TULLOCH

Planners | Surveyors | Biologists | Engineers

Hydrogeological Study

For

Proposed Estate Lots

On and Around

Corbeil Road

East Ferris, Ontario

Prepared For:

Degagne Group of Companies

452 Quae Quae Rd.

Corbeil, Ontario P0H 1K0

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1. INTRODUCTION

1.1. Project Description

This report presents the results of a hydrogeology assessment undertaken for proposed rural lot development of the following subject properties within the township of East Ferris.

- Lots 13, 14 and 15 of Concession 7
- Lots 13 and 14 of Concession 8
- Lot 13 of Concession 10

The subject properties are located on either side of Corbeil Astorville Road south of HWY 94 as shown on Figure 1. Dimensions and areas for the subject properties are summarized in the following Table.

Property	Area (Ha)	Maximum N/S dimension	Maximum E-W dimension
Lot 13, Con 7	40.1	1015 m	410 m
Lot 14, Con 7	31.9	1015 m	410 m
Lot 15, Con 7	40.1	1015 m	410 m
Lot 13, Con 8	36.3	1015 m	410 m
Lot 14, Con 8	41.9	1015 m	410 m
Lot 15, Con 10	30.9	823 m	410 m

It is proposed to severe the subject properties into rural residential estate lots varying in size from 0.8 hectares and higher. Details for severance of Lot 15, Concession 7 are shown on Figure 2. Details for severances of the other subject properties are currently being considered, and will be provided at a later date. This hydrogeology study is being provided to ensure there will be suitable water supply from drilled wells and that any potential impacts to the surrounding properties from the new development water groundwater extraction and on-site sewage disposal will be acceptable.

1.2. Scope of Report

The owner of the property wishes to develop the subject properties by sub-dividing them into rural estate lots for single family dwelling construction including associated water supply wells and on-site sewage systems. This hydrogeology assessment has been completed to support the zoning application(s) by the property owner. This study has been conducted in general accordance with the following Ministry of Environment (MOE) guidance documents:

- Procedure D-5-5. Technical Guideline for Private Wells: Water Supply Assessment (August 1996).
- Design Guidelines for Drinking-Water Systems, 2008
- Procedure D-5-4 Individual On-Site Sewage Systems: Water Quality Impact Risk

Assessment (August 1996).

The objectives of the above noted guidelines are as follows:

1. Characterize the geological and hydrogeological conditions of the general area and subject property being proposed for development.
2. Ensure future residents will be provided with adequate quantity of water of acceptable quality for domestic use.
3. Ensure that the proposed development will not result in groundwater interference conflicts between users in the development and users on the adjoining lands.

This report has been prepared to meet the general objectives outlined above.

1.3 Site Assessment Methodology

The hydrogeology assessment includes:

1. Review of background information to identify site geological history and site conditions.
2. Review of available records of groundwater wells adjacent to the subject property.
3. Completion of Site Reconnaissance to confirm surficial soil and bedrock conditions as well as provide input for the hydrogeology and impact assessment.
4. Complete test well(s) and pump testing to determine groundwater availability in conjunction with sampling for water quality analyses.
5. Provide an assessment of the results to determine if there will be adequate quantity and suitable quality of groundwater for future domestic use and that the impacts from the on-site sewage systems will be acceptable.
6. Provide conclusions and recommendations for the development and comments on if any further work is required.

2. BACKGROUND INFORMATION REVIEW

2.1.. General Site Physiography

The subject properties are located within the southeast part of the La Vase River Watershed with most surface drainage generally flowing westerly while the southeast portion drains in a northeasterly direction. All drainage ends up flowing north. The highest portion of the subject properties occurs at approximately El. 275 m on the southeast portion of Lot 13, Concession 8 while the lowest elevation occurs at approximately El. 238 on the west side of Lot 15, Concession 7 and the east side of Lot 13, Concession 10. The subject properties are made of a mixture of elevated forested areas with some cleared lower lying fields previously used for agriculture. There is evidence of ditching work to improve drainage for past agricultural use. There are also various poorly drained wetlands and marshy areas within the surface drainage routes. Satellite Imagery of the subject properties are shown on Figure 3 through 5.

2.1.1. General Geological Setting

The bedrock within the North Bay area consists of Precambrian age rocks and includes granite, syenite and gneiss with some diorite, diabase and pegmatite dykes. The area south of Trout Lake is part of the Nipissing-Mattawa Lowland physiographic region which is characterized by extensive lake sediments and low lying organic deposits between numerous bedrock outcrops. The area includes moderately rugged relief or hummocky terrain and numerous outcrops at topographic highs and numerous wetlands and organics deposits in topographic lows.

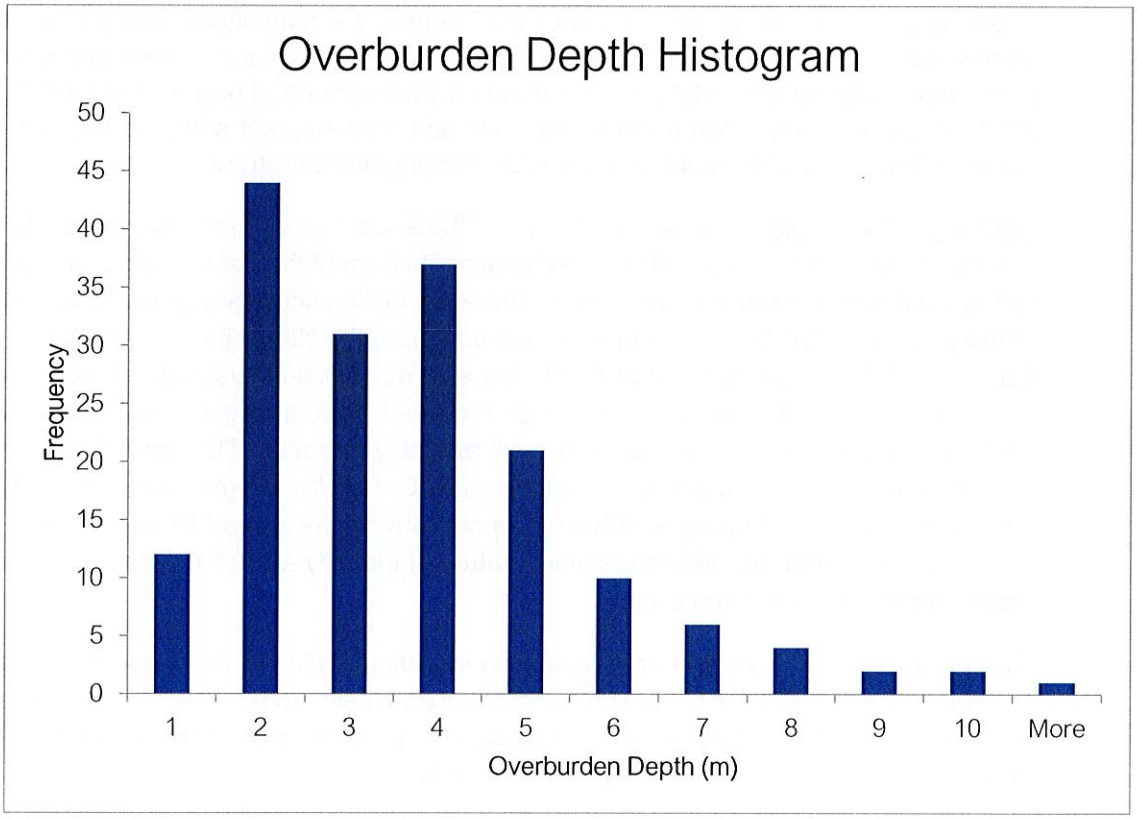
The distribution of overburden materials in the North Bay area is the result of glacial activity during the Great Ice Age. This includes the Wisconsinan Stage of the Pleistocene Epoch approximately 100,000 to 7000 years ago during which the continental ice sheet advanced over and retreated from the North Bay area. Overburden deposits south of Trout Lake within the Nipissing-Mattawa Lowland typically consist of a basal glacial till unit deposited from the base of the ice sheet during active flow. Glacial lake sediments formed during the ice sheet retreat when a glacial lake temporarily formed at higher elevations over Lake Nipissing and Trout Lake due to the Mattawa River valley being blocked by ice to the east. Following full retreat of the ice sheet, both Lake Nipissing and Trout Lake remained joined and drained east into the Mattawa River system for some time until glacial rebound occurred to the point that Lake Nipissing drained west towards Georgian Bay. Historic shoreline deposits indicate that the joined Lake Nipissing and Trout Lake was in existence until about 8,000 years ago. Numerous organic deposits have formed in poorly drained low-lying areas throughout the region since the ice sheet retreated.

Based on review of Ontario Engineering Geology Terrain Study No. 101, the following types of terrain should be present in vicinity of the subject property:

1. Glaciolacustrine Plain including sand, silt and clay deposits with undulating terrain.
2. Bedrock Knob including thin glacial drift deposits with hummocky terrain.
3. Organic Terrain including peat and muskeg in poorly drained low lying wetlands.

These types of deposits are typical of the East Ferris Township in general. Review of satellite imagery of the subject properties (Figures 3 to 5) indicates that in the past suitable areas have been utilized for agriculture. Typically it is normal for the better drained glaciolucustrine plain areas to be used for cultivation.

A review of 173 historic test well water well records in the vicinity of the subject property was completed. Information for the wells is summarized on Table 1. Overburden depths ranged from 0.3 to 10.67 m in depth with sand, clay or gravel being reported at surface. The average depth of overburden was 3.20 m. A histogram of overburden depths for the historic wells is shown on the following chart. Sand, clay, boulders and/or glacial till was reported below the clay and above bedrock.



3. SITE RECONNAISSANCE / INVESTIGATION

3.1. Site Reconnaissance

Reconnaissance of the subject properties was conducted on November 14 and 16 of 2022. The objective of the reconnaissance was to confirm in more detail the type, and extents of overburden deposits through non-intrusive techniques. This included walking the subject property to document evidence of terrain conditions and soil types using a hand held GPS and digital camera. Figures 6 to 8 show the waypoints where digital photos were taken to document points of interest. Photos corresponding to the waypoint locations on Figures 6 to 8, are provided in Appendix A1 to A3.

As a result of the site reconnaissance, three physiographic areas were defined as follows:

1. Bedrock Knob/Glacial Till – The largest portion of the subject properties (68%) consist of surficial glacial till or drift deposits and are hummocky to undulating with some infrequent smooth bedrock outcrops occurring mainly at topographical high points. These areas of the property have not been cleared for agricultural use due to the steeper terrain and occurrence of bedrock and boulders at surface. These areas tend to be gently sloping and relatively well drained. Small exposed ridges of glacial till in flatter areas are likely small moraine deposits and may suggest some sorting due to wave action during glaciolacustrine periods following glacial retreat.

2. Glaciolucustrine Plain – Approximately 25% of the subject properties consist of surficial deposits of historic fine grained lake bed sediments from higher lake levels associated with glacial retreat as discussed above. These deposits occurs along low lying areas of the properties. Surface exposures inspected during the site visit consisted of brown clay and silt. It is expected that at depth, the sediments will include varved clays and silts with some sandy layers. As shown on Figures 6 to 8, all the cleared fields used for agriculture tend to be located on the silt and clay deposits. The ground terrain is typically relatively smooth with some undulations. Generally, the glaciolacustrine plain sediments are draped up against higher topography where glacial till and bedrock is exposed. Due to the relatively impervious nature of the clay and silt deposits, standing water can occur in low lying areas.

