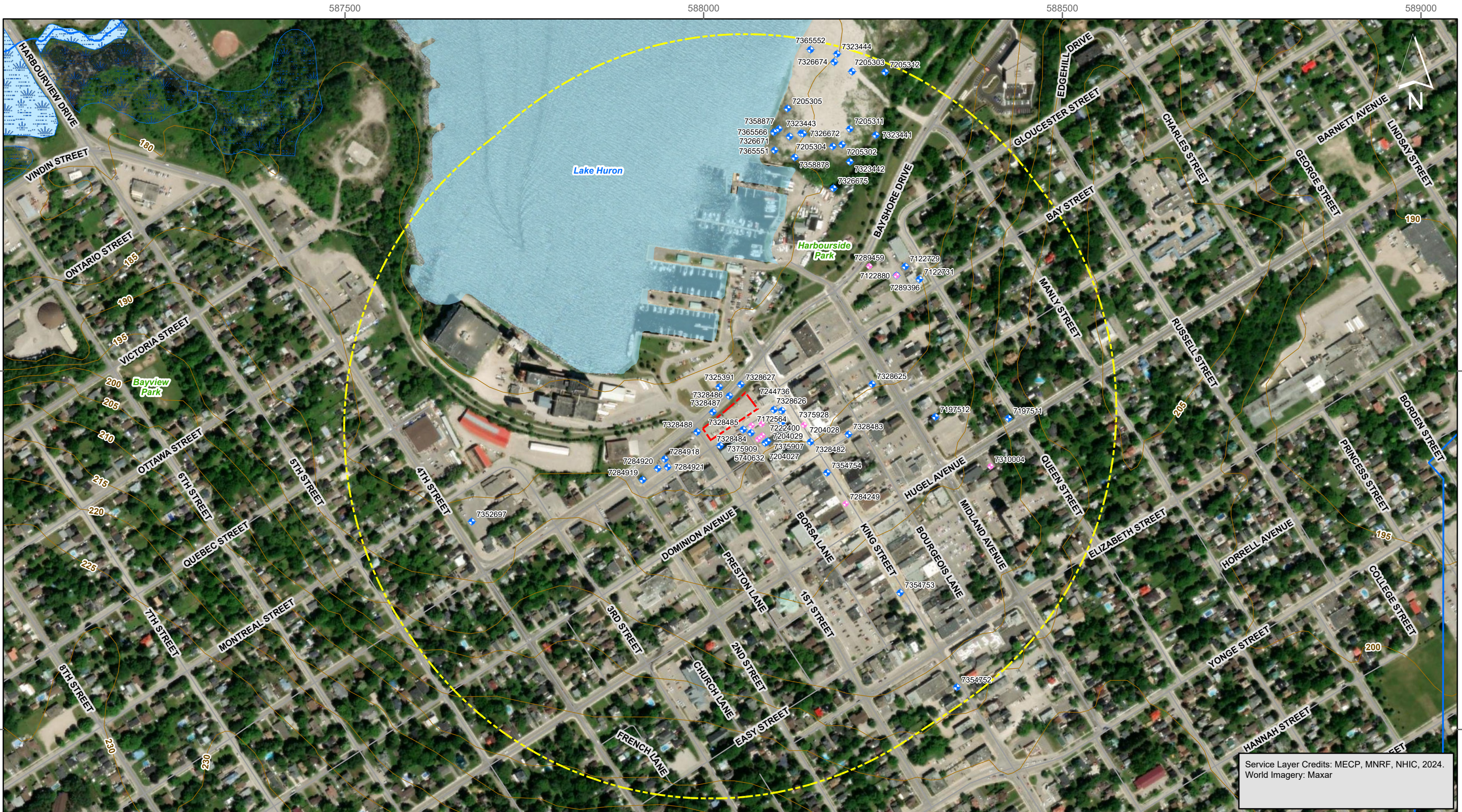
PROJECT NAME:
HYDROGEOLOGICAL
ASSESSMENT

CLIENT NAME:
2489752 ONTARIO INC.

PROJECT LOCATION:
526 BAY STREET,
MIDLAND, ONTARIO

FIGURE NAME:
BOREHOLE AND MONITORING
WELL LOCATION PLAN

PROJECT NUMBER: 328478.004	SCALE: AS SHOWN
DRAWN BY: AMG	REVIEWED BY: BG
DATE: MAY 2026	FIGURE NUMBER: 2



Service Layer Credits: MECP, MNRF, NHIC, 2024.
World Imagery: Maxar



PROJECT NAME: Hydrogeological Assessment
CLIENT NAME: 2489752 Ontario Inc.
PROJECT LOCATION: 526 Bay Street, Midland, Ontario
FIGURE NAME: MECP Water Well Location Plan - 500 m Radius

PROJECT NO. 328478.004
DATE: May 2026
SCALE: 1:5,000
FIGURE NO. 3

- LEGEND**
- Site Boundary
 - 500 m Radius
 - Waterbody
 - Wetland (Unevaluated)
 - Wetland (Evaluated)
 - Watercourse
 - Roadway
 - Topography Contours (5 m)
 - Ontario Water Well Records
 - Monitoring/Observation Well, Test Hole
 - Abandoned Well or well with no details

NOTES

1. All features and measurements are approximate and subject to field verification. This map is for planning purposes only.

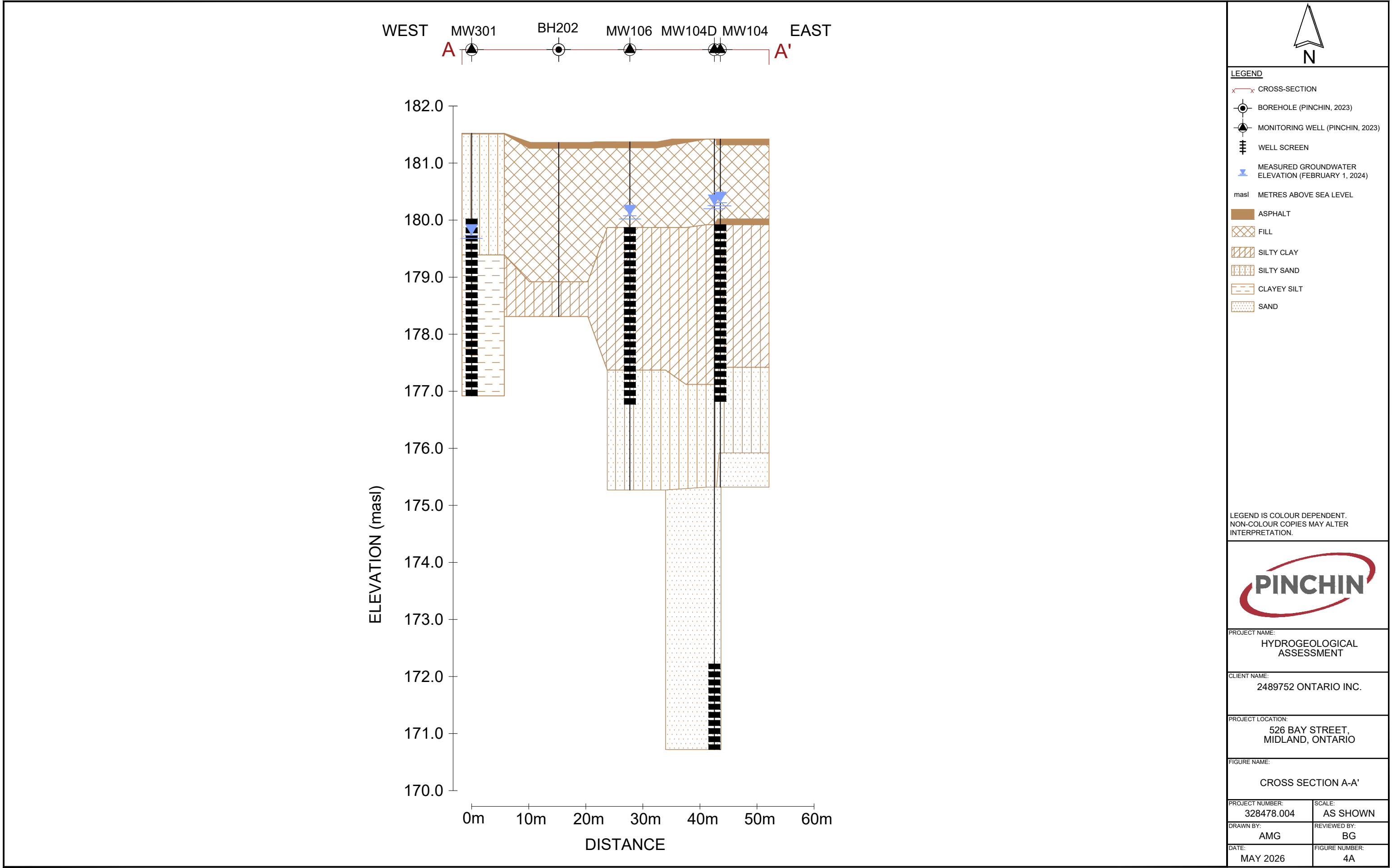
2. Use dimensions as shown, do not scale drawing.

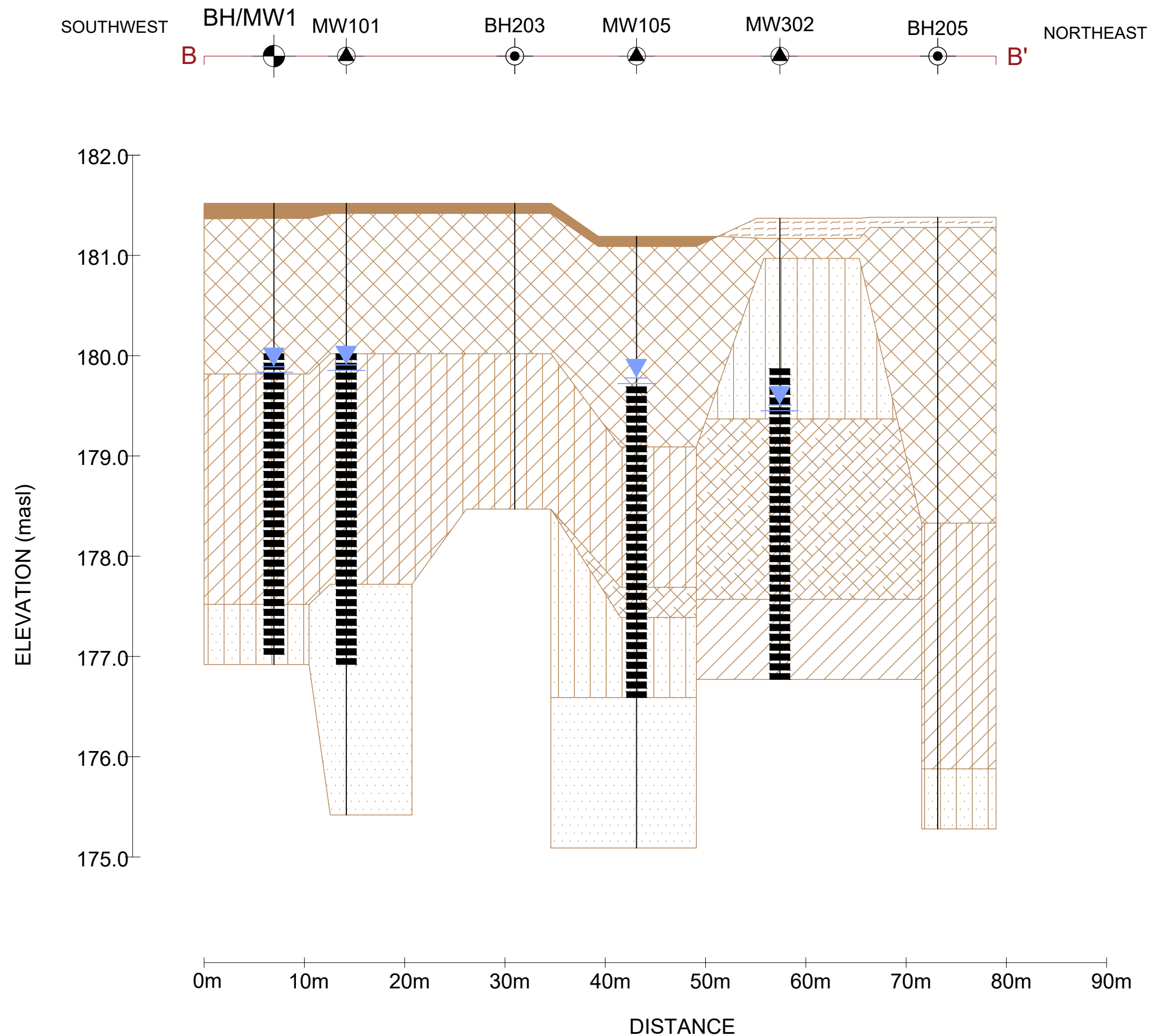
3. This map is not to be used for legal purposes.

0 50 100 200 Metres

Coordinate System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983 CSRS

DRAWN BY: MH REVIEWED BY: BG REVISION: 0





LEGEND

- | | |
|---|--|
|  | CROSS-SECTION |
|  | BOREHOLE (PINCHIN, 2023) |
|  | MONITORING WELL (PINCHIN, 2023) |
|  | WELL SCREEN |
|  | MEASURED GROUNDWATER
ELEVATION (FEBRUARY 1, 2024) |
| masl | METRES ABOVE SEA LEVEL |
|  | ASPHALT |
|  | FILL |
|  | SILTY CLAY |
|  | SILTY SAND |
|  | CLAYEY SILT |
|  | SAND |
|  | TOP SOIL |
|  | SANDY SILT |
|  | CLAYEY SILT |

LEGEND IS COLOUR DEPENDENT.
NON-COLOUR COPIES MAY ALTER
INTERPRETATION.



PROJECT NAME:
**HYDROGEOLOGICAL
ASSESSMENT**

CLIENT NAME:
2489752 ONTARIO INC.