3. Organic Terrain – Pockets of organic terrain including wetlands and deposits of peat and muskeg occur most of the lowest lying areas and make up about 6 % of the subject properties. These areas occur along drainage courses and would be expected to be underlain by glaciolacustrine sit and clay deposits.

3.2 Test Pit Program

Following completion of the site reconnaissance and general site characterization, a test pit program was undertaken on December 9, 2022 to confirm subsurface overburden conditions on portions of Lots 13 and 14 Concession 8. A total of 6 test pits were completed. Locations of the test pits is shown on Figure 7 and photos documenting the work are provided in Appendix B.

As result of the test pit program, the following subsurface conditions were documented.

Test Pit 1 – Located on top of a slight ridge thought to be a recessional moraine deposit (Photos 1 to 3). Test pit 1 was excavated to a depth of 2.4 m and consisted of a thin surficial layer of sandy topsoil underlain by sandy glacial till with some boulders. No groundwater was encountered at this location. Bedrock is inferred at 2.4 m depth based on observations.

Test Pit 2 – Located within treed area (Photo 4). Test pit 2 consisted of a thin layer of topsoil underlain by glacial till with bedrock at 1.40 m depth. The glacial till consists of silt and sand with gravel, cobbles and boulders. No groundwater was encountered.

Test Pit 3 – Located on slightly raised ridge (Photos 5 to 7). Test Pit 3 consisted of 0.15 m of topsoil underlain by reddish brown to grey sandy glacial till with gravel and boulders Bedrock was encountered at the terminated depth of 1.11 m. No groundwater was encountered.

Test Pit 4 – Located on elevated plateau (Photos 8 and 9). Test Pit 4 was excavated to bedrock at a depth of 0.78 m and included a thin layer of topsoil overlying glacial till. The glacial till consists of a mixture of silt and sand with gravel, cobbles and boulders. No groundwater was encountered.

Test Pit 5 – Located at the base of a ridge (Photo 10). Test pit 5 was excavated to a depth of 0.81 m where bedrock was encountered. A surficial layer of topsoil was encountered underlain by sandy glacial till with gravel and cobbles. No groundwater was encountered.

Test Pit 6 – Located on a plateau (Photo 11 and 12). A surficial layer of topsoil was encountered underlain by grey varved silt and clay which overlays a basal unit of glacial till from approximately 0.5 m to 1.8 m depth where bedrock was encountered. No groundwater inflow was encountered.

The following table provides a summary of the test pit findings and record of the samples taken.

Test Pit	Test Pit Depth	Bedrock Found	Groundwater Inflow	Material Encountered
TP 1	2.40 m	Yes	No	Sandy Glacial Till
TP 2	1.42 m	Yes	No	Sandy Glacial Till
TP 3	1.11 m	Yes	No	Sandy Glacial Till
TP 4	0.78 m	Yes	Yes	Sandy Glacial Till
TP 5	0.81 m	Yes	Yes	Sandy Glacial Till
TP 6	1.85 m	Yes	Yes	Varved Silt & Clay overlying glacial till

In general, the test pit program confirmed the findings from the site reconnaissance in that subsurface soils consist of glaciolacustrine varved silt and clay at lower elevations and glacial till with bedrock outcrop at higher elevations. The glacial till was found to extend below the silt and clay. Although groundwater was not encountered it is anticipated that groundwater will occur in the bottom of the glacial till layer above bedrock especially during wet periods. Based on site reconnaissance it is anticipated that the groundwater table at lower elevations where varved silt and clay was found, will generally be at or near the surface.

Some basic grainsize testing was done on three samples of glacial till (minus 150 mm) collected from the test pits. Segregated samples are shown in Photos 13 to 15. The results are summarized in the following table.

Test Pit	Percent Gravel	Percent Sand	Percent fines
TP 1	43.7	53.8	2.5
TP 2	38.5	45.5	16.0
TP 3	23.2	51.3	25.5

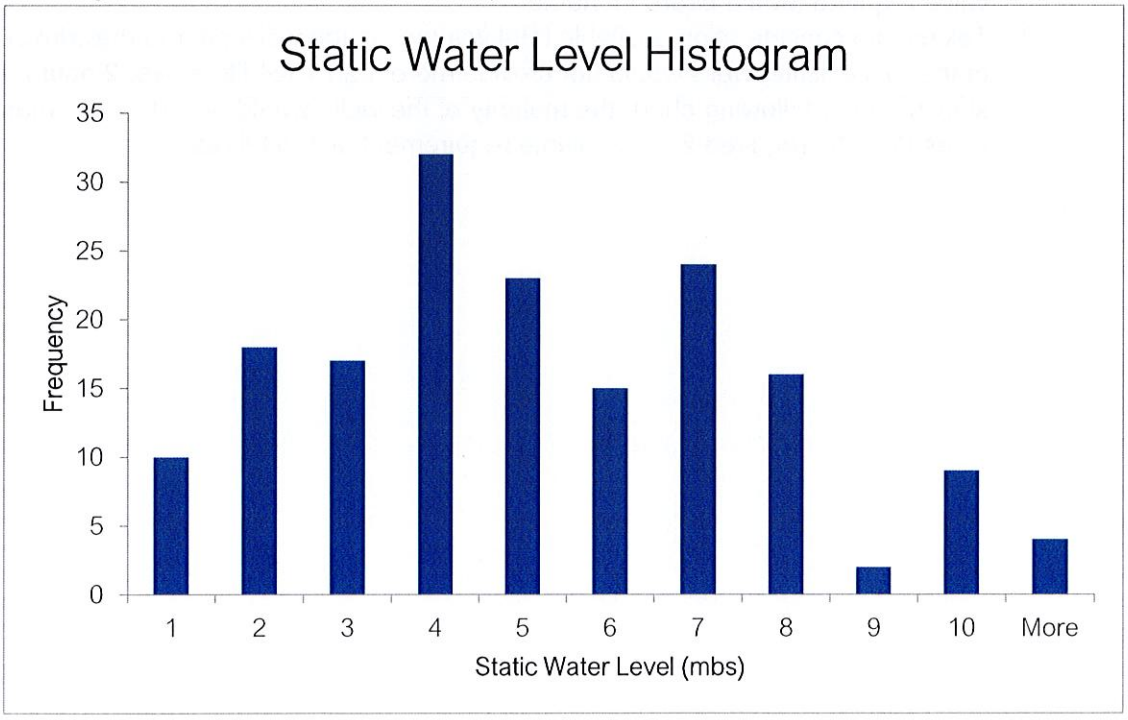
Based on the results above, the glacial till ranges from a sand and gravel with trace fines to a silty sand, some gravel. The cleaner material at TP 1 may be result of some fluvial or wave action during it's geological history.

4. WATER WELL REVIEW

In order to consider domestic water supply for the proposed subdivision, a review of available drilled well records adjacent to the subject properties was completed. A detailed summary of the well records is provided on Table 1. Data from a total of 173 wells was included in the analysis. Only wells after June 2002 were included as older wells were typically not constructed or tested to current standards. The following general summary provides a basic statistical summary of the data on Table 1.

Well Criteria	Minimum	Maximum	Mean
Overburden Depth	0.30 m	10.67m	3.20m
Total Depth	7.92m	164.59 m	77.22 m
Water Found Depth	7.62 m	115.21 m	54.76m
Static Level Depth	0.00 m	12.83 m	4.60 m
Pump Rates	5.67lpm	756.00 lpm	51.39 lpm
Maximum Drawdown	0.0 m	120.70 m	23.32m
Specific Capacity	0.06 lpm/m	124.02 lpm/m	9.24 lpm/m
Well Volume	91.88 litres	3675.16 litres	906.04 litres
Pump Volume for 120 min.	680.40 litres	90720.00 litres	6167.29 litres
Total Volume Available	1334.69 litres	90867.01 litres	7032.45 litres
Volume minus Drawdown	300.61 litres	45639.73 litres	4854.22 litres

A histogram of the static water table is provided in the following chart.



As shown in the above table the static water table is generally below the depth of overburden or within the bedrock suggesting that the groundwater within the bedrock is

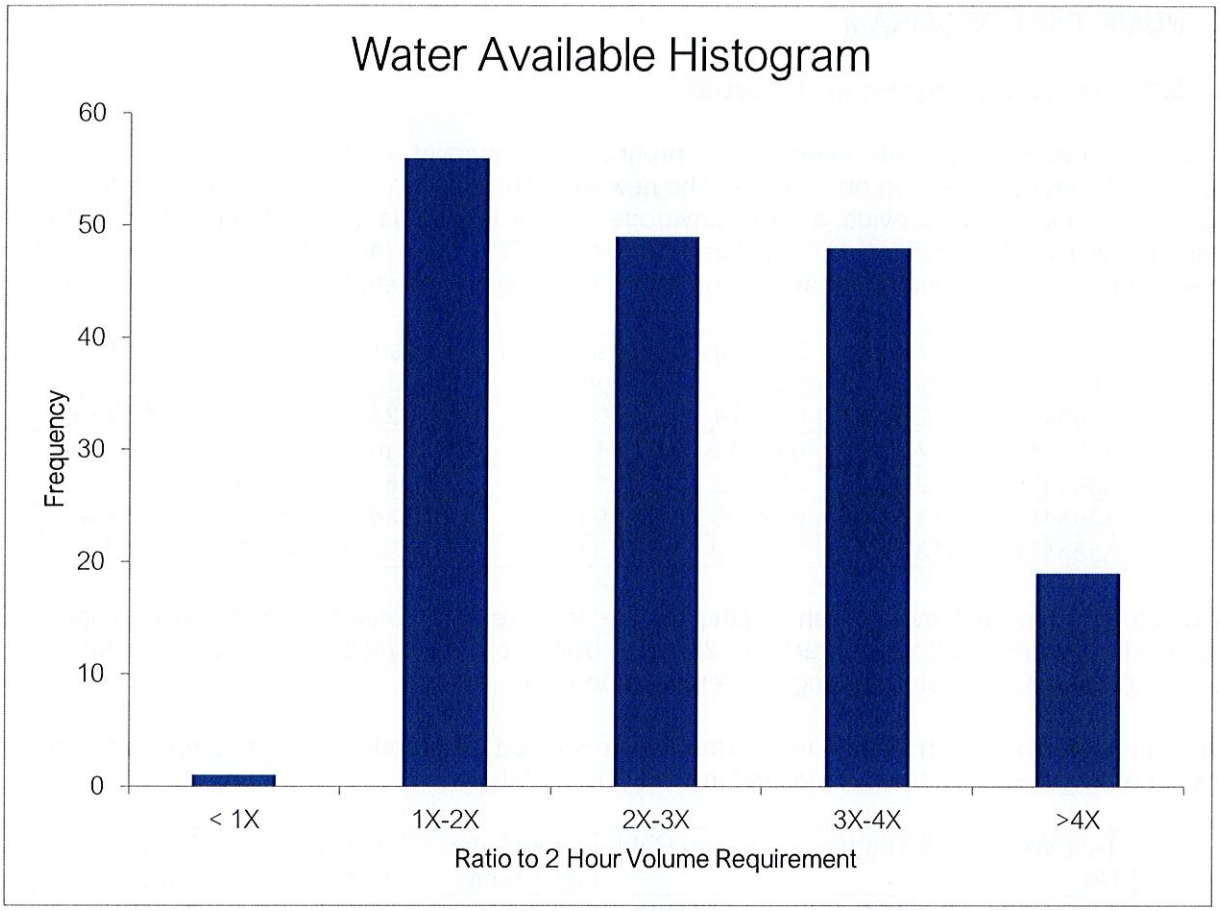
not directly connected to the overburden except through infiltration.

Requirements for new domestic wells as per MOE Guideline D-5-5 are as follows

1. The per person requirement shall be 450 litres per day.
2. Peak Demand will be based on a period of 120 minutes each day based on a demand rate of 3.75 litres per minute per person.
3. A minimum house size of 4 bedrooms is to be used unless otherwise established resulting in a daily water demand of 1,800 litres per day and a peak demand over 120 minutes of 13,7 litres per minute which is equivalent to 1,644 litres.
4. Lower well yields can be accepted where prolonged pumping rates can be used to make up difference in volume based compensation systems. For example, a well with a pump rate of 11.34 lpm would need an excess volume of 271.20 litres ((1,632 litres - (11.34 lpm x 120 minutes = 1,360.80 litres)). In effect, a well must be able to provide a 2 hour volume of 1,632 litres from pumping and/or storage in the well. For a 150 mm diameter well, the water storage volume is 17 litres per m of depth, so 271.2 litres of storage would be available if the pump was 16 m below the lowest drawdown level after 2 hours of continuous pumping.

Review of the well record data on Table 1 indicates the following:

1. Of the 173 wells, 10 wells were tested at pumping rates less than the 13.7 lpm value required for a 4 bedroom home.
2. Taking into consideration available total volumes in the wells prior to drawdown, 1 of the 173 existing wells would not provide more than 1644 litres over 2 hours. As shown on the following chart, the majority of the wells would provide more than 2 times (2X) the required 2 hour volume requirement of 1644 litres.


Water Available Histogram
60
50
40
30
20
10
0
Frequency
< 1X
1X-2X
2X-3X
3X-4X
>4X
Ratio to 2 Hour Volume Requirement

5. PUMP TEST PROGRAM

5.1. Test Well Program and Results

The groundwater supply site investigation program consisted of drilling five test wells on the subject properties, as shown on Figure 9. The new wells were drilled around the edges of the two southern properties to provide a large coverage. The test wells were completed by Gilles Bouffard Drilling Ltd (Bouffard) in August and October of 2023. Logs for the test wells are provided in Appendix C, and the following table summarizes the location and stratigraphy for the test wells.

Well Tag ID	Northing (m)	Easting (m)	Overburden Depth	Bottom Depth	Water Found	Static Level
A385454	5120617	632874	6.10 m	104.24 m	Frac	4.57 m
A385453	5120742	633144	7.31 m	9.14 m	8.53 m	0.61 m
A385476	5121543	632762	7.01 m	43.28 m	30.48 m	2.13 m
A385480	5122496	632496	5.79 m	110.34m	Frac	2.44 m
A385475	5122920	633159	8.53 m	110.34m	55.47 m	1.04 m

This stratigraphy and overburden depths for the test wells is consistent with the geological conditions described above in Sections 2 and 3. Based on the stratigraphy and "water found" depths recorded, the water bearing aquifer is the bedrock.

Upon completion of each the test wells, Bouffard conducted the standard 1 hour pump tests. The initial pump test results are summarized in the following table.

Test Well No.	Well Tag ID	Pump Rate	Drawdown @ 1 hour	Specific Capacity	Recovery @ 1 hour
1	A358454	37.65 lpm	10.69 m	3.53 lpm/m	96.2 %
2	A385453	18.83 lpm	1.53 m	12.35 lpm/m	100 %
3	A385476	56.48 lpm	13.11 m	4.31 lpm/m	95.3 %
4	A385480	11.30 lpm	5.56 m	2.03 lpm/m	N/A
5	A385475	37.65 lpm	13.35 m	2.82 lpm/m	100 %

Tulloch conducted a 6 hour step down pump test on each of the test wells between October 25 and November 20, 2023. The pump equipment and operations were provided by Bouffard. The pump tests consisted of a step down type starting at a flow rate of 11.36 lpm (3 usgpm) for 2 hours followed by 22.71 lpm (6 usgpm) for 2 hours followed by 34.07 lpm (9 usgpm) for the final 2 hours. The flow rate was controlled using flow measurement device provided by Bouffard. During each pump test, two of the closest test wells were monitored as observation wells. Photos of the pump tests in progress are provided in Appendix D.

Data for the 6 hour pump tests was collected using a SOLINST data loggers. The data loggers were set to record every 5 minutes and deployed down the test well and two observation wells. A barologger was used to record barometric pressure on the same interval as the data loggers. This was then used to correct the well data to account for barometric pressure changes over the test duration using software provided by SOLINST. A tablet computer was employed to be able to monitor the test well data in real time during the test, and to download the data from the each logger after the test and well recovery was complete.

A drawdown versus time plot for the stepped pump tests are presented on Figures 10 to 14. They show how similar both the readings from the datalogger and manual measurements by Bouffard are. In addition, when Bouffard completed each well, they conducted a standard one hour well yield test as noted above. The standard one hour tests are shown on the plots for comparison. The following comments are provided with respect to the observations of the pump test plots.

Test Well 1 (Figure10)

1. The pump test was stopped 20 minutes into the last stage (260 minutes from start of test) due to the well drawdown reaching the limit of the data logging equipment.
2. Over the pump test period 260 minutes, a total volume of 4,656 litres was removed from the test well resulting in a maximum drawdown of 85.7 m. This volume is greater than the daily volume requirement of 1,800 litres.
3. The Recovery time plot indicates that the well reached 90% recovery 220 minutes after cessation of pumping.
4. There was no noticeable drawdown in the observation wells located 300 and 900 metres from the test well.

Test Well 2 (Figure 11)

1. The well had a maximum drawdown of 4.12 m at the end of the third stage of pumping.
2. A total volume of 8,233 litres of water was removed from Test Well 2.
3. Test Well 2 reached 90 % recovery within 70 minutes of stopping the pump test.
4. There was some drawdown (approx. 0.3 m) at well A385454 located 300 m to the east of the pumped well (A385453), indicating some connection.

Test Well 3 (Figure 12)

1. The well had a maximum drawdown of 19.84 m at the end of the third stage of pumping. The data logger bottomed out at 14.93 m so the maximum drawdown value is based on hand measured.
2. A total volume of 8,744 litres of water was removed from Test Well 3.
3. Test Well 3 reached 90 % recovery within 665 minutes (11 hours) of stopping the pump test.
4. There was no noticeable drawdown at observation wells located 880 m and 1100 m from the pumped well.

Test Well 4 (Figure 13)

1. The well had a maximum drawdown of 84.38 m at the end of the third stage of pumping.
2. A total volume of 7,949 litres of water was removed from Test Well 4.
3. Test Well 4 reached 90 % recovery within 85 minutes of stopping the pump test.
4. There was no noticeable drawdown at observation wells located 730 m and 1100 m from the pumped well.

Test Well 5 (Figure 14)

1. The well had a maximum drawdown of 15.95 m at the end of the third stage of pumping.
2. A total volume of 8,176 litres of water was removed from Test Well 5.
3. Test Well 5 reached 90 % recovery within 30 minutes of stopping the pump test.
4. There was no noticeable drawdown at observation wells located 730 m and 1400 m from the pumped well.

The following tables provides a summary of the pump test results.

Pump Test 1 (A385454)					
Pump Step	Pump Rate	Drawdown at Start	Drawdown at End	Drawdown for Step	Specific Capacity
1	11.36 lpm	0 m	10.72 m	10.72 m	1.06 lpm/m
2	22.71 lpm	10.72 m	71.55 m	60.83 m	0.37 lpm/m
3	34.07 lpm	71.55 m	85.72 m	14.17 m	2.40 lpm/m

Pump Test 2 (A385453)					
Pump Step	Pump Rate	Drawdown at Start	Drawdown at End	Drawdown for Step	Specific Capacity
1	11.36 lpm	0 m	1.15 m	1.15 m	9.88 lpm/m
2	22.71 lpm	1.15 m	2.47 m	1.32 m	17.20 lpm/m
3	34.07 lpm	2.47 m	4.12 m	1.65 m	20.65 lpm/m

Pump Test 3 (A385476)					
Pump Step	Pump Rate	Drawdown at Start	Drawdown at End	Drawdown for Step	Specific Capacity
1	11.36 lpm	0 m	2.40 m	2.40 m	4.73 lpm/m
2	22.71 lpm	2.40 m	6.77 m	4.37 m	5.20 lpm/m
3	34.07 lpm	6.77 m	19.84 m	13.07 m	2.61 lpm/m

Pump Test 4 (A385480)					
Pump Step	Pump Rate	Drawdown at Start	Drawdown at End	Drawdown for Step	Specific Capacity
1	11.36 lpm	0 m	6.63 m	6.63 m	1.71 lpm/m
2	22.71 lpm	6.63 m	20.24 m	13.61 m	1.67 lpm/m
3	34.07 lpm	13.61 m	84.24 m	70.63 m	0.48 lpm/m

Pump Test 5 (A385475)					
Pump Step	Pump Rate	Drawdown at Start	Drawdown at End	Drawdown for Step	Specific Capacity
1	11.36 lpm	0 m	2.56 m	2.56 m	4.44 lpm/m
2	22.71 lpm	2.56 m	6.15 m	3.59 m	6.33 lpm/m
3	34.07 lpm	6.15 m	16.13 m	9.98 m	3.41 lpm/m

An analysis of the stepped pump test was undertaken using specialized Stepped Drawdown Test Software called Step Master (copyright by Starpoint Software – www.pointstar.com/Aquifer/StepMaster.aspx). Step Master is a software package specifically designed to use graphical analysis methods to analyze step-drawdown test data to determine various aquifer characteristics including transmissivity and storativity. In addition to analyzing the pump draw down data with Step Master, the recovery data was analyzed using the Cooper Jacob method to estimate transmissivity values. The following table provides a summary of results for the analyses completed.