PROJECT LOCATION:
526 BAY STREET,
MIDLAND, ONTARIO

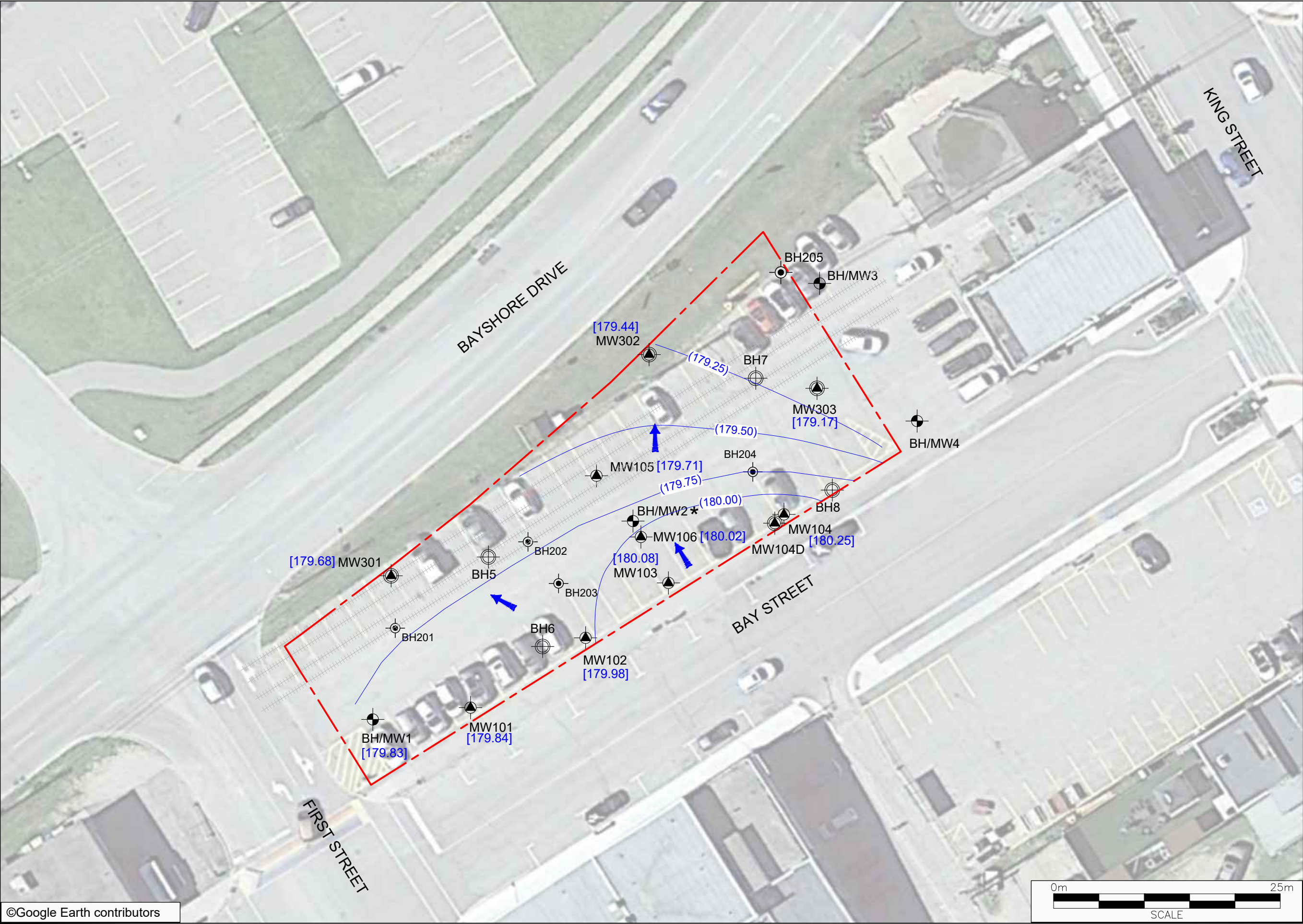
FIGURE NAME:

CROSS SECTION B-B'

PROJECT NUMBER: 328478.004	SCALE: AS SHOWN
-------------------------------	--------------------

DRAWN BY: AMG	REVIEWED BY: BG
------------------	--------------------

DATE:	FIGURE NUMBER:
MAY 2026	4B



LEGEND

- SITE BOUNDARY
- BOREHOLE (PINCHIN, 2023)
- ▲ MONITORING WELL (PINCHIN, 2023)
- ⊙ BOREHOLE (AIMS, 2017)
- ⊙ MONITORING WELL (PINCHIN, 2024)
- ⊙ BOREHOLE/MONITORING WELL (AIM, 2017)
- ++++ FORMER RAILWAY LINE
- * DAMAGED BH/MW
- GROUNDWATER CONTOUR LINES
- ➔ GROUNDWATER FLOW DIRECTION
- [xx.x] GROUNDWATER ELEVATION (MASL) (DECEMBER 8, 2023)
- masl METRES ABOVE SEA LEVEL

LEGEND IS COLOUR DEPENDENT.
NON-COLOUR COPIES MAY ALTER
INTERPRETATION.

PROJECT NAME:
HYDROGEOLOGICAL
ASSESSMENT

CLIENT NAME:
2489752 ONTARIO INC.

PROJECT LOCATION:
526 BAY STREET,
MIDLAND, ONTARIO

FIGURE NAME:
SHALLOW GROUNDWATER
ELEVATIONS AND
INFERRED FLOW DIRECTION

PROJECT NUMBER: 328478.004	SCALE: AS SHOWN
DRAWN BY: AMG	REVIEWED BY: BG
DATE: MAY 2026	FIGURE NUMBER: 5

APPENDIX I
Site Plans



NORTH ELEVATION

1:100



SOUTH ELEVATION

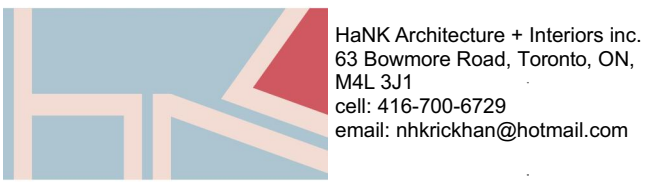
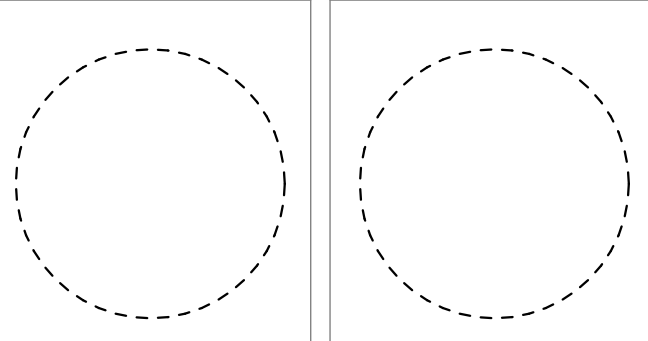
1:100

Legend:

Project North:

Revision	Date	Description

Notes
- Do not scale drawings.
- Drawings remain property of HaNK Architecture + Interiors Inc.



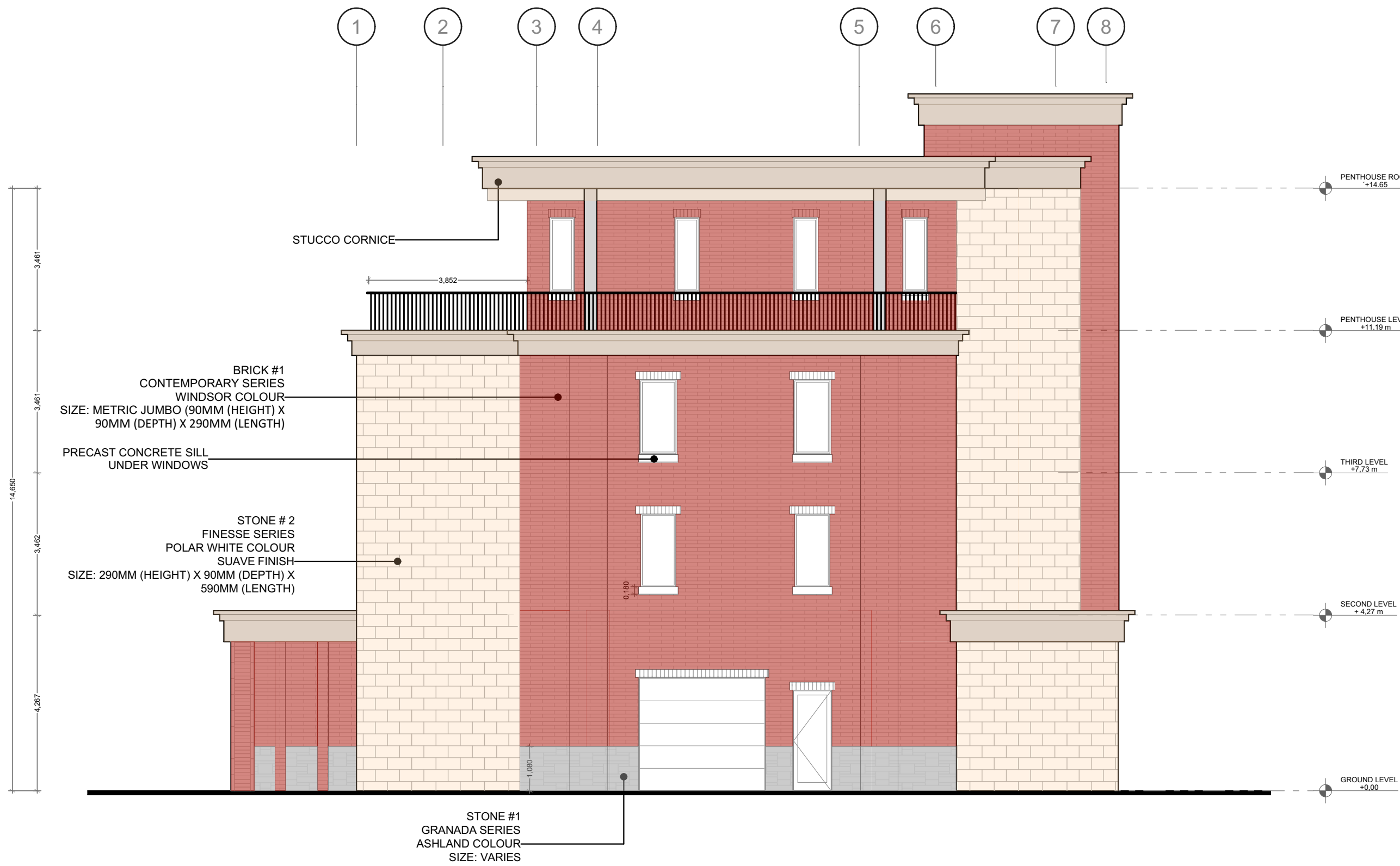
Client:
Louie DeSantis (2489752 Ontario Inc.), 313
Aberdeen Blvd, Midland Ontario, L4R 5M9

Project Title:
526 BAY STREET
MIDLAND, ONTARIO
L4R 3L9

Drawing Title:
NORTH AND SOUTH
ELEVATIONS

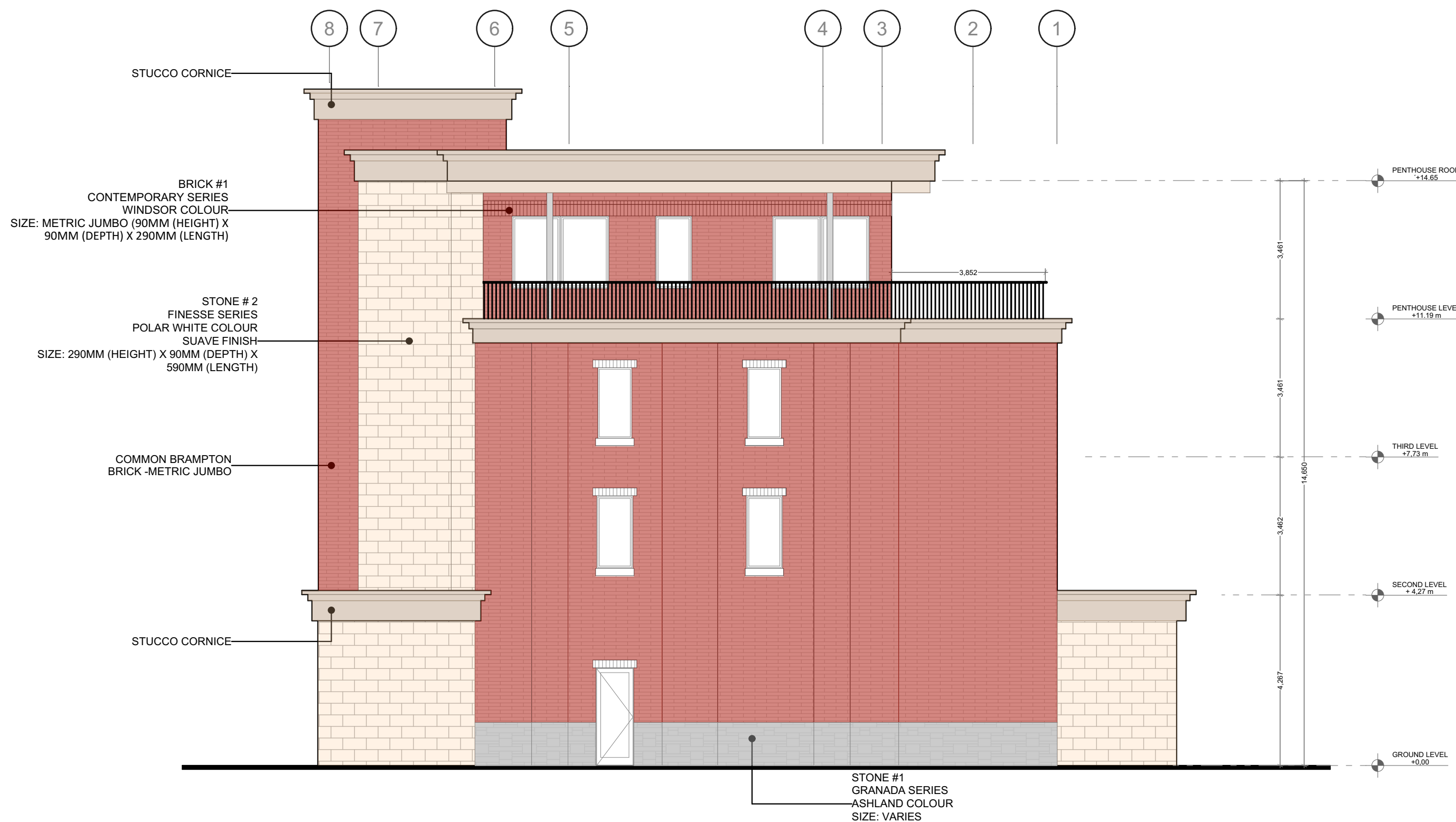
Reviewed: NK	Drawn: NK/LA/AG
Scale: 1:100	Date: 2026-04-20