Method	Analysis Type	Test 1 A385454	Test 2 A385453	Test 3 A385476	Test 4 A385480	Test 5 A385475
Step Master	Eden Hazel	0.42	4.43	1.99	0.71	2.89
Step Master	Birsoy-Summers	0.12	4.80	0.78	0.16	1.06
Spreadsheet	Cooper Jacob	0.14	5.41	1.34	0.17	2.52

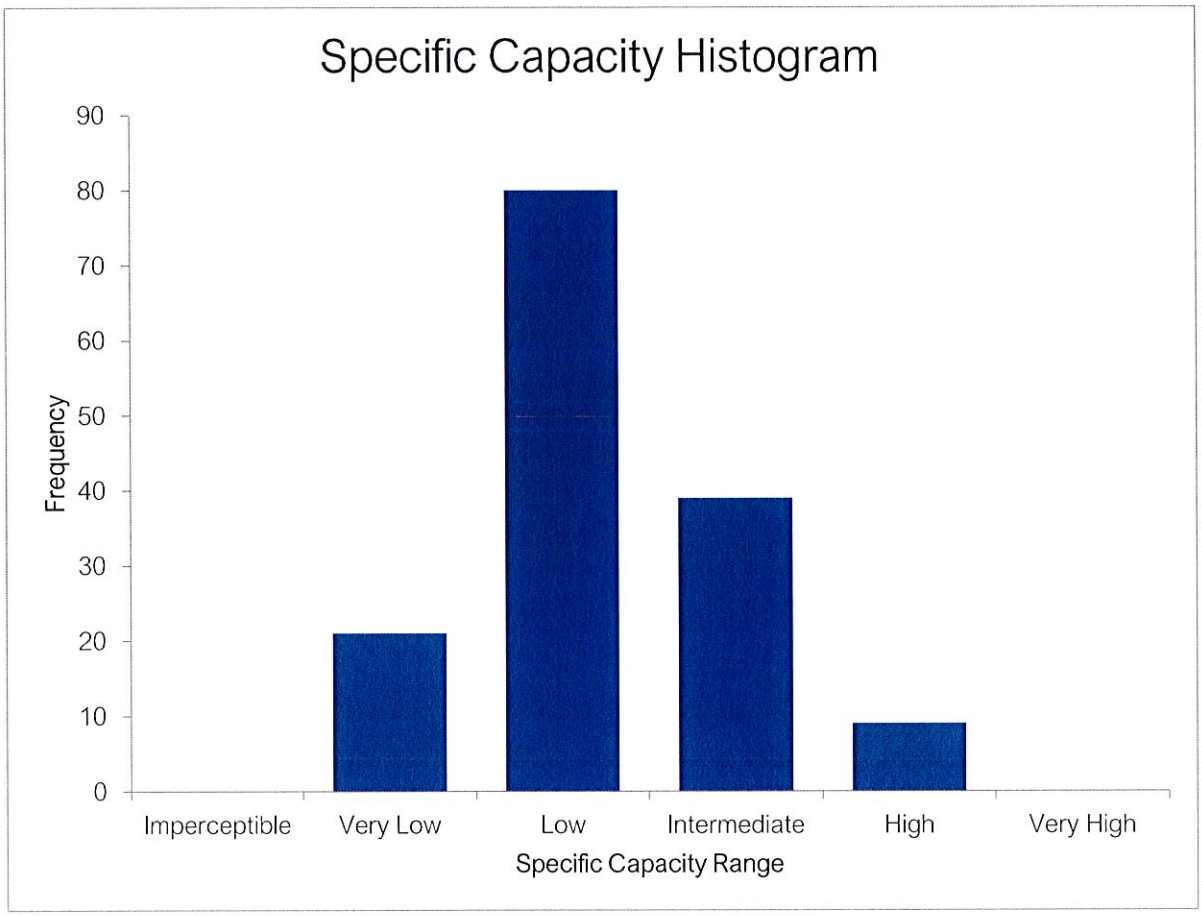
Transmissivity is an important hydraulic property of aquifers as it provides an estimate of the potential for groundwater abstraction. Krasny (1993) developed a classification of transmissivity magnitude and variation to help provide an objective method for classifying relative aquifer transmissivity values and relating them to an estimate of approximate groundwater yield. The following table provides a summary of the aquifer parameters for various designations as per Krasny (1993).

Transmissivity Range	Designation	Specific Capacity	Supply Potential	Anticipated Well Yield at 5 m Drawdown
0.1 to 1 m2/day	Very Low	.06 to 0.6 lpm/m	Withdrawal for local water supply with limited consumptions	0.3 to 3 lpm
1 to 10 m2/day	Low	0.6 to 6 lpm/m	Withdrawals for local water supply (private consumption etc.)	3 to 30 lpm
10 to 100 m2/day	Intermediate	6 to 60 lpm/m	Withdrawals for local water supply (small communities, plants, etc.)	30 to 300 lpm

Based on the Test Results and tables above, the following is summarized:

- Tests 1 and 4 fit in the mid to upper portion of the "Very Low" designation indicating that these wells are suitable for local water supply.
- Tests 2,3 and 5 fit in the low to mid portion of the "Low" designation suggesting these wells are suitable for supplying a local private water supply.

A review of the specific gravity values calculated from historic wells was also completed. The following chart provides a histogram of all results.



As shown above, the bulk of the historic wells fit in the Low to Intermediate classification range indicating that there are stronger wells within the surrounding area compared with the results of the 5 wells tested as part of this program.

6. DEVELOPMENT IMPACT REVIEW

6.1. Groundwater Supply Quantity

Based on the work completed with respect to supply of groundwater, it is not anticipated that there will be any issue with domestic water supply for the proposed rural lot development on the subject properties for the following reasons.

1. Based on review of 173 well records for the area, it was determined that all of the existing wells except 1 will satisfy the daily water supply requirements for single family dwellings.
2. Completion of a five 6 hour stepped pump tests indicated the following:
    i. Between 2.5 and 4.8 times the daily required water volume (1,800 litres) was removed from the test wells with 90 percent recovery occurring over times ranging from 0.5 to 11 hours.
    ii. The transmissivity values for the bedrock aquifer indicate that the aquifer can be classified in the very low to low range indicating suitability for small private water supply wells.
    iii. A review of pump test specific gravity wells for 173 historic wells indicates that wells in the intermediate to high classification range are also likely to occur in the area.
    iv. At the specified MOE peak pumping rate of 13.7 lpm over 2 hours, the anticipated drawdown is expected to range from 1.5 to 15 m with full recovery in under 12 hours.

6.2. Groundwater Supply Quality

A sample of groundwater was taken from each of the Test Wells following completion of the stepped pumping tests for water quality analyses. Samples were collected and analysed by Near North Laboratories Inc. (Near North). Samples were submitted and analyzed for parameters to satisfy Ontario Regulation 23/14.

Certificates of Analytical results for the test well are provided in Appendix E. The following Table summarizes sample details.

Sample Source	Well Tag ID	Sample Date	Lab ID	Appearance
Test Well 1	A385454	Nov 8, 2023	23K0494	Cloudy with white particulate
Test Well 2	A385453	Oct 30, 2023	23J1544	Slight cloudy
Test Well 3	A385476	Nov 8, 2023	23K0458	Cloudy - pale yellow
Test Well 4	A385480	Nov 22, 2023	23K1062	Cloudy with black particulate
Test Well 5	A385475	Nov 20, 2023	23K0880	Cloudy – yellow-grey

All parameters were within designated health criteria limits except total coliform for the sample from Test Wells 4 and 5. Test Well 5 sample also reported 1 ppm escherichia coli.

Additional well development, flushing and disinfection is expected to address these parameters as will be done prior to any new well being commissioned.

There were some slightly elevated values of Aesthetic Limits for TDS, TSS, turbidity, iron and general bacteria. Some samples indicate water hardness suggesting a need for water softeners.

6.3. On-site Sewage Systems

All new homes will require a class IV on-site sewage system consisting of a septic tank and an adsorption bed. Based on current practice, it is likely that all systems will include filter beds as they minimize area requirements for the top of the bed. For example, a filter bed for a 4 bedroom home with a design flow of 2,000 lpd would need to be 2,000/75 = 26.7 m^2 or about 5 m x 5.5 m.

Based on the site reconnaissance and test pit program expected surface conditions will include:

1. Varved Silt and Clay – Percolation Time (T) estimated > 50.
2. Sandy Glacial Till - T estimated 5 to 15
3. Bedrock – T estimated > 50.

As per Part 8 of the building code for soils with a T > 15, mantle must be imported. In such cases, the bed will generally be fully raised to be on top of the imported mantle. Also if the water table is at or near surface, beds will need to be fully raised with imported mantle.

Mantle area requirements for a 4 bedroom home will be as follows:

1. T > 20 – Mantle Area = 2,000/8 = 250 m^2 or about 16 x 16 m
2. T > 50 – Mantle Area = 2,000/4 = 500 m^2 or about 22.5 x 22.5 m

Based on the above preliminary calculations for a standard 4 bedroom home, some lots on the subject properties are anticipated to require a fully raised filter bed on imported mantle. The lots range in size from 8,000 m^2 and higher so less than 5 % of each lot will be required for the septic system foot print. Therefore, it is not anticipated that there will be any space and clearance issues with the siting and construction of the on-site sewage systems.

In terms of potential impact of on-site septic systems on groundwater, the following points are relevant:

1. Where possible, septic systems should be installed on lower permeability surficial soils as it will provide an effective separation barrier between the septic system effluent and bedrock aquifer.
2. Septic beds should be placed in areas where overburden deposits have a greater thickness over bedrock, and as far away from any drilled wells as possible to provide as much natural separation and attenuation of septic system effluent.

3. Septic beds should be placed so that shallow groundwater and/or effluent flows are directed away from the well locations by taking into account topography and localized surface geological features.

Based on the site conditions determined from site reconnaissance, it is judged that by strategically placing the septic beds as described above, the potential risk to the bedrock aquifer will be very low.

Septic effluent impacts to surface water flows leaving the property are expected to be minimal for the following reasons:

1. Use of proper construction techniques for septic systems by licensed installer as required by the OBC.
2. Studies have shown that finer soils generally provide greater attenuation of BOD, Nitrogen and Phosphorus then coarser grained soils. Therefore placement of the septic beds on the lower permeability overburden with adequate mantle areas for infiltration will be beneficial for mitigating septic be effluent quality.
3. The large size of the lots with respect to the septic bed area requirements will allow beds to be located away from any sensitive areas.

Nitrogen levels in on-site sewage effluent can be estimated from the following sources.

1. USEPA – 11 grams per person per day (https://groundstone.ca/2019/01/nitrogen-in-sewage-systems/)
2. MOEE D-5-4 – 40 grams per single family dwelling per day.
3. Typical Concentration 40 mg/L (https://www.app4water.com/resources/technical-documents/characteristics-of-residential-wastewater/)

Based on this information, the estimated nitrogen loading from a 4 bedroom home can be calculated as follows.

- Based on a flow of 1,800 lpd and a concentration of 40 mg/L, a total daily loading would be 72 grams of nitrogen per day.

The annual average amount of precipitation in North Bay is 975 mm (https://en.climate-data.org/north-america/canada/ontario/north-bay-14610/). Based on gross run-off coefficient post development of 60 %, the annual rain fall infiltration volume for 1 m^2 will be 0.975 m x 0.4 x 1 m^2 = 0.39 m^3 or 390 litres per year. This equates to 1.07 litres per day per m^2. In order to meet the Ontario drinking water standards, nitrogen levels in the groundwater should be kept below 10 mg/L. Based on a total nitrogen load of 72 g per day, to maintain a concentration below 10 mg/L, a total volume of 7,200 litres per day is required including effluent and infiltration. Therefore a total daily volume of infiltration of 7,200 – 1,800 = 5,400 litres is required. Based on an infiltration rate of 1.07 litres per day per m2, an area of 5,400/1.07 = 5047 m^2 or roughly 0.5 hectares is required to provide enough lot area to

attenuate nitrogen levels. Therefore, the minimum lot size should be kept at 0.5 hectares or larger.

7. CONCLUSIONS

Rural lot development of the subject properties is being proposed by the client A hydrogeological site assessment was undertaken to characterize the geological and hydrogeological conditions of the subject properties to support the proposed rural lot subdivision.

Based on the review of available background information and site investigations the overburden at the site consists of glaciolacustrine varved silt and clay deposits, glacial till ranging from sand and gravel to silty sand overlain by thin topsoil. Deeper organic deposits occur along drainage courses. Overburden depths up to 10 m occur based on historic well logs.

Review of 173 well records in the vicinity of the subject properties indicated that supply of enough water to support single family dwellings is highly likely. Five test wells and pumping tests were completed Based on the test well completion and pump testing, it is anticipated that there will be adequate domestic water supply for the proposed single family dwellings.

Review of water quality data from samples taken at the end of the pump test show that the groundwater quality is generally acceptable for human consumption with all parameters below health criteria limits except some elevated levels of coliform and a 1 ppm result for ecoli. Proper well development, flushing and disinfection of all new systems prior to commissioning will address this.

A review of on-site septic systems indicate that a minimum lot size of 0.5 hectares should be maintained and that standard filter bed construction with imported mantles where required for soil or groundwater conditions will be satisfactory.

8. CLOSURE

Should you have any questions regarding the information presented herein, please contact the underisgned.

Sincerely yours,

Matthew R Parfitt P.Eng.
Senior Geological Engineer
North Bay

TABLE 1 - WATER WELL RECORD DATA ANALYSES SUMMARY

	Well No.	Date Drilled	Overburden Encountered Depth	Type		Total Depth	Water Found	Static Level	Pump Rate	Pump Level	Pumptest Duration	Maximum Drawdown	Total Recovery	Percent Recovery	Specific Capacity	Well Volume	120 min. Pump Vol.	Total Vol. Available	Vol. minus Drawdown	Hydro Frack
	No.		m			m	m	m	lpm	m	hr	m	m		lpm/m	litres	litres	litres	litres	
1	4307205	10-Jun-02	2.13	sand	boulders	27.43	25.91	0.91	226.80	21.34	1.0	N/A	N/A	N/A	N/A	360.77	27216.00	27576.77	N/A	no
2	4307225	30-May-02	3.96	clay	sand	110.34		4.27	26.46	45.72	72.0	26.21	26.21	100%	1.01	833.04	3175.20	4008.24	3481.52	yes
3	4307227	17-Jun-02	1.83	sand		73.76	19.51	7.62	15.12	60.96	1.0	66.14	66.14	100%	0.23	1071.92	1814.40	2886.32	1557.17	no
4	4307229	29-Jul-02	4.88	sand	boulders	92.05		7.01	37.80	39.62	10.0	23.47	23.47	100%	1.61	655.40	4536.00	5191.40	4719.75	yes
5	4307237	06-Dec-01	3.96	clay		61.57	54.86	2.74	26.46	36.58	1.0	58.83	58.83	100%	0.45	679.90	3175.20	3855.10	2672.86	no
6	4307246	23-Aug-02	3.96	sand	gravel	36.88	30.48	4.88	75.60	30.48	1.0	N/A	N/A	N/A	N/A	514.52	9072.00	9586.52	N/A	no
7	4307261	01-Jul-02	10.67	clay	silt & sand	121.92	113.69	1.22	37.80	76.20	1.3	75	75	100%	0.50	1506.81	4536.00	6042.81	4535.61	no
8	4307267	30-Sep-02	6.71		boulders	18.90	12.19	3.05	26.46	12.19	1.0	15.85	15.85	100%	1.67	183.76	3175.20	3358.96	3040.44	no
9	4307268	14-Sep-02	3.96	sand	boulders	49.38	26.52	6.10	13.23	42.67	5.0	43.28	43.28	100%	0.31	735.03	1587.60	2322.63	1452.88	no
10	4307271	29-Aug-02	5.18	clay	sand & boulders	98.15	91.44	4.88	5.67	79.25	1.0	93.27	93.27	100%	0.06	1494.56	680.40	2174.96	300.61	yes
11	4307305	31-Aug-02	2.74	clay	sand & boulders	98.15		1.83	11.34	82.30	10.0	28.65	28.65	100%	0.40	1617.07	1360.80	2977.87	2402.12	yes
12	4307310	30-Sep-02	1.52	sand	boulders	61.57	59.13	7.32	264.60		1.0	54.25	54.25	100%	4.88		31752.00	31752.00	30661.79	no
13	4307445	15-Sep-03	4.57	clay	sand & boulders	99.67	surged	7.01	56.70	60.96	38.0	53.95	53.95	100%	1.05	1084.17	6804.00	7888.17	6803.99	no
14	4307446	12-Sep-03	0.91	sand		76.20	76.20	7.92	378.00	30.48	1.0	22.56	22.56	100%	16.76	453.27	45360.00	45813.27	45359.90	no
15	4307476	09-Sep-03	9.75	sand	clay	55.47	50.29	3.05	37.80	30.48	1.0	18.9	18.9	100%	2.00	551.27	4536.00	5087.27	4707.46	no
16	4307478	11-Sep-03	3.05	sand	boulders	73.15	66.45	7.32	113.40	18.29	1.0	1.83	1.83	100%	61.97	220.51	13608.00	13828.51	13791.73	no
17	4307497	25-Nov-03	2.43	sand	boulders	55.00	50.00	9.14	45.50	45.50	2.0	11.98	11.98	100%	3.80	730.69	5460.00	6190.69	5949.94	no
18	4307511	02-Apr-04	6.10	clay	gravel	105.46	surged		11.34	182.88	1.0	N/A	N/A	N/A	N/A	3675.16	1360.80	5035.96	N/A	no
19	4307515	26-Apr-04	0.30	gravel		83.82	83.52	6.71	37.80	12.19	1.0	N/A	0	100%	N/A	110.25	4536.00	4646.25	4646.25	no
20	4307535	09-Jul-04	2.74	sand	gravel	39.62	39.62	7.01	378.00	38.71	1.0	31.7	N/A	N/A	11.92	637.03	45360.00	45997.03	N/A	no
21	4307537	25-Jun-04				30.48	28.35	9.45	151.20	24.38	1.0	20.73	N/A	N/A	7.29	300.14	18144.00	18444.14	N/A	no
22	4307547	15-Jun-04	5.49	sand	boulders	73.15	surge	7.62	18.90	48.77	1.0	0.61	0.61	100%	30.98	826.91	2268.00	3094.91	3082.65	no
23	4307549	09-Jul-04	1.52	sand		36.58	23.77	6.10	189.00	30.48	1.0	29.57	N/A	N/A	6.39	490.02	22680.00	23170.02	N/A	no
24	4307654	11-Nov-04	1.10	sand		129.50	95.00		20.00	76.20	1.0	29.3	29.3	100%	0.68	1531.32	2400.00	3931.32	3342.50	no
25	4307699	26-May-05	3.96	clay	gravel	61.57	56.08	3.05	37.80	30.48	1.0	3.35	3.35	100%	11.28	551.27	4536.00	5087.27	5019.95	no
26	4307742	18-Jul-05	0.91	sand		73.76	surged	4.27	378.00	42.67	1.0	24.485	24.485	100%	15.44	771.78	45360.00	46131.78	45639.73	no
27	4307743	19-Jul-05	1.07	sand		73.76	48.77	7.62	11.34	67.06	1.0	22.86	16.383	72%	0.50	1194.43	1360.80	2555.23	2225.99	no
28	4307793	29-Sep-05	4.57	sand	boulders	109.73	92.96	9.14	37.80	82.30	1.0	25	24.69	99%	1.51	1543.57	4536.00	6079.57	5583.40	no
29	4307799	05-Sep-05	2.74	sand	boulders	76.81	74.68	2.74	37.80	18.29	1.0	0.62	0.62	100%	60.97	312.39	4536.00	4848.39	4835.93	no
30	4307848	06-Dec-05	3.05	sand	boulders	37.19	32.00	6.10	37.80	24.38	1.0	3.05	3.05	100%	12.39	367.52	4536.00	4903.52	4842.22	no
31	4307862	22-Dec-05	1.52	sand		67.67	surged	4.57	26.46	60.96	1.0	62.48	N/A	N/A	0.42	1133.17	3175.20	4308.37	N/A	no
32	4307871	20-Apr-06	4.27	sand	gravel	30.48	7.62	1.22	37.80	24.38	24.0	4.88	N/A	N/A	7.75	465.52	4536.00	5001.52	N/A	no
33	4307888	27-Mar-06	1.83	sand	clay	43.28	38.40	3.66	37.80	18.29	1.0	1.63	1.63	100%	23.19	294.01	4536.00	4830.01	4797.26	no
34	4307889	28-Apr-06	1.83	sand	gravel	54.86	51.82	3.66	37.80	30.48	1.0	13.11	13.11	100%	2.88	539.02	4536.00	5075.02	4811.56	no
35	4307890	27-Apr-06	5.49	sand	boulders	43.28	25.91	3.66	37.80	30.48	1.0	15.24	15.24	100%	2.48	539.02	4536.00	5075.02	4768.76	no
36	4307912	20-Jun-06	4.57	gravel	clay	42.67	38.40	1.83	378.00	30.48	1.0	39.32	N/A	N/A	9.61	575.77	45360.00	45935.77	N/A	no
37	4307921	05-Jul-06	0.91		clay	37.19	18.29	3.66	18.90	30.48	1.0	4.88	4.88	100%	3.87	539.02	2268.00	2807.02	2708.95	no
38	4307954	21-Jun-06	2.13	sand	boulders	109.73	92.96	5.49	37.80	82.30	1.0	25	24.69	99%	1.51	1543.57	4536.00	6079.57	5583.40	no
39	4307967	25-Jul-06	3.05	sand	boulders	92.05		1.22	18.90	60.96	1.0	9.39	7.82	83%	2.01	1200.55	2268.00	3468.55	3311.40	yes
40	4307981	21-Jul-06	1.22	boulders	clay	79.86	79.25	6.40	18.90	45.72	1.0	3.65	3.65	100%	6.20	790.16	2268.00	3058.16	2996.87	no
41	4307989	22-Aug-06	4.27	oulders & grav	clay	152.40		1.22	37.80	121.92	1.0	29.26	17.37	59%	1.29	2425.60	4536.00	6961.60	6612.54	yes
42	4307996	22-Nov-06	3.05	sand	boulders	61.26	surged	0.30	18.90	54.86	1.0	60.66	N/A	N/A	0.31	1096.42	2268.00	3364.42	N/A	no
43	7046433	23-Apr-07				36.88	32.00	9.45	378.00	30.48	1.0	20.42	N/A	N/A	18.51	422.64	45360.00	45782.64	N/A	no
44	7049728	09-Jun-07	1.22	sand	boulders	103.63	88.39	4.27	37.80	82.30	1.0	26.21	20.73	79%	1.44	1568.07	4536.00	6104.07	5687.48	no
45	7049795	06-Sep-07	5.49	sand	clay	60.96	60.96	1.83	756.00	9.14	1.0	57.61	N/A	N/A	13.12	147.01	90720.00	90867.01	N/A	no
46	7049805	17-Aug-07	2.13	sand		124.97		6.10	113.40	45.72	1.0	117.35	N/A	N/A	0.97	796.28	13608.00	14404.28	N/A	no
47	7050367	11-Sep-07	1.80	gravel		121.90		7.60	20.00	97.50	1.0	43.6	27.1	62%	0.46	1806.63	2400.00	4206.63	3662.03	yes
48	7053707	16-Aug-07	3.35	sand	boulders	103.63	98.45	5.18	37.80	60.96	1.0	25.3	25.3	100%	1.49	1120.92	4536.00	5656.92	5148.49	no
49	7054321	29-Oct-07	1.52	sand		49.38	43.89	5.49	37.80	24.38	1.0	0.3048	0.3048	100%	124.02	379.77	4536.00	4915.77	4909.64	no
50	7100678	27-Nov-07	1.80	boulders		121.90		6.10	20.00	115.80	1.0	29.7	29.7	100%	0.67	2204.53	2400.00	4604.53	4007.68	yes
51	7105987	21-May-08	2.13	sand	clay & gravel	25.91	22.86	3.35	226.80	21.34	1.0	21.03	N/A	N/A	10.78	361.39	27216.00	27577.39	N/A	no
52	7106701	01-Apr-08	1.52	sand		55.47	50.60	4.57	37.80	18.29	1.0	0.91	0.91	100%	41.54	275.64	4536.00	4811.64	4793.35	no
53	7110394	19-Jul-08	2.13		clay	118.57	surged	1.22	11.34	109.73	1.0	114.6	N/A	N/A	0.10	2180.59	1360.80	3541.39	N/A	no
54	7112561	26-Sep-08	2.44	sand	clay	115.82	111.25	3.66	37.80	79.25	1.0	26.82	25.45	95%	1.41	1519.06	4536.00	6055.06	5543.62	no
55	7112570	15-Aug-08	2.13	sand	gravel	44.20	43.89	5.18	37.80	15.24	1.0	N/A	0	100%	N/A	202.13	4536.00	4738.13	4738.13	no
56	7114449	03-Jul-08	3.35	gravel	boulders	121.92	115.21	6.71	37.80	82.30	1.0	23.77	23.77	100%	1.59	1519.06	4536.00	6055.06	5577.38	no
57	7115432	17-Oct-08	3.66	sand	boulders	105.77	surged	6.10	22.68	91.44	1.0	97.54	N/A	N/A	0.23	1715.07	2721.60	4436.67	N/A	no
58	7116213	11-Aug-08	1.22	sand		70.10	68.28	5.79	37.80	24.38	1.0	0.61	0.61	100%	61.97	373.64	4536.00	4909.64	4897.38	no
59	7116218	19-Nov-08	4.57	sand	gravel	73.15	67.06	9.14	18.90	38.10	1.0	2.13	2.13	100%	8.87	581.90	2268.00	2849.90	2807.10	no
60	7116222	20-Nov-08	5.49	sand	gravel	67.06	60.96	9.14	18.90	42.67	1.0	3.96	3.96	100%	4.77	673.78	2268.00	2941.78	2862.20	no