Project Number:
Drawing Number:
A2.1



WEST ELEVATION

1:100



EAST ELEVATION

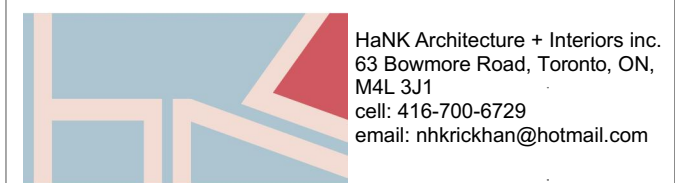
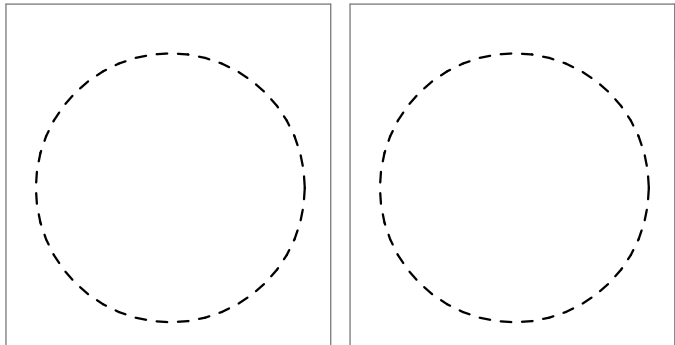
1:100

Legend:

Project North:

Revision	Date	Description

Notes
- Do not scale drawings.
- Drawings remain property of HaNK Architecture + Interiors Inc.



Client:

Louie DeSantis (2489752 Ontario Inc.), 313
Aberdeen Blvd, Midland Ontario, L4R 5M9

Project Title:

526 BAY STREET
MIDLAND, ONTARIO
L4R 3L9

Drawing Title:

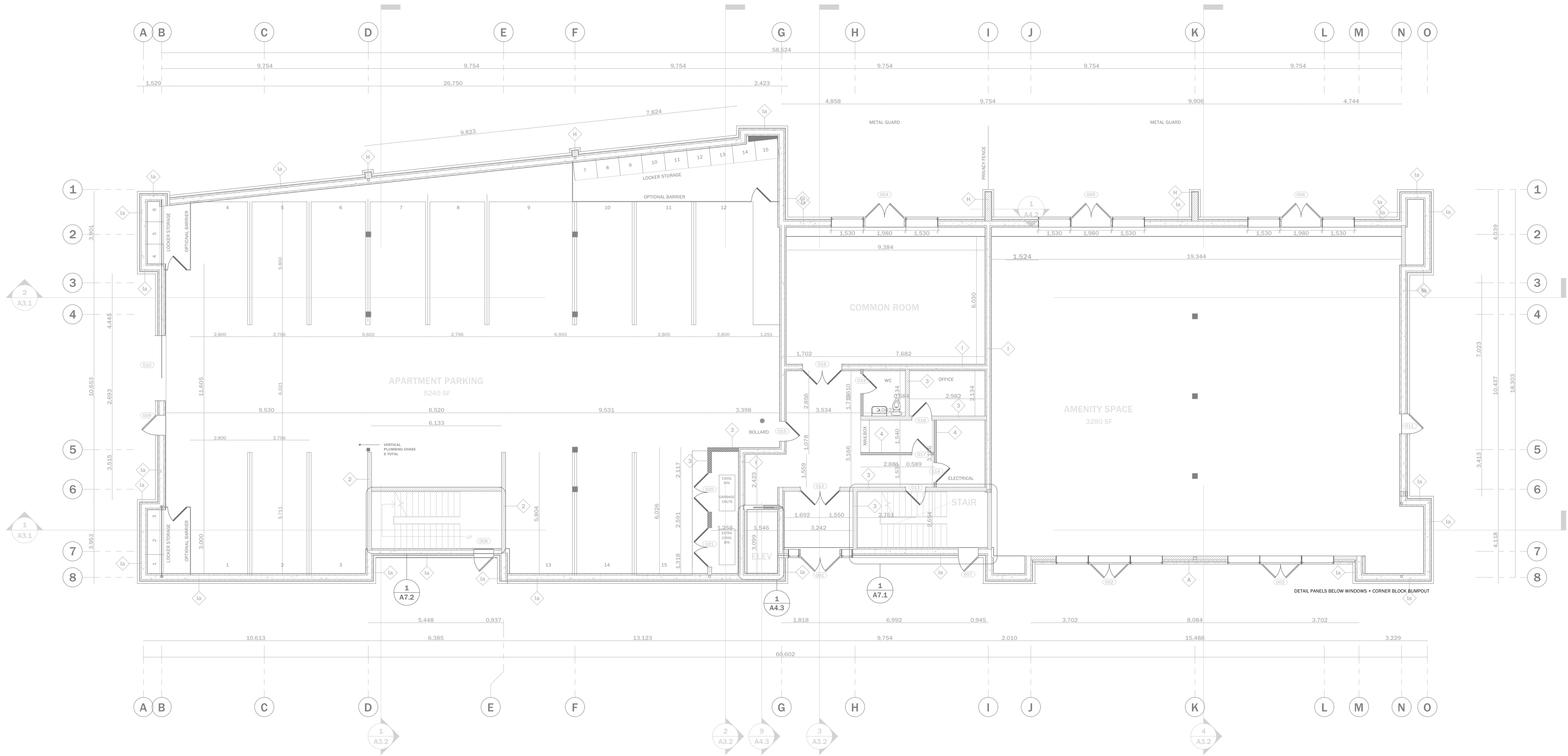
**EAST AND WEST
ELEVATIONS**

Reviewed: NK Drawn: NK/LA/JAG

Scale: 1:100 Date: 2026-04-20

Project Number:

Drawing Number:
A2.2

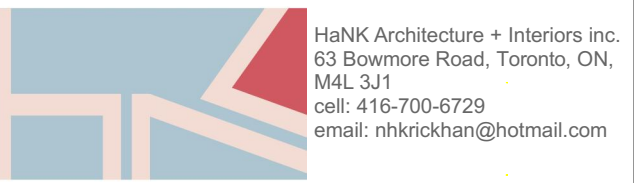
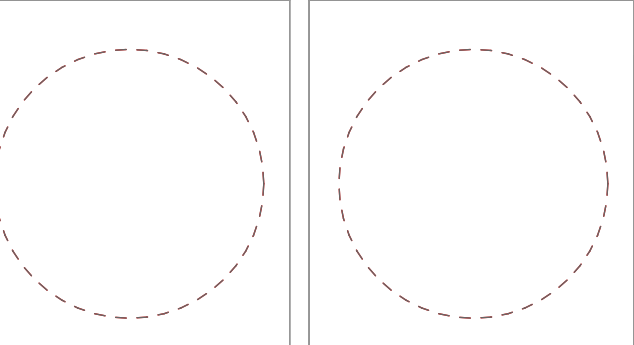


Legend:

Project North:

Revision	Date	Description

Notes
- Do not scale drawings.
- Drawings remain property of HaNK Architecture + Interiors Inc.



Client:

Louie DeSantis (2489752 Ontario Inc.), 313
Aberdeen Blvd, Midland Ontario, L4R 5M9

Project Title:

526 BAY STREET
MIDLAND, ONTARIO
L4R 3L9

Drawing Title:

GROUND FLOOR PLAN

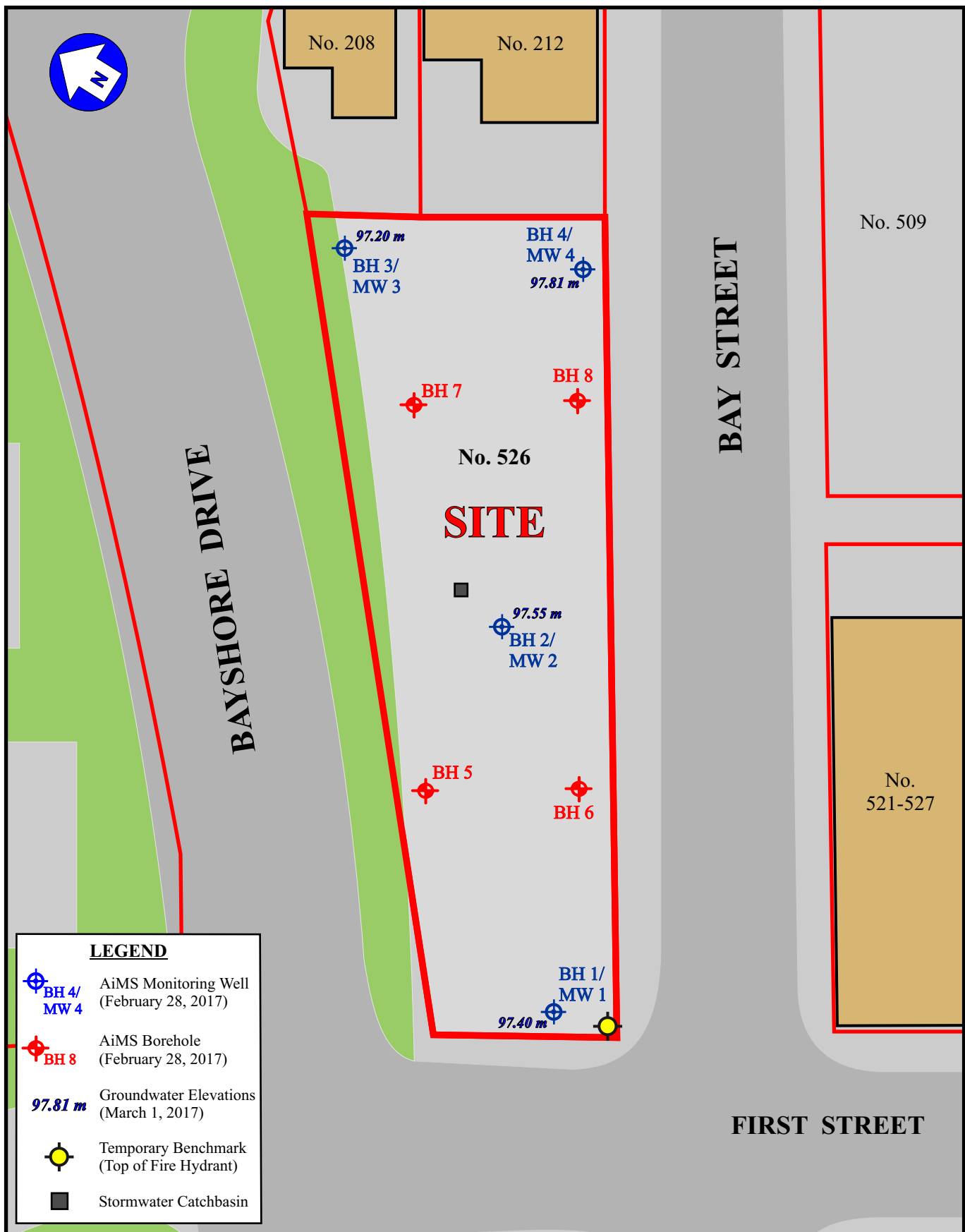
Reviewed: NK	Drawn: NK/LA/AG
Scale: 1:100	Date: 2026-04-28

Project Number:

Drawing Number:
A1.1

APPENDIX II

Data Extracted from Previous Investigation



BOREHOLE LOCATION PLAN

**526 Bay Street
Midland, Ontario**



Date	Scale	Project	Drawing
MAR. 2017	1:500	AR105-17	5



IMPACTED BOREHOLE LOCATIONS

**526 Bay Street
Midland, Ontario**



Date	Scale	Project	Drawing
MAR. 2017	1:500	AR105-17	6

Soil Symbols

	Sand		Silty Sand		Sandy Silt		Clayey Sand
	Sand and Gravel		Gravel		Silt		Clayey Silt
	Clay		Silty Clay		Sandy Silty Clay		Silty Sand and Gravel
	Silty Gravel		Silty Clay and Gravel		Topsoil		Peat
	Limestone		Shale		Fill		

Well Symbols

	Riser with Native Backfill		Riser with Clay Backfill		Riser with Silt Backfill		Riser
	PVC		Riser with Native Backfill		Riser in Bedrock		Bentonite Seal
	Screen with Sand Packing		Screen with Sand and Gravel Packing		Screen with Gravel Packing		Screen
	Screen in Peat		Screen in Limestone		Screen in Shale		Screen

Sample Symbols

	Split Spoon (SS)		Auger (AS)		Core (CS)		Grab (GS)
	Dual Tube (DT)		Excavation		Undisturbed		No Recovery