61	7116593	10-Sep-08	1.52	sand	clay	92.05	85.95	2.74	37.80	79.25	1.0	20.12	17.07	85%	1.88	1537.44	4536.00	6073.44	5730.40	no
62	7116596	16-Sep-08	1.52	clay		103.63	103.02	3.66	37.80	21.34	1.0	0.61	N/A	N/A	61.97	355.27	4536.00	4891.27	N/A	no
63	7116597	17-Nov-08	3.05	clay	boulders & gravel	79.25	73.15	3.05	18.90	45.72	1.0	3.124	3.124	100%	6.05	857.54	2268.00	3125.54	3062.76	no
64	7116839	08-Sep-08	3.96	boulders	clay	55.47	54.25	2.74	37.80	15.24	1.0	N/A	0	100%	N/A	251.14	4536.00	4787.14	4787.14	no
65	7117096	10-Nov-08	5.18	sand	boulders	12.80	7.92	2.13	18.90	9.14	1.0	0.91	0.91	100%	FALSE	140.88	2268.00	2408.88	2390.59	no
66	7117103	23-Nov-08	4.27	sand&boulders	clay	97.54	85.34	0.00	37.80	18.29	1.0	3.048	3.048	0%	12.40	367.52	4536.00	4903.52	4842.26	no
67	7125241	24-Jun-09	0.91	sand		88.39	surged	4.57	11.34	60.96	1.0	82.3	N/A	N/A	0.14	1133.17	1360.80	2493.97	N/A	no
68	7125242	10-Jun-09	0.91	sand		42.67	39.62	2.44	151.20	22.86	2.0	37.19	N/A	N/A	4.07	410.39	18144.00	18554.39	N/A	no
69	7125245	27-May-09	1.22	sand	boulders	112.78	surged	4.88	11.34	106.68	1.0	106.38	N/A	N/A	0.11	2045.84	1360.80	3406.64	N/A	no
70	7127912	31-Dec-07	3.05		clay	118.57	surged	1.22	7.56	109.73	1.0	116.43	N/A	N/A	0.06	2180.59	907.20	3087.79	N/A	no
71	7129905	20-Jul-09	1.52	sand		60.96		3.96	18.90	54.86	1.0	56.39	N/A	N/A	0.34	1022.92	2268.00	3290.92	N/A	no
72	7129907	10-Jul-09	6.71	sand	clay	87.78	surged	0.91	30.24	60.96	1.0	7.99	7.19	90%	3.78	1266.68	3628.80	4895.48	4690.99	no
73	7129908	07-Jul-09	7.92	sand	gravel & boulders	50.90	48.77	0.00	30.24	45.72	1.0	5.24	3.9	74%	5.77	918.79	3628.80	4547.59	4469.21	no
74	7130734	14-Sep-09	2.40		clay	32.00	9.10	4.60	20.00	27.40	1.0	7.9	7.9	100%	2.53	458.19	2400.00	2858.19	2699.43	no
75	7131206	15-Sep-09	2.40	dirt	stones	109.70		3.70	20.00	76.20	1.0	18.8	18.8	100%	1.06	1456.96	2400.00	3856.96	3479.16	yes
76	7135426	15-Oct-09	2.44	sand		117.96	surged	10.06	11.34	91.44	1.0	107.29	N/A	N/A	0.11	1635.44	1360.80	2996.24	N/A	no
77	7135805	27-Oct-09	3.00		clay	54.90	47.80	4.60	20.00	48.80	1.0	7.7	7.7	100%	2.60	888.24	2400.00	3288.24	3133.50	no
78	7135991	19-Jun-08	2.74	sand		85.34	73.15	2.44	37.80	45.72	1.0	27.13	27.13	100%	1.39	869.79	4536.00	5405.79	4860.58	no
79	7136803	11-Jun-09	1.37	sand	boulders	61.57	58.83	5.49	37.80	22.86	1.0	N/A	0	100%	N/A	349.14	4536.00	4885.14	4885.14	no
80	7137036	23-Aug-09	7.62	sand	clay	164.59		1.52	37.80	76.20	1.0	28.96	26.57	92%	1.31	1500.69	4536.00	6036.69	5502.74	yes
81	7137050	10-Sep-09	5.18	sand	clay	109.73		1.52	18.90	39.62	1.0	0.3048	N/A	N/A	62.01	765.66	2268.00	3033.66	N/A	yes
82	7137196	23-Nov-09	0.91	sand		91.44	82.30	4.57	18.90	45.72	1.0	9.144	7.9248	87%	2.07	826.91	2268.00	3094.91	2935.65	no
83	7152254	20-Sep-10	4.60		clay	47.20		6.10	20.00	42.70	1.0	14.9	14.9	100%	1.34	735.51	2400.00	3135.51	2836.08	yes
84	7153893	22-Oct-10	3.35		clay	38.71	36.58	6.40	15.12	35.66	1.0	23.78	1.83	8%	0.64	588.03	1814.40	2402.43	2365.65	no
85	7154620	27-Apr-10	4.88	sand	boulders	99.06		10.67	37.80	15.24	1.0	N/A	0	100%	N/A	91.88	4536.00	4627.88	4627.88	no
86	7154634	28-Apr-10	2.13	sand	gravel	73.76	67.06	6.10	37.80	64.01	1.0	24.384	14.624	60%	1.55	1163.80	4536.00	5699.80	5405.92	no
87	7154640	27-May-10	4.88	sand	clay	109.73		3.05	37.80	79.25	1.0	27.432	19.2	70%	1.38	1531.32	4536.00	6067.32	5681.47	yes
88	7155680	25-Jun-10	3.66	sand	clay	55.47	51.82	2.74	37.80	42.67	1.0	27.74	23.55	85%	1.36	802.41	4536.00	5338.41	4865.15	no
89	7156302	31-Aug-10	0.91	gravel		103.63		6.10	37.80	70.10	1.0	24.384	23.47	96%	1.55	1286.30	4536.00	5822.30	5350.65	yes
90	7156332	16-Oct-10	4.27	sand	gravel & boulders	79.25	74.68	0.00	18.90	30.48	1.0	3.35	3.35	100%	5.64	612.53	2268.00	2880.53	2813.20	no
91	7156561	14-Oct-10	3.05	gravel	boulders	97.54		2.74	18.90	39.62	1.0	1.22	1.22	100%	15.49	741.16	2268.00	3009.16	2984.64	yes
92	7164295	16-May-11	3.70	sand	clay	109.70		6.10	20.00	91.40	1.0	8.9	8.9	100%	2.25	1714.19	2400.00	4114.19	3935.33	yes
93	7168785	24-May-11	1.22		clay	36.58	36.58	1.22	378.00	30.48	1.0	33.83	N/A	N/A	11.17	588.03	45360.00	45948.03	N/A	no
94	7168786	01-Sep-11	3.05	sand		112.17	surged	1.22	26.46	91.44	1.0	108.51	N/A	N/A	0.24	1813.08	3175.20	4988.28	N/A	no
95	7168793	15-Jul-11	3.05		clay	124.97	surged	2.74	15.12	106.68	1.0	120.7	N/A	N/A	0.13	2088.71	1814.40	3903.11	N/A	no
96	7170355	17-Aug-11	3.05	sand & gravel	clay	103.63		1.22	37.80	67.06	1.0	29.26	22.86	78%	1.29	1323.06	4536.00	5859.06	5399.66	yes
97	7171806	26-Aug-11	6.10	sand	boulders	68.60	15.20	6.10	20.00	54.90	1.0	7.9	7.9	100%	2.53	980.58	2400.00	3380.68	3221.93	yes
98	7172452	25-Oct-11	3.00	sand		128.00		4.60	20.00	121.90	1.0	61.3	19.7	32%	0.33	2357.26	2400.00	4757.26	4361.37	yes
99	7172902	18-Aug-11	6.10	sand	clay	18.90	16.76	1.22	37.80	7.62	1.0	N/A	0	100%	N/A	128.63	4536.00	4664.63	4664.63	yes
100	7173052	23-Aug-11	0.76	sand		128.02		9.14	37.80	79.25	1.0	21.336	11.2776	53%	1.77	1408.81	4536.00	5944.81	5718.18	no
101	7182167	14-Apr-12	1.68	sand		49.38	46.94	3.05	18.90	21.34	1.0	N/A	0	100%	N/A	367.52	2268.00	2635.52	2635.52	no
102	7182168	2012-04-14	3.05	sand	gravel	43.28	36.27	3.05	18.90	24.38	1.0	1.524	1.524	100%	12.40	428.77	2268.00	2696.77	2666.14	no
103	7184695	25-Jun-12	1.50	sand		44.20	12.20	4.60	20.00	30.50	1.0	2.2	2.2	100%	9.09	520.49	2400.00	2920.49	2876.28	no
104	7186105	25-Apr-12	1.83	sand	stones	97.54		5.49	37.80	79.25	1.0	25	17.65	71%	1.51	1482.31	4536.00	6018.31	5663.62	yes
105	7186106	25-Apr-12	1.22	sand		54.86	53.04	7.62	37.80	24.38	1.0	N/A	0	100%	N/A	336.89	4536.00	4872.89	4872.89	no
106	7188264	07-Sep-12	2.40		clay	42.70		6.10	20.00	30.50	1.0	3.4	3.4	100%	5.88	490.34	2400.00	2890.34	2822.02	no
107	7190701	20-Aug-12	4.88	sand	gravel	115.82		3.66	18.90	54.86	1.0	3.9624	3.9624	100%	4.77	1029.04	2268.00	3297.04	3217.42	yes
108	7193082	18-Apr-12	3.96	sand	gravel	103.63	90.83	8.53	37.80	79.25	1.0	21.95	14.94	68%	1.72	1421.06	4536.00	5957.06	5656.83	no
109	7194043	18-Jun-12	1.52	sand	boulders	18.90	15.54	3.66	18.90	12.19	1.0	0	0	100%	N/A	171.51	2268.00	2439.51	2439.51	no
110	7194071	15-Oct-12	2.44	gravel		97.54		6.10	18.90	45.72	1.0	4.572	4.572	100%	4.13	796.28	2268.00	3064.28	2972.40	yes
111	7205777	31-Mar-13	7.92	gravel	stones	73.15	68.58	7.32	18.90	48.77	1.0	11.2776	9.144	81%	1.68	833.04	2268.00	3101.04	2917.28	no
112	7205782	14-Apr-13	5.49	sand	boulders	49.38	45.72	6.71	18.90	38.10	1.0	1.53	1.524	100%	12.35	630.90	2268.00	2898.90	2868.28	no
113	7205783	13-Jun-13	4.57	sand	gravel	67.06	57.61	6.10	37.80	30.48	1.0	N/A	0	100%	N/A	490.02	4536.00	5026.02	5026.02	no
114	7205784	12-Jun-13	3.96	sand	gravel & boulders	49.38	42.67	3.05	18.90	42.67	1.0	1.835	1.835	100%	10.30	796.28	2268.00	3064.28	3027.41	no
115	7208805	24-Sep-13	8.50	sand		103.60	36.60	4.60	20.00	91.40	1.0	8.96	8.96	100%	2.23	1744.33	2400.00	4144.33	3964.27	no
116	7210474	23-Jul-13	2.44	and & boulder	clay	85.34	51.51	5.18	37.80	73.15	1.0	25.3	19.51	77%	1.49	1365.93	4536.00	5901.93	5509.86	no
117	7211237	16-Oct-13	9.10	gravel	clay	103.60	85.30	3.00	20.00	91.40	1.0	18.1	18.1	100%	1.10	1776.49	2400.00	4176.49	3812.75	no
118	7212825	29-Oct-13	3.66	sand&boulder	clay	49.38	39.62	0.00	18.90	18.29	1.0	1.524	1.524	100%	12.40	367.52	2268.00	2635.52	2604.89	no
119	7213598	24-May-13	1.52	gravel		59.74	59.13	4.57	37.80	30.48	1.0	N/A	0	100%	N/A	520.65	4536.00	5056.65	5056.65	no
120	7213611	12-Aug-13	3.66	gravel	boulders	91.44	79.55	3.66	37.80	83.82	1.0	26.82	21.03	78%	1.41	1610.94	4536.00	6146.94	5724.32	no
121	7213615	21-Aug-13	3.66	sand	clay	67.06	54.86	3.05	37.80	54.86	1.0	27.432	25	91%	1.38	1041.29	4536.00	5577.29	5074.89	no
122	7213666	09-Sep-13	2.44		gravel	85.34		6.40	18.90	42.67	1.0	9.96	9.96	100%	1.90	728.91	2268.00	2996.91	2796.75	yes
123	7213680	07-Oct-13	7.01	sand	gravel & boulders	97.54	94.49	6.10	18.90	45.72	1.0	3.66	3.66	100%	5.16	796.28	2268.00	3064.28	2930.73	no
124	7222572	06-Jun-14	4.30	pit run fill		134.10		6.10	20.00	160.70	1.0	4.572	4.572	100%	4.37	3106.84	2400.00	5506.84	5414.96	yes
125	7223215	22-Jan-14	3.05	sand	gravel	37.19	31.09	3.05	18.90	22.86	1.0	0.61	0.61	100%	30.98	393.14	2268.00	2666.14	2653.88	no
126	7230305	06-Oct-14	5.18	sand	clay	67.67	63.70	7.01	18.90	42.67	1.0	0.9144	0.9144	100%	20.67	716.66	2268.00	2984.66	2966.28	no
127	7230314	07-Apr-14	1.37	sand		85.34		3.66	18.90	45.72	1.0	2.44	2.44	100%	7.75	845.29	2268.00	3113.29	3064.25	yes
128	7233016	26-Jun-14	3.05	sand	stone	43.28	37.80	3.66	37.80	22.86	1.0	1.22	1.22	100%	30.98	385.89	4536.00	4921.89	4897.31	no
129	7233019	07-May-14	1.52	gravel		73.76	70.10	8.53	37.80	30.48	1.0	0.61	0.61	100%	61.97	441.02	4536.00	4977.02	4954.76	no
130	7233923	26-Aug-14	4.57	sand&stones	clay	91.44	surged	2.44	37.80	51.82	1.0	28.04	21.64	77%	1.35	992.29	4536.00	5528.29	5093.41	no

131	7233926	19-Sep-14	1.22	sand&stones	clay	116.43		3.66	37.80	79.25	1.0	26.82	21.03	78%	1.41	1519.06	4536.00	6055.06	5632.45	yes
132	7234080	26-Sep-14	1.22	sand		97.54		5.49	37.80	91.44	1.0	25	19.43	78%	1.51	1727.32	4536.00	6263.32	5872.86	yes
133	7241227	2015-04-08	3.00	sand	clay	35.60	12.20	3.00	20.00	21.30	1.0	0.8	0.8	100%	25.00	367.76	2400.00	2767.76	2751.68	no
134	7243842	22-May-15	1.20	sand&gravel	clay	30.50	29.00	0.60	20.00	24.40	1.0	8.2	8.2	100%	2.44	478.28	2400.00	2878.28	2713.50	no
135	7248087	05-Aug-15	3.00	boulder&grave	clay	134.10	38.40	9.10	20.00	106.70	1.0	29.1	29.1	100%	0.69	1961.37	2400.00	4361.37	3776.58	no
136	7255240	16-Nov-15	4.57	sand	clay&stones	91.44		4.57	37.80	45.72	1.0	25.91	23.16	89%	1.46	826.91	4536.00	5362.91	4897.49	yes
137	7255241	07-Nov-15	1.83	sand		73.15	45.72	5.49	37.80	48.77	1.0	25	23.77	95%	1.51	869.79	4536.00	5405.79	4928.11	no
138	7255243	23-Oct-15	1.52	sand		85.34	79.25	5.49	15.12	73.15	1.0	1.83	1.83	100%	8.26	1359.81	1814.40	3174.21	3137.43	no
139	7255263	02-Sep-15	2.13	sand	clay	37.19	15.85	3.05	18.90	22.86	1.0	0.9144	0.9144	100%	20.67	398.14	2268.00	2666.14	2647.77	no
140	7255372	22-Feb-15	3.96	sand	boulders	37.19	35.05	3.05	37.80	18.29	1.0	N/A	0	100%	N/A	306.26	4536.00	4842.26	4842.26	no
141	7255437	21-Oct-15	6.71	gravel	boulders	91.44	77.72	3.05	18.90	30.48	1.0	N/A	0	100%	N/A	551.27	2268.00	2819.27	2819.27	no
142	7255438	13-Aug-15	3.35	sand	clay & gravel	43.28	38.10	3.66	18.90	22.86	1.0	3.048	3.048	100%	6.20	385.89	2268.00	2653.89	2592.64	no
143	7255439	13-Aug-15	1.83	sand		43.28	36.58	4.57	18.90	22.86	1.0	1.524	1.524	100%	12.40	367.52	2268.00	2635.52	2604.89	no
144	7265312	08-Apr-16	0.61	fill		109.73	108.20	12.83		79.25	1.0	10.33	10.33	100%	N/A	1334.69		1334.69	1127.10	no
145	7278091	12-Jul-16	2.44	sand	clay	37.19	35.36	2.44	37.80	18.29	1.0	0.6096	0.6096	100%	62.01	318.51	4536.00	4854.51	4842.26	no
146	7278097	25-Nov-16	1.22	gravel		83.82	82.30	12.19	37.80	24.38	1.0	N/A	0	100%	N/A	245.01	4536.00	4781.01	4781.01	no
147	7278103	02-Jul-16	4.57	gravel		98.15	89.92	4.88	37.80	30.48	1.0	27.432	18.89	69%	1.38	514.52	4536.00	5050.52	4670.91	no
148	7278104	01-Jul-16	3.66	sand	gravel & boulders	57.91	55.78	3.05	37.80	18.29	1.0	N/A	0	100%	N/A	306.26	4536.00	4842.26	4842.26	no
149	7278240	27-Sep-16	2.44	sand	stones	109.73		6.10	37.80	79.25	1.0	9.144	9.144	100%	4.13	1470.06	4536.00	6006.06	5822.30	yes
150	7278264	12-Dec-16	4.27	sand	clay	30.48	17.07	2.44	18.90	18.29	1.0	0.6096	0.6096	100%	31.00	318.51	2268.00	2586.51	2574.26	no
151	7278267	28-Jun-16	8.84	sand	clay & boulders	85.34		7.62	18.90	48.77	1.1	51.82	24.38	47%	0.36	826.91	2268.00	3094.91	2604.97	yes
152	7290391	13-May-17	2.13	gravel		67.06	64.01	0.00	18.90	45.72	1.0	10.98	10.98	100%	1.72	918.79	2268.00	3186.79	2966.14	no
153	7298405	05-Oct-17				91.40	68.60	9.10	20.00	36.60	1.0	2.2	2.2	100%	9.09	552.64	2400.00	2952.64	2908.43	no
154	7301943	13-Oct-17	1.52	sand		73.15	70.10	0.00	37.80	9.14	1.0	N/A	0	100%	N/A	183.76	4536.00	4719.76	4719.76	no
155	7301945	13-Aug-17	2.74	sand	gravel	97.54	83.52	4.57	18.90	38.10	1.0	8.48	8.48	100%	2.23	673.78	2268.00	2941.78	2771.36	no
156	7302660	19-Sep-17	3.66	and & boulder	clay	103.63	85.34	4.57	37.80	73.15	1.0	13.72	13.72	100%	2.76	1378.18	4536.00	5914.18	5638.47	no
157	7302664	01-Dec-17	0.91	sand		140.21		1.52	37.80	48.77	1.0	13.72	12.74	93%	2.76	949.42	4536.00	5485.42	5229.39	yes
158	7324491	07-Jun-18	1.83	sand	stones	77.72	77.42	1.52	37.80	18.29	1.0	N/A	0	100%	N/A	336.89	4536.00	4872.89	4872.89	no
159	7324586	08-Apr-18	1.52	sand		109.73		1.52	37.80	45.72	1.0	28.96	24.69	85%	1.31	888.16	4536.00	5424.16	4927.99	yes
160	7324597	11-Jun-18	3.96	sand	stones	115.82		3.96	18.90	42.67	1.0	11.28	11.28	100%	1.68	777.91	2268.00	3045.91	2819.23	yes
161	7345493	01-Oct-19	3.05	sand	boulders	36.58	33.53	7.62	18.90	30.48	1.0	1.22	1.22	100%	15.49	459.39	2268.00	2727.39	2702.88	no
162	7345494	01-Oct-19	1.22	sand	stones	48.77	42.67	7.62	18.90	30.48	1.0	14.63	13.77	94%	1.29	459.39	2268.00	2727.39	2450.67	no
163	7348859	17-Sep-19	4.27	sand	clay & stones	115.82		4.57	37.80	82.30	1.0	25.91	15.29	59%	1.46	1561.94	4536.00	6097.94	5790.67	yes
164	7348861	16-Sep-19	1.52	sand	stones	91.44		5.49	18.90	42.67	1.0	1.83	1.83	100%	10.33	747.28	2268.00	3015.28	2978.51	yes
165	7349090	23-Sep-19	1.22	sand	boulders	73.76	70.71	5.49	18.90	42.67	1.0	9.75	9.75	100%	1.94	747.28	2268.00	3015.28	2819.35	no
166	7349097	16-Aug-19	4.88	sand	clay & stones	115.82	surged	5.18	37.80	79.25	1.0	10.06	9.144	91%	3.76	1488.44	4536.00	6024.44	5840.68	no
167	7350107	18-Oct-19	0.61	gravel		36.58	36.27	4.27	18.90	21.34	1.0	N/A	0	100%	N/A	343.01	2268.00	2611.01	2611.01	no
168	7350117	10-Nov-19	2.13	sand	gravel	42.67	37.49	3.66	37.80	24.38	1.0	0.6096	0.6096	100%	62.01	416.52	4536.00	4952.52	4940.27	no
169	7378300	04-May-20	1.22	sand		109.73		6.10	37.80	79.25	1.0	24.384	18.08	74%	1.55	1470.06	4536.00	6006.06	5642.73	yes
170	7378301	07-May-20	5.18	sand	boulders & gravel	115.82		5.49	18.90	83.82	1.0	9.75	8.84	91%	1.94	1574.19	2268.00	3842.19	3664.54	yes
171	7379848	29-Jul-20	1.52	sand	clay&stones	79.25	78.64	2.44	18.90	22.86	1.0	N/A	0	100%	N/A	410.39	2268.00	2678.39	2678.39	no
172	7379869	06-Oct-20	3.66	sand	clay&stones	7.92	85.34	2.44	56.70	48.77	1.0	10.06	10.06	100%	5.64	931.04	6804.00	7735.04	7532.87	no
173	7420371	28-Apr-22	2.44	sand	gravel	54.86	51.82		18.90	51.82	1.0	12.65	11.43	90%	1.49	1041.29	2268.00	3309.29	3079.60	no