Log of Borehole No. BH/MW1

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	99.01			OVM		Soil	GW		
0 0		Asphalt Pavement	99								
1 1		Sandy Silt Fill		1	DT	5	No odour				
2 2		some gravel and asphalt pieces; grey/black	98.5	2	DT	10	No odour				
3 1		Sand Fill									
4 1		some gravel; brown	98	3	DT	15	No odour	Metals, PHCs			
5 1		some red and grey brick and mortar debris from 3.5' to 5.5'	97.5								
6 2		Silty Clay		4	DT	ND	No odour				
7 2		trace sand and gravel; brown to grey; wet	97								
8 2			96.5	5	DT	5	No odour				
9 3			96								
10 3			95.5	6	DT	ND	No odour				
11 3			95								
12 3			94.5	7	DT	15	No odour				
13 4		Silty Sand									
14 4		some gravel; grey; wet	94.5								
15 4											
16 5		Borehole terminated at 4.5 m bgs.	94								
17 5											

1.61 m bgs
(March 1, 2017)

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

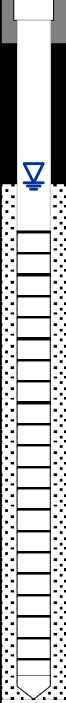
Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH/MW2

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	98.76			OVM		Soil	GW		
0 0		Asphalt Pavement									
1 1		Sand Fill some gravel; brown	98.5	1	DT	10	No odour				
2 1		Miscellaneous Fill brick and mortar debris; red to black with some yellow streaks	98 97.5	2	DT	5	No odour	Metals & PAHs	Metals & VOCs		
3 1		Sandy Silt some clay and trace gravel; grey; wet	97	3	DT	10	No odour	Metals			
4 2		Silty Clay trace sand and gravel; grey; wet	96.5 96	4	DT	10	No odour				
5 3		Silty Sand some gravel; grey; wet	95.5 95 94.5	5 6	DT	15 15	No odour No odour				
6 4		Borehole terminated at 4.5 m bgs.	94								
7 5			93.5								

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH/MW3

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	98.99			OVM		Soil	GW		
0 0		Asphalt Pavement									
1 1		Sandy Silt Fill some gravel; brown	98.5	1	DT	ND	No odour				
2 2		Gravel Fill some sand; grey		2	DT	ND	No odour				
3 1		Sandy Silt Fill some ash and cinders; black	98	3	DT	ND	No odour	Metals			
4 4		Silty Sand Fill some gravel; brown	97.5	4	DT	ND	No odour				
5 5		Sandy Silt Fill some ash, cinders and glass fragments; black	97	5	DT	30	No odour	Metals & PAHs	Metals, VOCs & PAHs		
6 2		Sandy Silt some clay and trace gravel; grey; wet	96.5	6	DT	5	No odour				
7 7		Silty Clay trace sand and gravel; grey; wet	96	7	DT	ND	No odour				
8 8		Silty Sand some gravel; grey; wet	95.5	8	DT	ND	No odour				
9 9			95								
10 3			94.5								
11 11			94								
12 12											
13 4											
14 14											
15 15											
16 5											
17 17											

1.79 m bgs
(March 1, 2017)

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH/MW4

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	98.93			OVM		Soil	GW		
0 0		Asphalt Pavement									
1 1		Sandy Silt Fill some gravel; dark brown with trace black streaks	98.5	1	DT	10	No odour	Metals			
2 2			98								
3 1											
4 4		Silty Sand Fill some gravel; brown to dark brown	97.5	2	DT	ND	No odour				
5 5											
6 2		Silty Clay some sand and gravel; brown grey; wet	97	3	DT	ND	No odour				
7 7			96.5	4	DT	15	No odour				
8 8											
9 3		Silty Sand some gravel and trace clay; grey; wet	96	5	DT	20	No odour				
10 10			95.5	6	DT	65	No odour	VOCs, pH & Grain Size			
11 11			95								
12 4		Medium Sand reddish brown; wet	94.5	7	DT	15	No odour				
13 13											
14 14											
15 5		Borehole terminated at 4.5 m bgs.	94								
16 16			93.5								
17 17											

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH5

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	99.00			OVM		Soil	GW		
0 0		Asphalt Pavement	99								
1 1		Sand Fill some gravel; brown	98.5	1	DT	10	No odour				
2 1			98								
3 1											
4 1		Silty Sand Fill some gravel and brick pieces; brown with black and red streaks	97.5	2	DT	60	No odour	Metals & PAHs			
5 2			97	3	DT	30	No odour				
6 2		Sandy Silt some clay and trace gravel; grey; wet	96.5	4	DT	25	No odour				
7 2											
8 2											
9 3			96								
10 3		Borehole terminated at 3.0 m bgs.	95.5								
11 3											
12 3											

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH6

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	99.01			OVM		Soil	GW		
0 0		Asphalt Pavement	99					Metals & pH			
1 1		Sand Fill some gravel; brown	98.5	1	DT	10	No odour				
2 1			98	2	DT	15	Faint sewage odour				
3 1		Silty Sand Fill some gravel; brown to dark brown with trace black streaks	97.5	3	DT	20	No odour				
4 2		Sandy Silt some clay and trace gravel; brown to grey; wet	97	4	DT	ND	No odour				
5 2			96.5								
6 2		Silty Clay some sand and trace gravel; brown to grey; wet	96								
7 3			95.5								
8 3		Borehole terminated at 3.0 m bgs.									
9 3											
10 3											
11 3											
12 3											

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH7

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	98.86			OVM		Soil	GW		
0 0		Asphalt Pavement									
1 0		Sand Fill	98.5								
2 0		some gravel; brown with trace black streaks		1	DT	5	No odour	Metals & PAHs			
3 1			98								
4 1		Sandy Silt Fill	97.5	2	DT	5	No odour				
5 1		some gravel; brown									
6 2		Silty Sand Fill	97	3	DT	95	No odour	VOCs			
7 2		some gravel; dark brown with trace yellow streaks									
8 2		Fine Sand	96.5	4	DT	25	Decaying organics odour				
9 3		some silt; dark brown to dark grey									
10 3		Silty Clay	96	5	DT	5	No odour				
11 3		trace sand and gravel; brown to grey	95.5								
12 3		Borehole terminated at 3.0 m bgs.	95								

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

Log of Borehole No. BH8

SUBSURFACE PROFILE				SAMPLE				LABORATORY		WELL DATA	
Depth	Symbol	Lithographic Description	Elevation (m)	Number	Type	Vapour Screening (ppm or %LEL)	Remarks	Laboratory Analysis		Well Construction	Monitoring Data
ft m		Ground Surface	98.91			OVM		Soil	GW		
0 0		Asphalt Pavement									
1 1		Sandy Silt Fill some gravel; dark brown with trace black streaks	98.5	1	DT	15	No odour	Metals			
2 1		Sand Fill some gravel; brown	98	2	DT	10	No odour				
3 1		Brick Debris red	97.5	3	DT	15	No odour				
4 1		Concrete/Mortar Debris grey	97	4	DT	55	Faint mildew odour	VOCs			
5 2		Silty Clay trace sand and gravel; brown to grey	96.5	5	DT	15	No odour				
6 2			96								
7 3			95.5								
8 3			95								
9 3											
10 3											
11 3											
12 3											

Drill Date: 02/28/2017

AiMS Field Supervisor: DK

Approved By: FF

Contractor: Strata Drilling Group

Borehole Ø: 50 mm

Equipment: Geoprobe 7822DT Direct Push with Dual Tube Samplers

Well Ø: 32 mm

APPENDIX III
BH Logs



Log of Borehole: MW101

Project #: 328478.002

Logged By: BG

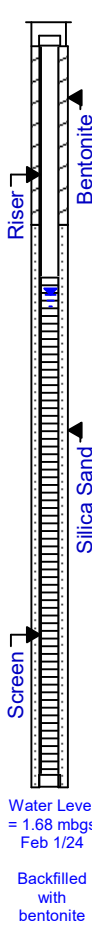
Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE												
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value			Shear Strength		Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
									20	40	60	Δ kPa	Δ 100 200				
0		Ground Surface	181.52														
		Asphalt 100 mm thick	0.00		SS	1	75	7						15.7	MW101 S1	0/0	VOCs, Metals, PHCs, PAHs
		Sand and Gravel Fill Brown, sand and gravel fill, red brick debris, frequent silt inclusions, loose, moist to wet.			SS	2	0	5							MW101 S2	-	
1			180.00														
		Silty Clay Brown, silty clay with some sand, trace gravel, firm, WTPL	1.52		SS	3	50	1						24.6	MW101 S3	0/0	VOCs, Metals, PHCs, PAHs
2			179.23														
		Silty Clay Grey, silty clay with trace sand and gravel, firm, WTPL	2.29		SS	4	100	0						46.8	MW101 S4	0/0	
3			177.71														
		Sand Brown, sand (medium to coarse) with trace silt, loose, saturated	3.81	SS	5	100	1						55.9	MW101 S5	1/1		
4			176.95														
		Sand Brown, sand (medium to coarse) with trace silt and fine gravel, compact to very dense, saturated	4.57	SS	6	50	8						15.9	MW101 S6	8/12		
5			175.42														
		Sand Brown, sand (medium to coarse) with trace silt and fine gravel, compact to very dense, saturated	4.57	SS	7	75	17						16.8	MW101 S7	0/0		
6			175.42														
		Sand Brown, sand (medium to coarse) with trace silt and fine gravel, compact to very dense, saturated	4.57	SS	8	75	62						13.5	MW101 S8	0/0		
6		End of Borehole	6.10														

Contractor: Strata Drilling Group

Grade Elevation: 181.52 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: 181.41 masl

Well Casing Size: 5.08 cm

Sheet: 1 of 1



Log of Borehole: MW101A

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE									
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value 20 40 60	Shear Strength kPa	Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface Unsampled DCPT completed from ground surface to 5.8 mbgs. Refer to log of MW101 for soil stratigraphy.	181.52 0.00	No Monitoring Well Installed	DCP	1		7						
					DCP	2		7						
					DCP	3		6						
1					DCP	4		3						
					DCP	5		2						
					DCP	6		0						
2					DCP	7		2						
					DCP	8		2						
					DCP	9		2						
3					DCP	10		2						
					DCP	11		2						
					DCP	12		9						
4					DCP	13		9						
					DCP	14		11						
					DCP	15		12						
					DCP	16		14						
5					DCP	17		30						
					DCP	18		65						
					DCP	19		>30						
6		End of Borehole	175.73 5.79											

Contractor: Strata Drilling Group

Grade Elevation: 181.52 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: NA

Well Casing Size: 5.08 cm

Sheet: 1 of 1



Log of Borehole: MW102

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 22, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.49					
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Some black staining, fill material, moist			50	MW102 S1	2/0	Metals, PHCs, PAHs, BTEX
2								
3								
4		Silty Clay Brown to grey, moist to wet (wet at 1.98 mbgs)	180.27			MW102 S2	0/0	
5			1.22					
6						MW102 S3	0/0	VOCs, Metals, PHCs, PAHs, pH
7					80			
8						MW102 S4	0/0	
9								
10								
11						MW102 S5	1/0	VOCs, Metals, PHCs, PAHs
12					80			
13			177.38			MW102 S6	0/0	
14		Silty Sand Grey, wet	4.11					
15						MW102 S7	0/0	
16					100			
17						MW102 S8	0/0	
18								
19								
20			175.39					
21		End of Borehole	6.10					
22								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.49 masl

Top of Casing Elevation: 181.38 masl

Sheet: 1 of 1



Log of Borehole: MW103

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 24, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE														
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value □ 20 40 60 □			Shear Strength Δ kPa Δ 100 200		Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis		
0		Ground Surface	181.46	Riser Bentonite Silica Sand Screen Water Level = 1.38 mbgs Feb 1/24 Backfilled with bentonite															
		Asphalt 100 mm thick	0.00		SS	1	50	22								MW103 S1	12/18	Metals, PHCs, PAHs, BTEX	
		Sand and Gravel Fill Brown, sand and gravel fill, trace clay, slight PHC-like odour, loose, moist	180.70		SS	2	50	5						9.9		MW103 S2	8/15	VOCs, Metals, PAHs	
1		Silty Sand Fill Brown, silty sand fill with trace gravel, some black staining, loose, moist to wet	179.94																
		Silty Clay Grey/brown, silty clay with trace to some sand, firm, WTPL	179.33		SS	3	25	3						21.9		MW103 S3	0/1	VOCs	
2		Silty Clay Grey, silty clay, firm, WTPL	2.13																
					SS	4	100	0						60.4		MW103 S4	0/0	VOCs, Metals, PHCs, PAHs	
3		No Recovery	178.41																
			177.80			SS	5	0	>50								MW103 S5	-	
4		Sand Flowing sand, loose	3.66		SS	6	0	0								MW103 S6	-		
5					SS	7	0	1								MW103 S7	-		
			175.67		SS	8	0	>50								MW103 S8	-		
6		Sand Dense	5.79																
			175.36																
		End of Borehole	6.10																

Contractor: Strata Drilling Group

Grade Elevation: 181.46 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: 181.38 masl

Well Casing Size: 5.08 cm

Sheet: 1 of 1



Log of Borehole: MW103A

Project #: 328478.001

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE									
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value 20 40 60	Shear Strength kPa	Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface	181.46	No Monitoring Well Installed										
		Unsampled DCPT completed from ground surface to 6.4 mbgs. Refer to log of MW103 for soil stratigraphy.	0.00		DCP	1		52						
					DCP	2		22						
					DCP	3		5						
1					DCP	4		3						
					DCP	5		3						
					DCP	6		2						
2					DCP	7		3						
					DCP	8		2						
					DCP	9		2						
3					DCP	10		3						
					DCP	11		3						
					DCP	12		2						
4					DCP	13		23						
					DCP	14		37						
					DCP	15		15						
5					DCP	16		10						
					DCP	17		9						
					DCP	18		13						
					DCP	19		16						
6					DCP	20		34						
					DCP	21		>30						
		End of Borehole	175.06 6.40											

Contractor: Strata Drilling Group

Grade Elevation: 181.46 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: NA

Well Casing Size: 5.08 cm

Sheet: 1 of 1



Log of Borehole: MW104

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 22, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.42		50			
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown, sand and gravel fill with brick debris, moist				MW104 S1	0/0	Metals, PHCs, PAHs, BTEX
2								
3			180.35			MW104 S2	0/0	
4		Clayey Silt Fill Brown, clayey silt fill, moist	1.07					
5								
6		Asphalt Black, asphalt debris, 100 mm thick				MW104 S3	0/2	Metals, PHCs, PAHs, BTEX
7								
8		Silty Clay Grey to grey/brown to grey, some sand, moist to wet (wet at 2.13 mbgs), slight PHC-like odour and slight black staining from 1.52 to 2.13 mbgs			100	MW104 S4	0/0	BTEX, VOCs, Metals, PAHs
9								
10								
11						MW104 S5	0/0	
12								
13			177.45		100	MW104 S6	0/0	
14		Silty Sand Grey, some gravel, moist	3.96					
15								
16			176.39					
17		Silty Sand Grey, some clay, wet, slight PHC-like odour	5.03					
18			175.93		100	MW104 S7	0/0	
19		Sand Flowing sand	5.49					
20			175.32					
21		End of Borehole	6.10					
22								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.42 masl

Top of Casing Elevation: 181.32 masl

Sheet: 1 of 1



Log of Borehole: MW104D

Project #: 328478.002

Logged By: MG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: January 17, 2024

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.42		50			
0		Sand and Gravel Fill Brown, sand and gravel fill with brick debris, moist	0.00					
1					100	MW104D S1	20/0	
2						MW104D S2	0/1	
3						MW104D S3	25/0	
4					100	MW104D S4	10/0	PHCs, BTEX
5						MW104D S5	5/0	
6						MW104D S6	0/0	
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.42 masl

Top of Casing Elevation: 181.30 masl

Sheet: 1 of 2



Log of Borehole: MW104D

Project #: 328478.002

Logged By: MG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: January 17, 2024

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
19	6	Silty Sand Grey with some coarse sand and gravel seams, wet at 5.18 to 6.08 mbgs	175.32					
20		Sand Grey, some gravel, wet	6.10			MW104D S7	40/1	
21	7				100	MW104D S8	30/2	
22								
23								
24	8							
25								
26								
27								
28	9							
29								
30								
31	10							
32								
33								
34								
35								
36		End of Borehole	170.75 10.67	Water level = 1.22 mbgs Feb 1/24				

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.42 masl

Top of Casing Elevation: 181.30 masl

Sheet: 2 of 2



Log of Borehole: MW105

Project #: 328478.002

Logged By: BG

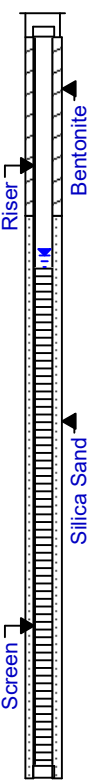
Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE												
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value 20 40 60			Shear Strength Δ kPa Δ 100 200		Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface	181.19														
		Asphalt 100 mm thick	0.00		SS	1	50	11					5.4	MW105 S1	0/0	Metals, PAHs	
		Sand and Gravel Fill Brown, sand and gravel fill, trace silt, with some clay, loose, moist			SS	2	50	3					28.0	MW105 S2	12/5	VOCs, Metals, PHCs, PAHs	
1		Brick debris 50 mm thick	179.97														
		Clayey Silt Fill Black, clayey silt fill with some organics, black staining and slight PHC-like odour, firm, moist	1.22		SS	3	25	2					46.5	MW105 S3	13/7		
2		Silty Clay Grey, silty clay, some sand, firm, WTPL	179.06		SS	4	50	1					25.1	MW105 S4	5/0	VOCs, Metals, PHCs, PAHs	
		Sandy Silt Grey, sandy silt with some gravel, compact, wet	2.13		SS	5	100	14					31.4	MW105 S5	0/0		
		Silty Sand Grey, silty sand with trace clay, dense, wet	3.51														
4		Sand Grey, flowing sand with trace silt, dense wet	177.38	Water Level = 1.48 mbgs Feb 1/24 Backfilled with bentonite	SS	6	50	38					17.7	MW105 S6	0/1		
			3.81														
			4.57		SS	7	12.5	48					17.4	MW105 S7	-		
5					SS	8	0	45						MW105 S8	-		
6		End of Borehole	175.09														
			6.10														

Contractor: Strata Drilling Group

Grade Elevation: 181.19 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: 181.10 masl

Well Casing Size: 5.08 cm

Sheet: 1 of 1



Log of Borehole: MW106

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 22, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.37					
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown, sand and gravel fill with some clay, red brick debris, and glass, black staining from 1.37 to 1.52 mbgs, moist			40	MW106 S1	0/4	
2								
3								
4			179.85					
5		Silty Clay Brown to grey, silty clay with some sand, moist to wet	1.52			MW106 S2	0/0	VOCs, Metals, PAHs
6					100	MW106 S3	0/0	
7								
8								
9								
10								
11								
12								
13			177.41		100	MW106 S4	0/0	VOCs, Metals
14		Silty Sand Grey, silty sand to flowing silty sand, wet	3.96			MW106 S5	0/0	
15								
16								
17								
18								
19					80	MW106 S6	0/0	
20			175.27					
21		End of Borehole	6.10					
22								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 181.37 masl

Top of Casing Elevation: 181.28 masl

Sheet: 1 of 1



Log of Borehole: BH201

Project #: 328478.001

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.52	No Monitoring Well Installed				
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown, brick debris, black staining from 0.46 to 0.76 mbgs, moist			50	BH201 S1	0/2	VOCs, Metals, PHCs, PAHs
2								
3			180.45					
4		Silty Clay Dark brown to grey, with sand, moist to wet	1.07			BH201 S2	0/0	
5				100				
6						BH201 S3	0/0	
7		Wet at 2.13 mbgs						
8						BH201 S4	0/0	
9								
10			178.47					
11		End of Borehole	3.05					

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: N/A

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 181.52 masl

Top of Casing Elevation: N/A

Sheet: 1 of 1



Log of Borehole: BH202

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.36	↑ No Monitoring Well Installed ↓				
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown to black, moist, slight PHC-like odour from 1.52 to 2.44 mbgs			40	BH202 S1	0/0	Metals, PAHs
2								
3								
4								
5								
6								
7	Silty Clay Grey, wet		178.92	↑ No Monitoring Well Installed ↓	60	BH202 S2	8/5	VOCs, Metals, PHCs, PAHs
8			2.44					
9								
10			178.31					
11		End of Borehole	3.05					



Log of Borehole: BH203

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 23, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.44	No Monitoring Well Installed				
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown, moist			50	BH203 S1	1/2	VOCs, Metals, PHCs, PAHs, pH
5			179.92					
5		Silty Clay Brown to grey, moist to wet (grey/wet at 2.29 mbgs)	1.52		70	BH203 S2	0/0	
8						BH203 S3	0/0	VOCs, Metals, PHCs, PAHs
10		End of Borehole	178.39					
10			3.05					

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: N/A

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 181.44 masl

Top of Casing Elevation: N/A

Sheet: 1 of 1



Log of Borehole: BH204

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 22, 2023

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.37	No Monitoring Well Installed				
0		Asphalt 100 mm thick	0.00					
1		Sand and Gravel Fill Brown, red brick debris, moist						
2					40	BH204 S1	5/3	Metals, PAHs
3								
4			180.15					
4		Silty Clay Black to brown to grey, moist to wet (wet at 1.52 mbgs)	1.22			BH204 S2	1/1	Metals, PAHs
5								
6						BH204 S3	0/1	Metals, PAHs
7								
8					90			
9						BH204 S4	0/0	
10			178.32					
10		End of Borehole	3.05					
11								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: N/A

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 181.37 masl

Top of Casing Elevation: N/A

Sheet: 1 of 1



Log of Borehole: BH205

Project #: 328478.002

Logged By: BG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: November 24, 2023

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE									
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value □ 20 40 60 □	Shear Strength Δ kPa Δ 100 200	Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface	181.38	No Monitoring Well Installed										
		Topsoil Fill 100 mm thick	0.00		SS	1	50	20			7.8	BH205 S1	0/0	
		Sand and Gravel Fill Brown, sand and gravel fill with some concrete debris and trace rootlets, compact, moist	180.62											
1		Silty Sand Fill Brown, silty sand fill with trace gravel, compact, moist	179.86		SS	2	25	21			9.1	BH205 S2	0/0	
		Sandy Silt Fill Brown, sandy silt fill with some asphalt debris and trace organic silt inclusions, some black staining with PHC-like odours from 1.98 to 2.29 mbgs, very loose to compact, moist; organics and decaying wood from 2.44 to 2.89 mbgs	1.52		SS	3	50	22			19.6	BH205 S3	15/22	VOCs, Metals, PHCs, PAHs
2														
					SS	4	50	1			38.6	BH205 S4	3/5	
3		Silty Clay Brown to grey, silty clay, firm, WTPL	178.33											
			3.05		SS	5	100	0			52.6	BH205 S5	0/0	
			177.57											
4		Silty Clay Grey silty clay with trace gravel below 4.57 mbgs, firm, WTPL	177.57		SS	6	100	0				BH205 S6	0/0	
			3.81											
					SS	7	75	3				BH205 S7	0/0	
5														
			175.89											
		Silty Sand Grey, silty sand with trace gravel, compact, saturated	5.49		SS	8	12.5	10				BH205 S8	0/0	
6			175.28											
		End of Borehole	6.10											

Contractor: Strata Drilling Group

Grade Elevation: 181.38 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: N/A

Well Casing Size: N/A

Sheet: 1 of 1



Log of Borehole: MW301

Project #: 328478.002

Logged By: MG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: January 16, 2024

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0 ft 0 m		Ground Surface	181.52					
1		Asphalt 50 mm thick	0.00					
2		Silty Sand Brown, some organic material, moist			40	MW301 S1	25/0	PHCs, PAHs, BTEX
3								
4								
5		Moist to wet at 1.52 mbgs	180.00			MW301 S2	10/0	Metals
6			1.52					
7			179.39					
8		Clayey Silt Black and moist from 2.13 to 2.28 mbgs	2.13		70	MW301 S3	30/0	
9		Grey and wet from 2.28 to 4.57 mbgs						
10								
11						MW301 S4	0/1	
12								
13					100	MW301 S5	0/1	
14								
15		End of Borehole	176.95					
16			4.57					
17				Water Level = 1.84 mbgs Feb 1/24				
18								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.52 masl

Top of Casing Elevation: 181.41 masl

Sheet: 1 of 1



Log of Borehole: MW302

Project #: 328478.002

Logged By: MG

Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: January 16, 2024

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	181.37					
0		Topsoil	0.00					
1		Fill						
2		Brown sand and gravel. Approximately 50 mm of asphalt was present from 0.30 to 0.35 mbgs, followed by approximately 50 mm of brown sand			50	MW302 S1	0/0	PHCs, PAHs, Metals, BTEX
3		Silty Sand						
4		Brown and grey, some gravel, moist to wet						
5								
6			179.39			MW302 S2	0/0	PHCs, BTEX
7		Sandy Silt	1.98					
8		Black, PHC-like odour, trace organic material, moist			100	MW302 S3	0/0	
9								
10			178.32					
11		Black, wet	3.05			MW302 S4	45/1	PHCs, BTEX
12			177.56					
13		Clayey Silt	3.81		100	MW302 S5	0/0	
14		Black and moist from 2.13 to 2.28 mbgs						
15		Greyish-brown and wet from 2.28 to 4.57 mbgs	176.80					
16		End of Borehole	4.57					
17								
18								

Contractor: Strata Drilling Group

Drilling Method: Geoprobe 7822 DT

Well Casing Size: 5.08 cm

Note:

* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a combustible gas indicator (CGI) and a photoionization detector (PID).

Grade Elevation: 181.37 masl

Top of Casing Elevation: 182.39 masl

Sheet: 1 of 1



Log of Borehole: MW303

Project #: 328478.002

Logged By: MG

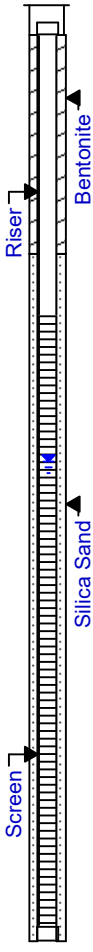
Project: Phase Two Environmental Site Assessment

Client: 2489752 Ontario Inc.

Location: 526 Bay Street, Midland, Ontario

Drill Date: January 16, 2024

Project Manager: MC

SUBSURFACE PROFILE					SAMPLE									
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value □ 20 □ 40 □ 60	Shear Strength Δ kPa Δ 100 200	Water Content (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface	181.42											
		Asphalt 24 mm thick	0.00		SS	1	75	16				MW303 S1	0/0	PHCs, PAHs, BTEX
		Sand and Gravel Fill Brown, sand and gravel fill, compact, moist												
1		Silty Sand Fill Brown, sand and gravel fill, compact, moist	180.35 1.07		SS	2	50	22				MW303 S2	25/0	PHCs, PAHs, Metals, BTEX
					SS	3	25	2				MW303 S3	20/0	
2		Black and dark brownish red, some gravel and brick debris, very loose, wet at 1.98 to 2.29 mbgs	179.44 1.98	Silica Sand										
		Silty Clay Brownish grey, very soft, wet	179.13 2.29		SS	4	100	0				MW303 S4	40/0	
3		Grey at 3.05 mbgs, very soft	178.37 3.05	Screen	SS	5	100	0				MW303 S5	5/1	
					SS	6	75	33				MW303 S6	25/1	
4		Silty Sand Grey, some gravel, very loose, wet	177.61 3.81											
		End of Borehole	176.85 4.57											
5				Water Level = 2.23 mbgs Feb 1/24										

Contractor: Strata Drilling Group

Grade Elevation: 181.42 masl

Drilling Method: Geoprobe 7822 DT

Top of Casing Elevation: 181.31 masl

Well Casing Size: 5.08 cm

Sheet: 1 of 1

APPENDIX IV
Hydraulic Conductivity Test Results

Slug Test: MW101**Project No.: 328478****Project Location: 526 Bay Street, Midland, ON**

Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024

Conducted by: MG/JP

Interpreted by: Bujing Guan

H = Initial Water Head prior to test

Processing Date: 03/04/24

Ho = Water Head at time = 0

Screen Depth (mbgs): 1.5 - 4.6

h = Water Head/Level at time t

Screened Soil: silty clay; sand

Well Diameter: 2"

L = 291 cm

Static Water Level (mbgs): 1.69

R (6' auger) = 7.62 cm

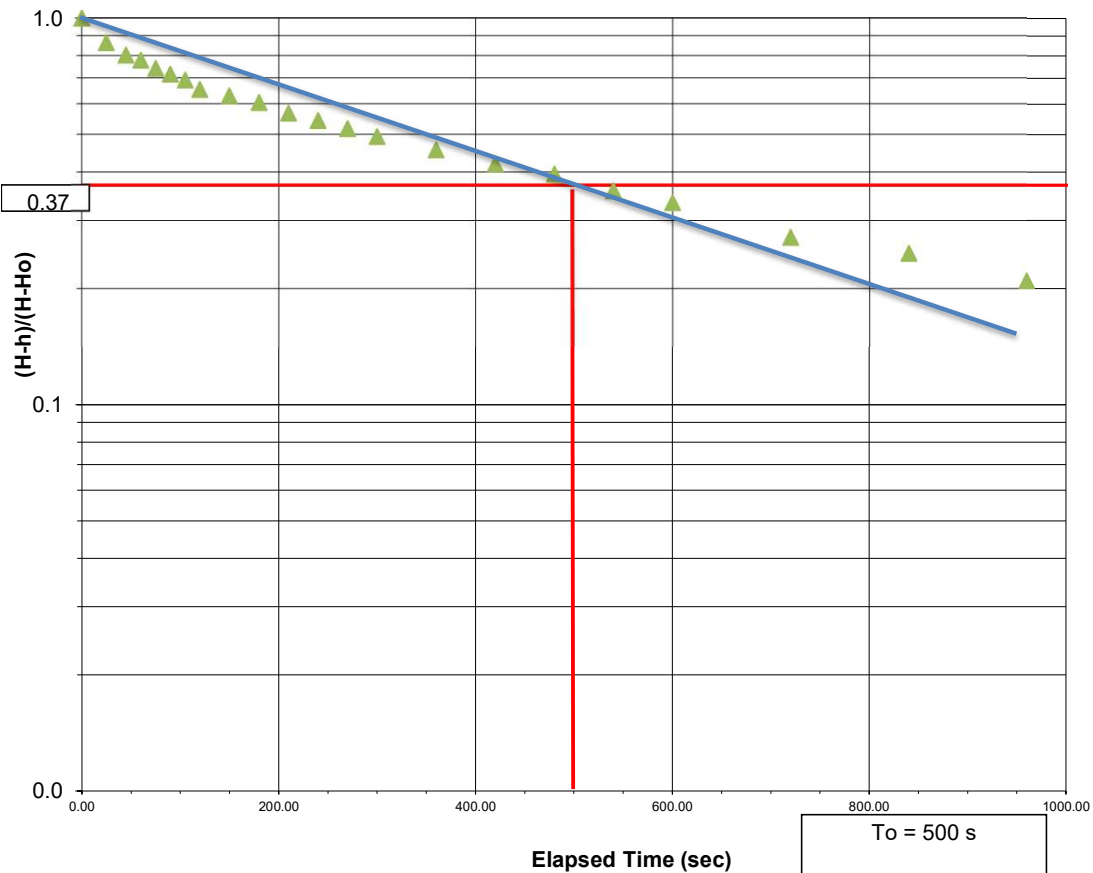
Initial Reading (mTOP) 1.58

r = 2.54 cm

Test Start Reading (Ho) (mTOP) 2.39

To = 500 sec

Test End Reading (mTOP) 1.61

 $K = r^2 \ln(L/R) / (2LT_o) = 8.1E-05$ cm/s**Slug Test Result (Hvorslev Method) - MW101**
Based on Manual Measurements/Rising Head Method

Slug Test: MW102**Project No.: 328478****Project Location: 526 Bay Street, Midland, ON**

Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024

Conducted by: MG/JP

Interpreted by: Bujing Guan

H = Initial Water Head prior to test

Processing Date: 03/04/24

Ho = Water Head at time = 0

Screen Depth (mbgs): 1.5 - 4.6

h = Water Head/Level at time t

Screened Soil: silty clay; silty sand

Well Diameter: 2"

L = 305 cm

Static Water Level (mbgs): 1.54

R (6' auger) = 7.62 cm

Initial Reading (mTOP) 1.43

r = 2.54 cm

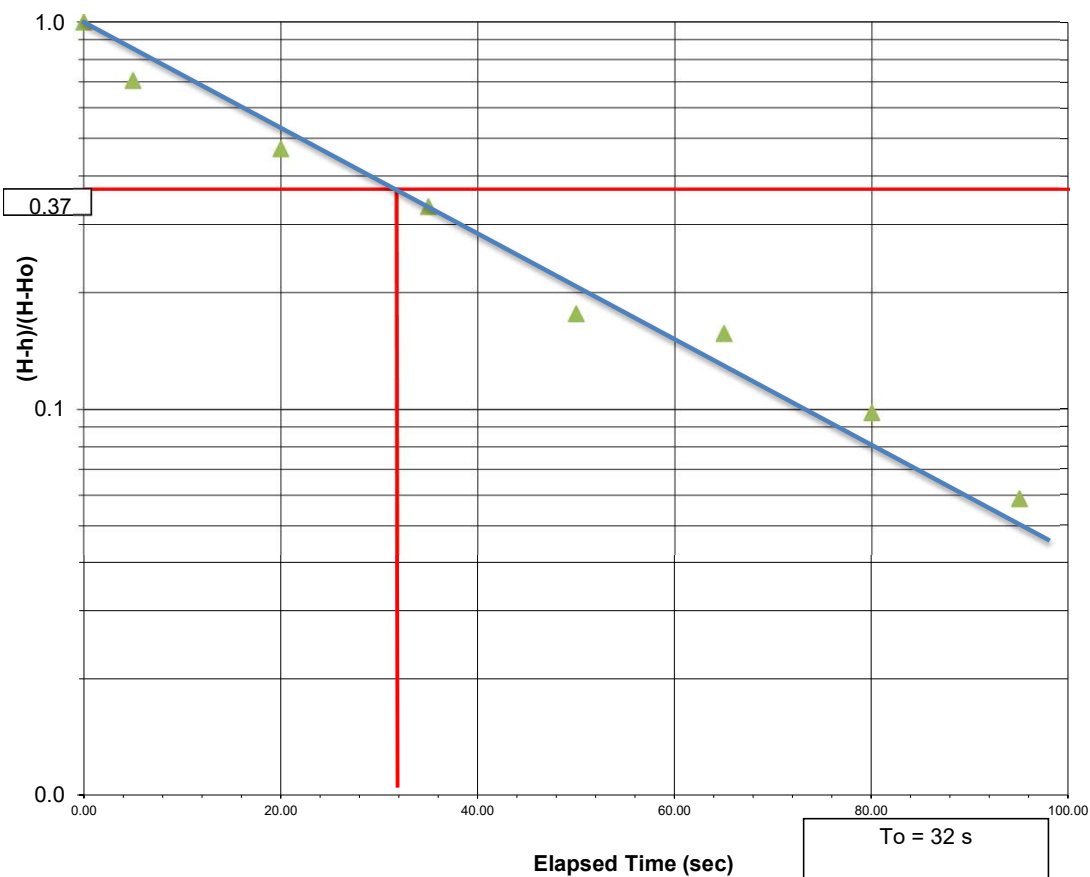
Test Start Reading (Ho) (mTOP) 1.94

To = 32 sec

Test End Reading (mTOP) 1.43

 $K = r^2 \ln(L/R)/(2LT_o) = 1.2E-03$ cm/s

Slug Test Result (Hvorslev Method) - MW102
Based on Manual Measurements/Rising Head Method



Slug Test: MW106**Project No.: 328478****Project Location: 526 Bay Street, Midland, ON**

Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024

Conducted by: MG/JP

Interpreted by: Bujing Guan

H = Initial Water Head prior to test

Processing Date: 03/04/24

Ho = Water Head at time = 0

Screen Depth (mbgs): 1.5 - 4.6

h = Water Head/Level at time t

Screened Soil: silty clay; silty sand

Well Diameter: 2"

L = 305 cm

Static Water Level (mbgs): 1.28

R (6' auger) = 7.62 cm

Initial Reading (mTOP) 1.19

r = 2.54 cm

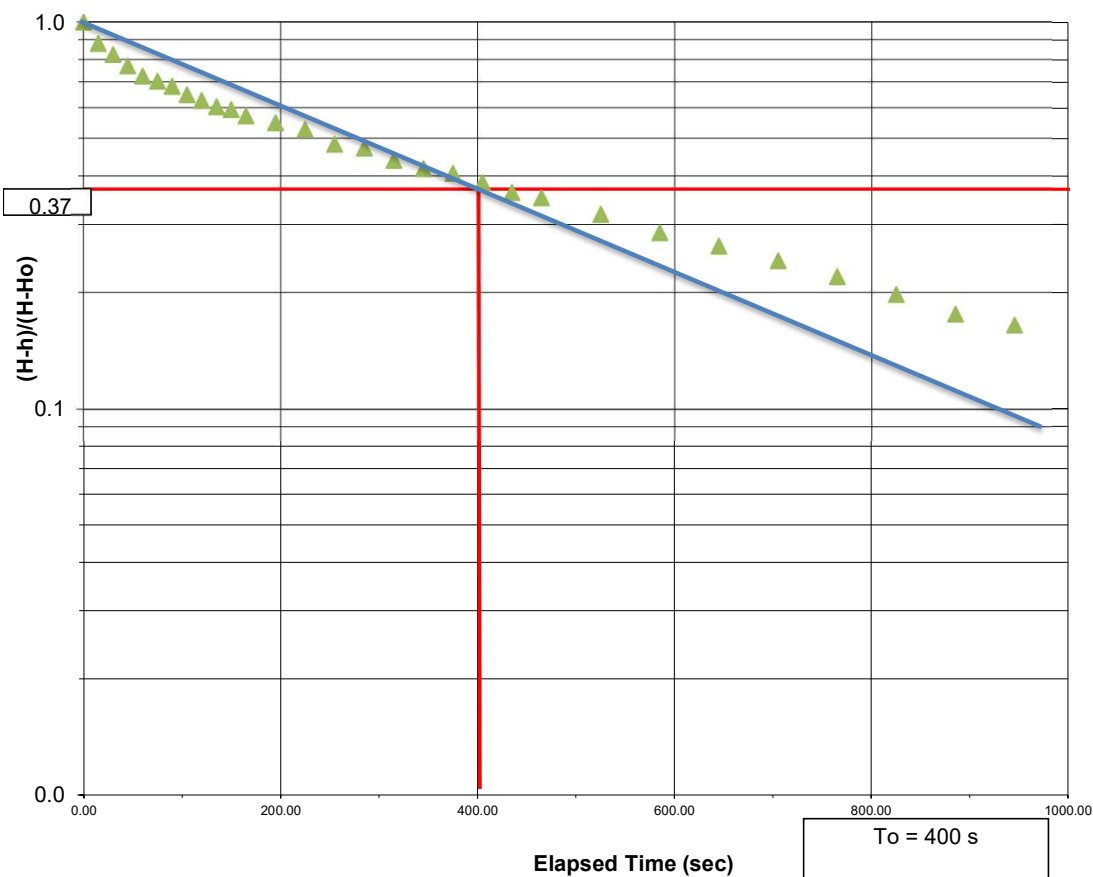
Test Start Reading (Ho) (mTOP) 2.1

To = 400 sec

Test End Reading (mTOP) 1.29

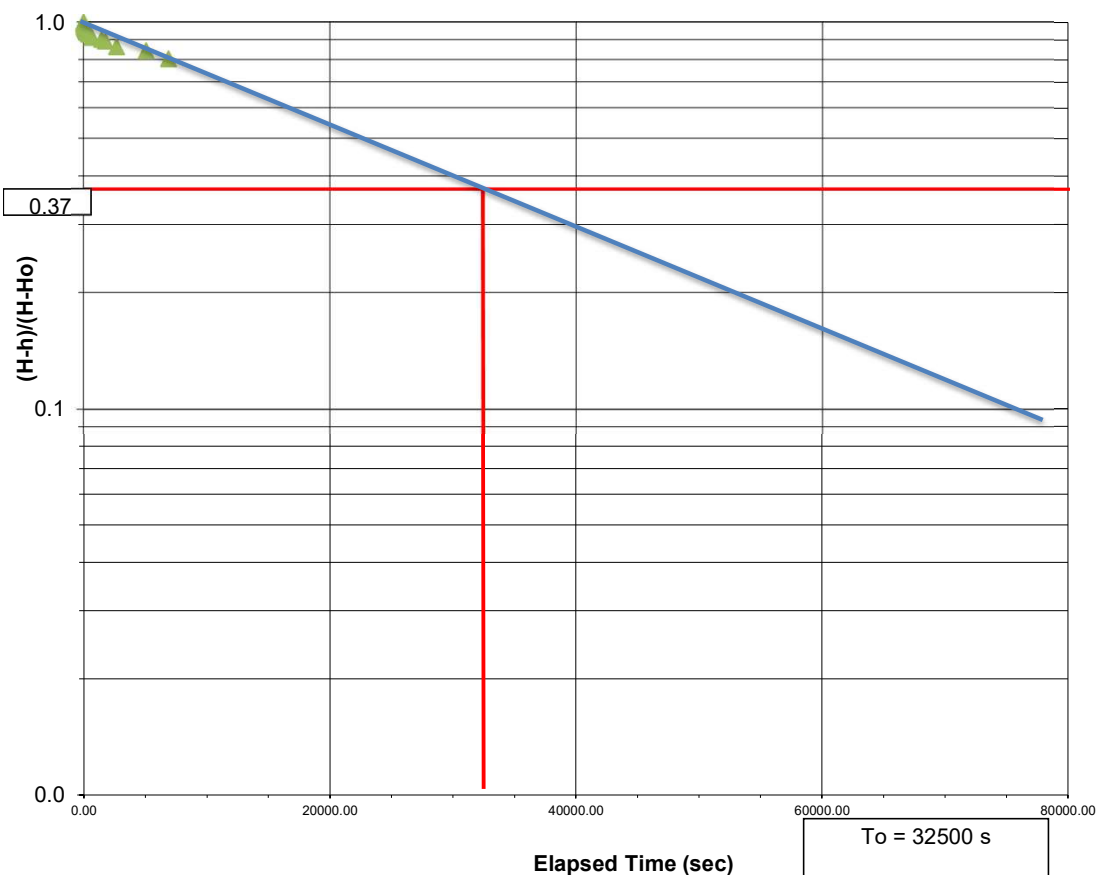
 $K = r^2 \ln(L/R) / (2LT_o) = 9.8E-05$ cm/s

Slug Test Result (Hvorslev Method) - MW106
Based on Manual Measurements/Rising Head Method



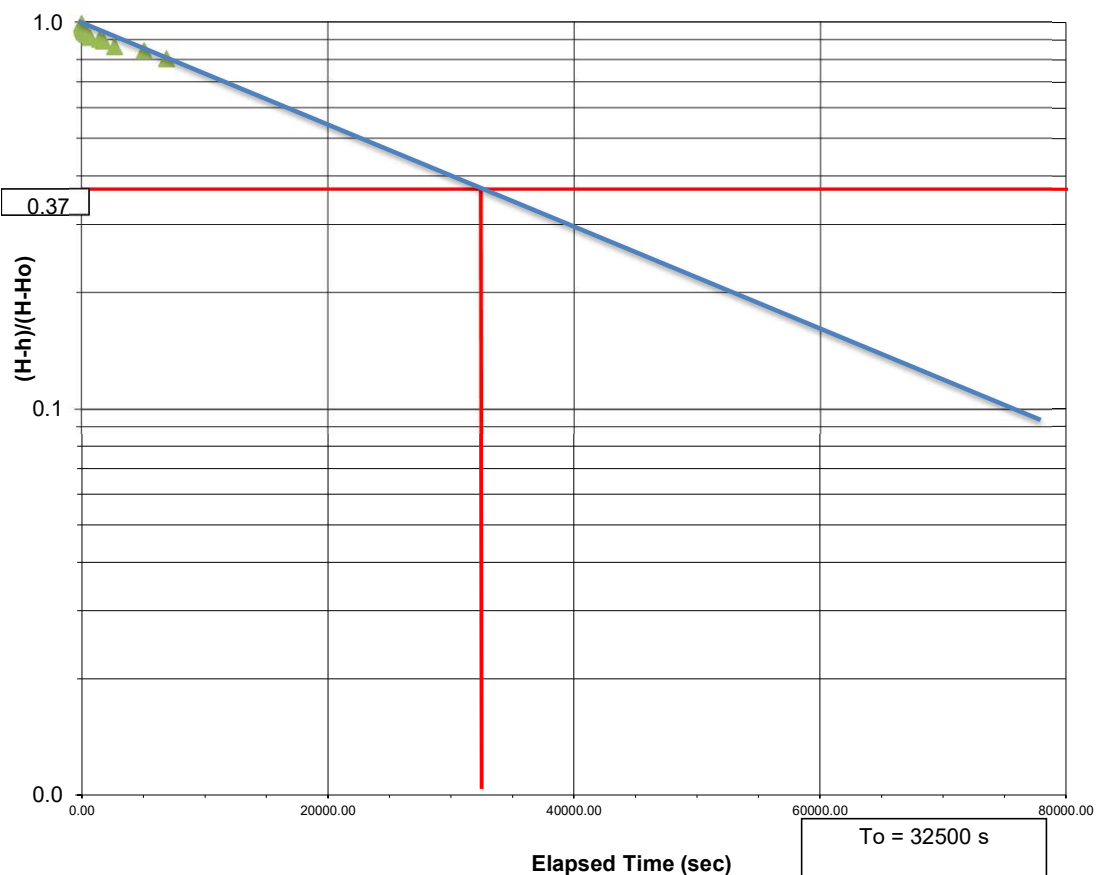
Slug Test: MW301		Project No.: 328478	
Project Location: 526 Bay Street, Midland, ON			
Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024			
Conducted by:		MG/JP	
Interpreted by:	Bujing Guan	H =	Initial Water Head prior to test
Processing Date:	03/04/24	Ho =	Water Head at time = 0
Screen Depth (mbgs):	1.5 - 4.6	h =	Water Head/Level at time t
Screened Soil:	silty sand; clayey silt		
Well Diameter:	2"	L =	304 cm
Static Water Level (mbgs):	1.56	R (6' auger) =	7.62 cm
Initial Reading (mTOP)	1.45	r =	2.54 cm
Test Start Reading (Ho) (mTOP)	2.47	To =	32500 sec
Test End Reading (mTOP)	2.27	$K = r^2 \ln(L/R)/(2LTo) =$	1.2E-06 cm/s

Slug Test Result (Hvorslev Method) - MW301
Based on Manual Measurements/Rising Head Method



Slug Test: MW302		Project No.: 328478	
Project Location: 526 Bay Street, Midland, ON			
Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024			
Conducted by:		MG/JP	
Interpreted by:	Bujing Guan	H =	Initial Water Head prior to test
Processing Date:	03/04/24	Ho =	Water Head at time = 0
Screen Depth (mbgs):	1.5 - 4.6	h =	Water Head/Level at time t
Screened Soil:	silty sand; sandy silt; clayey silt		
Well Diameter:	2"	L =	304 cm
Static Water Level (mbgs):	1.95	R (6' auger) =	7.62 cm
Initial Reading (mTOP)	2.97	r =	2.54 cm
Test Start Reading (Ho) (mTOP)	5.1	To =	32500 sec
Test End Reading (mTOP)	4.12	$K = r^2 \ln(L/R)/(2LTo) =$	1.2E-06 cm/s

Slug Test Result (Hvorslev Method) - MW302
Based on Manual Measurements/Rising Head Method



Slug Test: MW303**Project No.: 328478****Project Location: 526 Bay Street, Midland, ON**

Data Source: based on Manual Measurements as per Rising Head Method dated January 31, 2024

Conducted by: MG/JP

Interpreted by: Bujing Guan H = Initial Water Head prior to test

Processing Date: 03/04/24 Ho = Water Head at time = 0

Screen Depth (mbgs): 1.5 - 4.6 h = Water Head/Level at time t

Screened Soil: Fill (silty sand); silty clay; silty sand

Well Diameter: 2"

L = 236 cm

Static Water Level (mbgs): 2.24

R (6' auger) = 7.62 cm

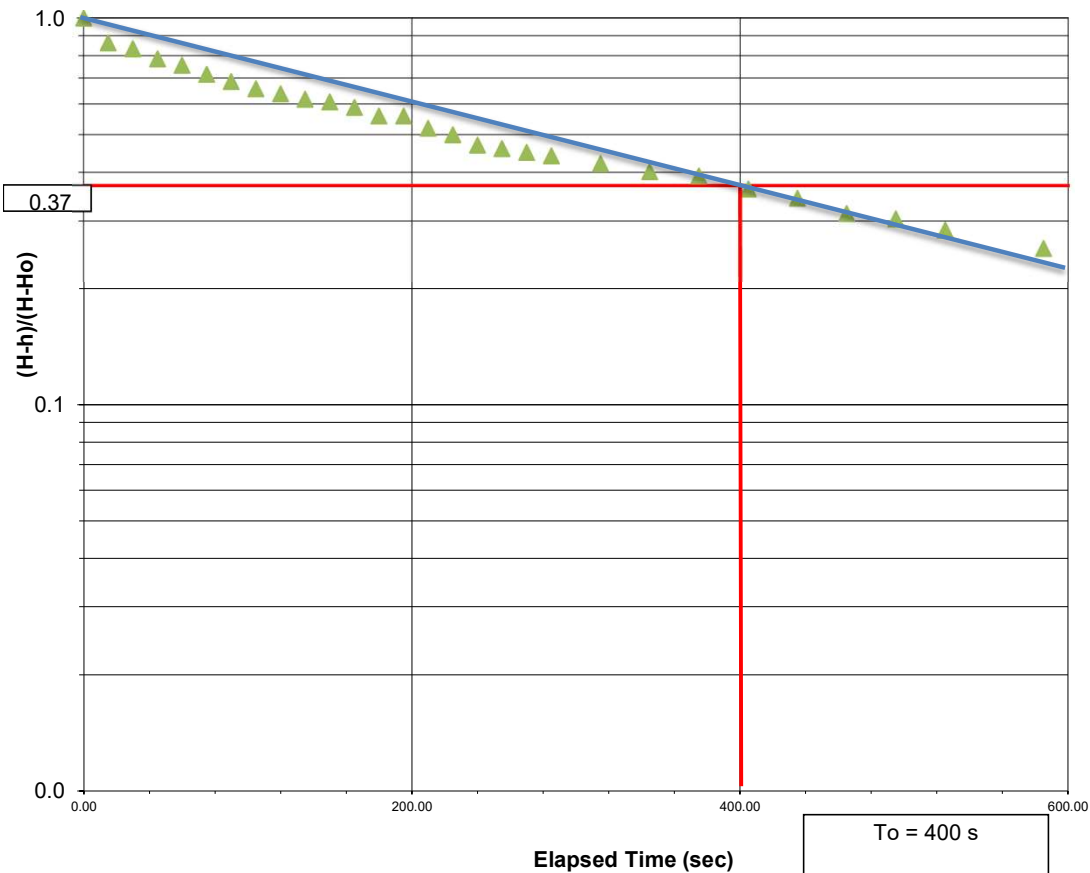
Initial Reading (mTOP) 2.13

r = 2.54 cm

Test Start Reading (Ho) (mTOP) 3.15

To = 400 sec

Test End Reading (mTOP) 2.16

 $K = r^2 \ln(L/R)/(2LTo) = 1.2E-04$ cm/s**Slug Test Result (Hvorslev Method) - MW303**
Based on Manual Measurements/Rising Head Method

APPENDIX V
Laboratory Certificate of Analysis



Your Project #: 328478.004
Site#: 526 Bay Street, Midland
Your C.O.C. #: 968423-01-01

Attention: Bujing Guan

Pinchin Ltd
80 Tiverton Court, Suite 101
Markham, ON
CANADA L3R 0G4

Report Date: 2024/01/12
Report #: R7987178
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C3BK864

Received: 2023/12/18, 17:58

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Biochemical Oxygen Demand (BOD)	1	2023/12/19	2023/12/24	CAM SOP-00427	SM 24 5210B m
Carbonaceous BOD	1	2023/12/19	2023/12/24	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2023/12/21	CAM SOP-00463	SM 24 4500-Cl E m
Total Cyanide	1	2023/12/19	2023/12/20	CAM SOP-00457	OMOE E3015 5 m
Fluoride	1	2023/12/19	2023/12/21	CAM SOP-00449	SM 24 4500-F C m
Mercury in Water by CVAA	1	2023/12/20	2023/12/20	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	1	2023/12/22	2023/12/22	CAM SOP-00447	EPA 6020B m
Fecal coliform, (CFU/100mL)	1	N/A	2023/12/18	CAM SOP-00552	
Animal and Vegetable Oil and Grease	1	N/A	2023/12/29	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2023/12/29	2023/12/29	CAM SOP-00326	EPA1664B m,SM5520B m
Polychlorinated Biphenyl in Water	1	2023/12/19	2023/12/20	CAM SOP-00309	EPA 8082A m
Phenols (4AAP)	1	N/A	2023/12/27	CAM SOP-00444	OMOE E3179 m
pH	1	2023/12/19	2023/12/21	CAM SOP-00413	SM 24th-4500H+ B
Sulphate by Automated Turbidimetry	1	N/A	2023/12/21	CAM SOP-00464	SM 24 4500-SO42- E m
Total Kjeldahl Nitrogen in Water	1	2023/12/19	2023/12/20	CAM SOP-00938	OMOE E3516 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2023/12/29	2023/12/29	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2023/12/20	2023/12/21	CAM SOP-00428	SM 24 2540D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the



Your Project #: 328478.004
Site#: 526 Bay Street, Midland
Your C.O.C. #: 968423-01-01

Attention: Bujing Guan

Pinchin Ltd
80 Tiverton Court, Suite 101
Markham, ON
CANADA L3R 0G4

Report Date: 2024/01/12
Report #: R7987178
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C3BK864

Received: 2023/12/18, 17:58

customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Antonella Brasil, Senior Project Manager

Email: Antonella.Brasil@bureauveritas.com

Phone# (905)817-5817

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C3BK864
Report Date: 2024/01/12

Pinchin Ltd
Client Project #: 328478.004
Sampler Initials: MG

MIDLAND SANITARY AND STORM SEWER (94-25)

Bureau Veritas ID				XXR528	XXR528			
Sampling Date				2023/12/18 13:15	2023/12/18 13:15			
COC Number				968423-01-01	968423-01-01			
	UNITS	Criteria	Criteria-2	MW104	MW104 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters								
Total Animal/Vegetable Oil and Grease	mg/L	150	-	0.90	N/A	0.50	0.10	9119300
Inorganics								
Total Carbonaceous BOD	mg/L	300	-	<2	N/A	2	0.8	9120045
Fluoride (F-)	mg/L	10	-	0.17	0.12	0.10	0.014	9122520
Total Kjeldahl Nitrogen (TKN)	mg/L	100	-	0.25	N/A	0.10	0.060	9122381
pH	pH	5.5 : 9.5	6.0 : 9.0	8.01	8.17	N/A	N/A	9122522
Phenols-4AAP	mg/L	1	-	<0.0010	N/A	0.0010	0.00040	9132167
Total Suspended Solids	mg/L	350	15	1100	N/A	20	19	9122448
Dissolved Sulphate (SO4)	mg/L	1500	-	21	N/A	1.0	0.49	9123901
Total Cyanide (CN)	mg/L	2	-	<0.0050	<0.0050	0.0050	0.00028	9121314
Dissolved Chloride (Cl-)	mg/L	1500	-	110	N/A	1.0	0.66	9123914
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	-	-	0.90	N/A	0.50	0.10	9136094
Total Oil & Grease Mineral/Synthetic	mg/L	15	-	<0.50	N/A	0.50	0.10	9136096
Metals								
Mercury (Hg)	mg/L	0.1	0.001	<0.00010	N/A	0.00010	0.000050	9123091
Total Aluminum (Al)	ug/L	50000	-	8700	N/A	4.9	2.0	9128463
Total Antimony (Sb)	ug/L	5000	-	<0.50	N/A	0.50	0.30	9128463
Total Arsenic (As)	ug/L	1000	-	1.6	N/A	1.0	0.50	9128463
Total Barium (Ba)	ug/L	-	-	280	N/A	2.0	0.50	9128463
Total Beryllium (Be)	ug/L	-	-	<0.40	N/A	0.40	0.10	9128463
Total Bismuth (Bi)	ug/L	5000	-	<1.0	N/A	1.0	0.070	9128463
Total Boron (B)	ug/L	-	-	49	N/A	10	0.30	9128463
Total Cadmium (Cd)	ug/L	100	1	<0.090	N/A	0.090	0.090	9128463
Total Calcium (Ca)	ug/L	-	-	110000	N/A	200	50	9128463
Total Chromium (Cr)	ug/L	1000	200	22	N/A	5.0	5.0	9128463
Total Cobalt (Co)	ug/L	200	-	5.2	N/A	0.50	0.10	9128463
Total Copper (Cu)	ug/L	1000	10	17	N/A	0.90	0.50	9128463
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels							
Grey								
Black								
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Town of Midland Sanitary Sewer Use By-Law No. 94-25 Criteria-2: Town of Midland Storm Sewer Discharge Use By-Law No. 94-25 N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C3BK864
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Pinchin Ltd
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MIDLAND SANITARY AND STORM SEWER (94-25)

Bureau Veritas ID				XXR528	XXR528			
Sampling Date				2023/12/18 13:15	2023/12/18 13:15			
COC Number				968423-01-01	968423-01-01			
	UNITS	Criteria	Criteria-2	MW104	MW104 Lab-Dup	RDL	MDL	QC Batch
Total Iron (Fe)	ug/L	50000	-	12000	N/A	100	10	9128463
Total Lead (Pb)	ug/L	500	50	14	N/A	0.50	0.10	9128463
Total Lithium (Li)	ug/L	-	-	15	N/A	5.0	0.50	9128463
Total Magnesium (Mg)	ug/L	-	-	34000	N/A	50	20	9128463
Total Manganese (Mn)	ug/L	5000	-	270	N/A	2.0	0.50	9128463
Total Molybdenum (Mo)	ug/L	100	-	16	N/A	0.50	0.20	9128463
Total Nickel (Ni)	ug/L	500	50	13	N/A	1.0	0.50	9128463
Total Potassium (K)	ug/L	-	-	7100	N/A	200	50	9128463
Total Selenium (Se)	ug/L	500	-	<2.0	N/A	2.0	0.50	9128463
Total Silicon (Si)	ug/L	-	-	22000	N/A	50	30	9128463
Total Silver (Ag)	ug/L	5000	-	<0.090	N/A	0.090	0.070	9128463
Total Sodium (Na)	ug/L	-	-	54000	N/A	100	50	9128463
Total Strontium (Sr)	ug/L	-	-	260	N/A	1.0	0.50	9128463
Total Tellurium (Te)	ug/L	-	-	<1.0	N/A	1.0	0.70	9128463
Total Thallium (Tl)	ug/L	-	-	0.12	N/A	0.050	0.020	9128463
Total Tin (Sn)	ug/L	5000	-	2.1	N/A	1.0	0.50	9128463
Total Titanium (Ti)	ug/L	5000	-	550	N/A	25	20	9128463
Total Tungsten (W)	ug/L	-	-	2.4	N/A	1.0	0.50	9128463
Total Uranium (U)	ug/L	-	-	1.4	N/A	0.10	0.050	9128463
Total Vanadium (V)	ug/L	5000	-	20	N/A	0.50	0.40	9128463
Total Zinc (Zn)	ug/L	3000	50	44	N/A	5.0	3.0	9128463
Total Zirconium (Zr)	ug/L	-	-	3.0	N/A	1.0	0.50	9128463
PCBs								
Aroclor 1016	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1221	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1232	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1242	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1248	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1254	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: Town of Midland Sanitary Sewer Use By-Law No. 94-25								
Criteria-2: Town of Midland Storm Sewer Discharge Use By-Law No. 94-25								
N/A = Not Applicable								



MIDLAND SANITARY AND STORM SEWER (94-25)

Bureau Veritas ID				XXR528	XXR528			
Sampling Date				2023/12/18 13:15	2023/12/18 13:15			
COC Number				968423-01-01	968423-01-01			
	UNITS	Criteria	Criteria-2	MW104	MW104 Lab-Dup	RDL	MDL	QC Batch
Aroclor 1260	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1262	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Aroclor 1268	ug/L	-	-	<0.05	N/A	0.05	0.01	9121203
Total PCB	ug/L	5	-	<0.05	N/A	0.05	0.01	9121203
Microbiological								
Fecal coliform	CFU/100mL	-	200	<10	N/A	10	N/A	9119922
Surrogate Recovery (%)								
Decachlorobiphenyl	%	-	-	61	N/A	N/A	N/A	9121203
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels							
Grey								
Black								
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: Town of Midland Sanitary Sewer Use By-Law No. 94-25								
Criteria-2: Town of Midland Storm Sewer Discharge Use By-Law No. 94-25								
N/A = Not Applicable								



RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			XXR528			
Sampling Date			2023/12/18 13:15			
COC Number			968423-01-01			
	UNITS	Criteria	MW104	RDL	MDL	QC Batch
Inorganics						
Total BOD	mg/L	300	<2	2	0.5	9120041
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Town of Midland Sanitary Sewer Use By-Law No. 94-25						



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C
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Revised Report(2024/01/12): Midland Sanitary and Storm Sewer Criteria included as per client request .

Sample XXR528 [MW104] : TSS Analysis: Due to the nature of the sample, a smaller than usual portion of the sample was used.

Results relate only to the items tested.

BUREAU
VERITAS

Bureau Veritas Job #: C3BK864

Report Date: 2024/01/12

QUALITY ASSURANCE REPORT

Pinchin Ltd

Client Project #: 328478.004

Sampler Initials: MG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9121203	Decachlorobiphenyl	2023/12/19	65	60 - 130	61	60 - 130	83	%				
9120041	Total BOD	2023/12/24					<2	mg/L	8.8	30	91	80 - 120
9120045	Total Carbonaceous BOD	2023/12/24					<2	mg/L	NC	30	90	80 - 120
9121203	Aroclor 1016	2023/12/19					<0.05	ug/L				
9121203	Aroclor 1221	2023/12/19					<0.05	ug/L				
9121203	Aroclor 1232	2023/12/19					<0.05	ug/L				
9121203	Aroclor 1242	2023/12/19					<0.05	ug/L	NC	30		
9121203	Aroclor 1248	2023/12/19					<0.05	ug/L	NC	30		
9121203	Aroclor 1254	2023/12/19					<0.05	ug/L	NC	30		
9121203	Aroclor 1260	2023/12/19	52 (1)	60 - 130	74	60 - 130	<0.05	ug/L	NC	30		
9121203	Aroclor 1262	2023/12/19					<0.05	ug/L				
9121203	Aroclor 1268	2023/12/19					<0.05	ug/L				
9121203	Total PCB	2023/12/19	52 (2)	60 - 130	74	60 - 130	<0.05	ug/L	NC	40		
9121314	Total Cyanide (CN)	2023/12/20	102	80 - 120	106	80 - 120	<0.0050	mg/L	NC	20		
9122381	Total Kjeldahl Nitrogen (TKN)	2023/12/21	94	80 - 120	95	80 - 120	<0.10	mg/L	0	20	97	80 - 120
9122448	Total Suspended Solids	2023/12/21			96	80 - 120	<10	mg/L	8.0	20		
9122520	Fluoride (F-)	2023/12/21	100	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
9122522	pH	2023/12/21			101	98 - 103			2.0	N/A		
9123091	Mercury (Hg)	2023/12/20	101	75 - 125	100	80 - 120	<0.00010	mg/L	NC	20		
9123901	Dissolved Sulphate (SO4)	2023/12/21	NC	75 - 125	100	80 - 120	<1.0	mg/L	0.17	20		
9123914	Dissolved Chloride (Cl-)	2023/12/21	NC	80 - 120	100	80 - 120	<1.0	mg/L	0.33	20		
9128463	Total Aluminum (Al)	2023/12/22	NC (3)	80 - 120	103	80 - 120	<4.9	ug/L	1.6	20		
9128463	Total Antimony (Sb)	2023/12/22	NC (3)	80 - 120	105	80 - 120	<0.50	ug/L	NC	20		
9128463	Total Arsenic (As)	2023/12/22	NC (3)	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Barium (Ba)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<2.0	ug/L	NC	20		
9128463	Total Beryllium (Be)	2023/12/22	NC (3)	80 - 120	99	80 - 120	<0.40	ug/L	NC	20		
9128463	Total Bismuth (Bi)	2023/12/22	NC (3)	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Boron (B)	2023/12/22	NC (3)	80 - 120	101	80 - 120	<10	ug/L	0.34	20		
9128463	Total Cadmium (Cd)	2023/12/22	NC (3)	80 - 120	101	80 - 120	<0.090	ug/L	NC	20		
9128463	Total Calcium (Ca)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<200	ug/L	0.17	20		
9128463	Total Chromium (Cr)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		

BUREAU
VERITAS

Bureau Veritas Job #: C3BK864

Report Date: 2024/01/12

QUALITY ASSURANCE REPORT(CONT'D)

Pinchin Ltd

Client Project #: 328478.004

Sampler Initials: MG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9128463	Total Cobalt (Co)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
9128463	Total Copper (Cu)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<0.90	ug/L	NC	20		
9128463	Total Iron (Fe)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<100	ug/L	NC	20		
9128463	Total Lead (Pb)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<0.50	ug/L	3.4	20		
9128463	Total Lithium (Li)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<5.0	ug/L	0.58	20		
9128463	Total Magnesium (Mg)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<50	ug/L	0.60	20		
9128463	Total Manganese (Mn)	2023/12/22	NC (3)	80 - 120	97	80 - 120	<2.0	ug/L	NC	20		
9128463	Total Molybdenum (Mo)	2023/12/22	NC (3)	80 - 120	101	80 - 120	<0.50	ug/L	1.5	20		
9128463	Total Nickel (Ni)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Potassium (K)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<200	ug/L	0.80	20		
9128463	Total Selenium (Se)	2023/12/22	NC (3)	80 - 120	106	80 - 120	<2.0	ug/L	NC	20		
9128463	Total Silicon (Si)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<50	ug/L	2.4	20		
9128463	Total Silver (Ag)	2023/12/22	NC (3)	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
9128463	Total Sodium (Na)	2023/12/22	NC (3)	80 - 120	98	80 - 120	<100	ug/L	0.70	20		
9128463	Total Strontium (Sr)	2023/12/22	NC (3)	80 - 120	97	80 - 120	<1.0	ug/L	1.3	20		
9128463	Total Tellurium (Te)	2023/12/22	NC (3)	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Thallium (Tl)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<0.050	ug/L	NC	20		
9128463	Total Tin (Sn)	2023/12/22	NC (3)	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Titanium (Ti)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
9128463	Total Tungsten (W)	2023/12/22	NC (3)	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
9128463	Total Uranium (U)	2023/12/22	NC (3)	80 - 120	97	80 - 120	<0.10	ug/L	6.3	20		
9128463	Total Vanadium (V)	2023/12/22	NC (3)	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
9128463	Total Zinc (Zn)	2023/12/22	NC (3)	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
9128463	Total Zirconium (Zr)	2023/12/22	NC (3)	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
9132167	Phenols-4AAP	2023/12/27	105	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
9136094	Total Oil & Grease	2023/12/29			99	80 - 110	<0.50	mg/L	1.0	25		



BUREAU
VERITAS

Bureau Veritas Job #: C3BK864

Report Date: 2024/01/12

QUALITY ASSURANCE REPORT(CONT'D)

Pinchin Ltd

Client Project #: 328478.004

Sampler Initials: MG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9136096	Total Oil & Grease Mineral/Synthetic	2023/12/29			97	65 - 130	<0.50	mg/L	1.6	25		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Matrix spike exceeds acceptance limits, probable matrix interference.

(3) Matrix Spike not calculated. Original sample and matrix spike sample were analyzed at a dilution, due to high target analytes, or sample matrix interference



BUREAU
VERITAS

Bureau Veritas Job #: C3BK864

Report Date: 2024/01/12

Pinchin Ltd

Client Project #: 328478.004

Sampler Initials: MG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Soham Patel, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Exceedance Summary Table – Midland Sanitary
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
MW104	XXR528-04	Total Suspended Solids	350	1100	20	mg/L
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

Exceedance Summary Table – Midland Storm
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
MW104	XXR528-07	Total Copper (Cu)	10	17	0.90	ug/L
MW104	XXR528-04	Total Suspended Solids	15	1100	20	mg/L
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						