Max		10.67			164.59	115.21	12.83	756.00	182.88		120.70	93.27	100.00%	124.02	3675.16	90720.00	90867.01	45639.73	
Min		0.30			7.92	7.62	0.00	5.67	7.62		0.00	0.00	0.00%	0.06	91.88	680.40	1334.69	300.61	
Mean		3.20			77.22	54.76	4.60	51.39	49.60		23.32	12.51	92.71%	9.30	906.04	6167.29	7032.45	4851.26	
Stan. Dev.		1.96			32.04	25.35	2.55	90.09	29.91		27.46	15.04	16.20%	17.40	600.90	10811.33	10668.95	5482.60	

131	7233926	19-Sep-14	1.22	sand&stones	clay	116.43		3.66	37.80	79.25	1.0	26.82	21.03	78%	1.41	1519.06	4536.00	6055.06	5632.45	yes
132	7234080	26-Sep-14	1.22	sand		97.54		5.49	37.80	91.44	1.0	25	19.43	78%	1.51	1727.32	4536.00	6263.32	5872.86	yes
133	7241227	2015-04-08	3.00	sand	clay	35.60	12.20	3.00	20.00	21.30	1.0	0.8	0.8	100%	25.00	367.76	2400.00	2767.76	2751.68	no
134	7243842	22-May-15	1.20	sand&gravel	clay	30.50	29.00	0.60	20.00	24.40	1.0	8.2	8.2	100%	2.44	478.28	2400.00	2878.28	2713.50	no
135	7248087	05-Aug-15	3.00	oulder&grave	clay	134.10	38.40	9.10	20.00	106.70	1.0	29.1	29.1	100%	0.69	1961.37	2400.00	4361.37	3776.58	no
136	7255240	16-Nov-15	4.57	sand	clay&stones	91.44		4.57	37.80	45.72	1.0	25.91	23.16	89%	1.46	826.91	4536.00	5362.91	4897.49	yes
137	7255241	07-Nov-15	1.83	sand		73.15	45.72	5.49	37.80	48.77	1.0	25	23.77	95%	1.51	869.79	4536.00	5405.79	4928.11	no
138	7255243	23-Oct-15	1.52	sand		85.34	79.25	5.49	15.12	73.15	1.0	1.83	1.83	100%	8.26	1359.81	1814.40	3174.21	3137.43	no
139	7255263	02-Sep-15	2.13	sand	clay	37.19	15.85	3.05	18.90	22.86	1.0	0.9144	0.9144	100%	20.67	398.14	2268.00	2666.14	2647.77	no
140	7255372	22-Feb-15	3.96	sand	boulders	37.19	35.05	3.05	37.80	18.29	1.0	N/A	0	100%	N/A	306.26	4536.00	4842.26	4842.26	no
141	7255437	21-Oct-15	6.71	gravel	boulders	91.44	77.72	3.05	18.90	30.48	1.0	N/A	0	100%	N/A	551.27	2268.00	2819.27	2819.27	no
142	7255438	13-Aug-15	3.35	sand	clay & gravel	43.28	38.10	3.66	18.90	22.86	1.0	3.048	3.048	100%	6.20	385.89	2268.00	2653.89	2592.64	no
143	7255439	13-Aug-15	1.83	sand		43.28	36.58	4.57	18.90	22.86	1.0	1.524	1.524	100%	12.40	367.52	2268.00	2635.52	2604.89	no
144	7265312	08-Apr-16	0.61	fill		109.73	108.20	12.83		79.25	1.0	10.33	10.33	100%	N/A	1334.69		1334.69	1127.10	no
145	7278091	12-Jul-16	2.44	sand	clay	37.19	35.36	2.44	37.80	18.29	1.0	0.6096	0.6096	100%	62.01	318.51	4536.00	4854.51	4842.26	no
146	7278097	25-Nov-16	1.22	gravel		83.82	82.30	12.19	37.80	24.38	1.0	N/A	0	100%	N/A	245.01	4536.00	4781.01	4781.01	no
147	7278103	02-Jul-16	4.57	gravel		98.15	89.92	4.88	37.80	30.48	1.0	27.432	18.89	69%	1.38	514.52	4536.00	5050.52	4670.91	no
148	7278104	01-Jul-16	3.66	sand	gravel & boulders	57.91	55.78	3.05	37.80	18.29	1.0	N/A	0	100%	N/A	306.26	4536.00	4842.26	4842.26	no
149	7278240	27-Sep-16	2.44	sand	stones	109.73		6.10	37.80	79.25	1.0	9.144	9.144	100%	4.13	1470.06	4536.00	6006.06	5822.30	yes
150	7278264	12-Dec-16	4.27	sand	clay	30.48	17.07	2.44	18.90	18.29	1.0	0.6096	0.6096	100%	31.00	318.51	2268.00	2586.51	2574.26	no
151	7278267	28-Jun-16	8.84	sand	clay & boulders	85.34		7.62	18.90	48.77	1.1	51.82	24.38	47%	0.36	826.91	2268.00	3094.91	2604.97	yes
152	7290391	13-May-17	2.13	gravel		67.06	64.01	0.00	18.90	45.72	1.0	10.98	10.98	100%	1.72	918.79	2268.00	3186.79	2966.14	no
153	7298405	05-Oct-17				91.40	68.60	9.10	20.00	36.60	1.0	2.2	2.2	100%	9.09	552.64	2400.00	2952.64	2908.43	no
154	7301943	13-Oct-17	1.52	sand		73.15	70.10	0.00	37.80	9.14	1.0	N/A	0	100%	N/A	183.76	4536.00	4719.76	4719.76	no
155	7301945	13-Aug-17	2.74	sand	gravel	97.54	83.52	4.57	18.90	38.10	1.0	8.48	8.48	100%	2.23	673.78	2268.00	2941.78	2771.36	no
156	7302660	19-Sep-17	3.66	and & boulder	clay	103.63	85.34	4.57	37.80	73.15	1.0	13.72	13.72	100%	2.76	1378.18	4536.00	5914.18	5638.47	no
157	7302664	01-Dec-17	0.91	sand		140.21		1.52	37.80	48.77	1.0	13.72	12.74	93%	2.76	949.42	4536.00	5485.42	5229.39	yes
158	7324491	07-Jun-18	1.83	sand	stones	77.72	77.42	1.52	37.80	18.29	1.0	N/A	0	100%	N/A	336.89	4536.00	4872.89	4872.89	no
159	7324586	08-Apr-18	1.52	sand		109.73		1.52	37.80	45.72	1.0	28.96	24.69	85%	1.31	888.16	4536.00	5424.16	4927.99	yes
160	7324597	11-Jun-18	3.96	sand	stones	115.82		3.96	18.90	42.67	1.0	11.28	11.28	100%	1.68	777.91	2268.00	3045.91	2819.23	yes
161	7345493	01-Oct-19	3.05	sand	boulders	36.58	33.53	7.62	18.90	30.48	1.0	1.22	1.22	100%	15.49	459.39	2268.00	2727.39	2702.88	no
162	7345494	01-Oct-19	1.22	sand	stones	48.77	42.67	7.62	18.90	30.48	1.0	14.63	13.77	94%	1.29	459.39	2268.00	2727.39	2450.67	no
163	7348859	17-Sep-19	4.27	sand	clay & stones	115.82		4.57	37.80	82.30	1.0	25.91	15.29	59%	1.46	1561.94	4536.00	6097.94	5790.67	yes
164	7348861	16-Sep-19	1.52	sand	stones	91.44		5.49	18.90	42.67	1.0	1.83	1.83	100%	10.33	747.28	2268.00	3015.28	2978.51	yes
165	7349090	23-Sep-19	1.22	sand	boulders	73.76	70.71	5.49	18.90	42.67	1.0	9.75	9.75	100%	1.94	747.28	2268.00	3015.28	2819.35	no
166	7349097	16-Aug-19	4.88	sand	clay & stones	115.82	surged	5.18	37.80	79.25	1.0	10.06	9.144	91%	3.76	1488.44	4536.00	6024.44	5840.68	no
167	7350107	18-Oct-19	0.61	gravel		36.58	36.27	4.27	18.90	21.34	1.0	N/A	0	100%	N/A	343.01	2268.00	2611.01	2611.01	no
168	7350117	10-Nov-19	2.13	sand	gravel	42.67	37.49	3.66	37.80	24.38	1.0	0.6096	0.6096	100%	62.01	416.52	4536.00	4952.52	4940.27	no
169	7378300	04-May-20	1.22	sand		109.73		6.10	37.80	79.25	1.0	24.384	18.08	74%	1.55	1470.06	4536.00	6006.06	5642.73	yes
170	7378301	07-May-20	5.18	sand	boulders & gravel	115.82		5.49	18.90	83.82	1.0	9.75	8.84	91%	1.94	1574.19	2268.00	3842.19	3664.54	yes
171	7379848	29-Jul-20	1.52	sand	clay&stones	79.25	78.64	2.44	18.90	22.86	1.0	N/A	0	100%	N/A	410.39	2268.00	2678.39	2678.39	no
172	7379869	06-Oct-20	3.66	sand	clay&stones	7.92	85.34	2.44	56.70	48.77	1.0	10.06	10.06	100%	5.64	931.04	6804.00	7735.04	7532.87	no
173	7420371	28-Apr-22	2.44	sand	gravel	54.86	51.82		18.90	51.82	1.0	12.65	11.43	90%	1.49	1041.29	2268.00	3309.29	3079.60	no

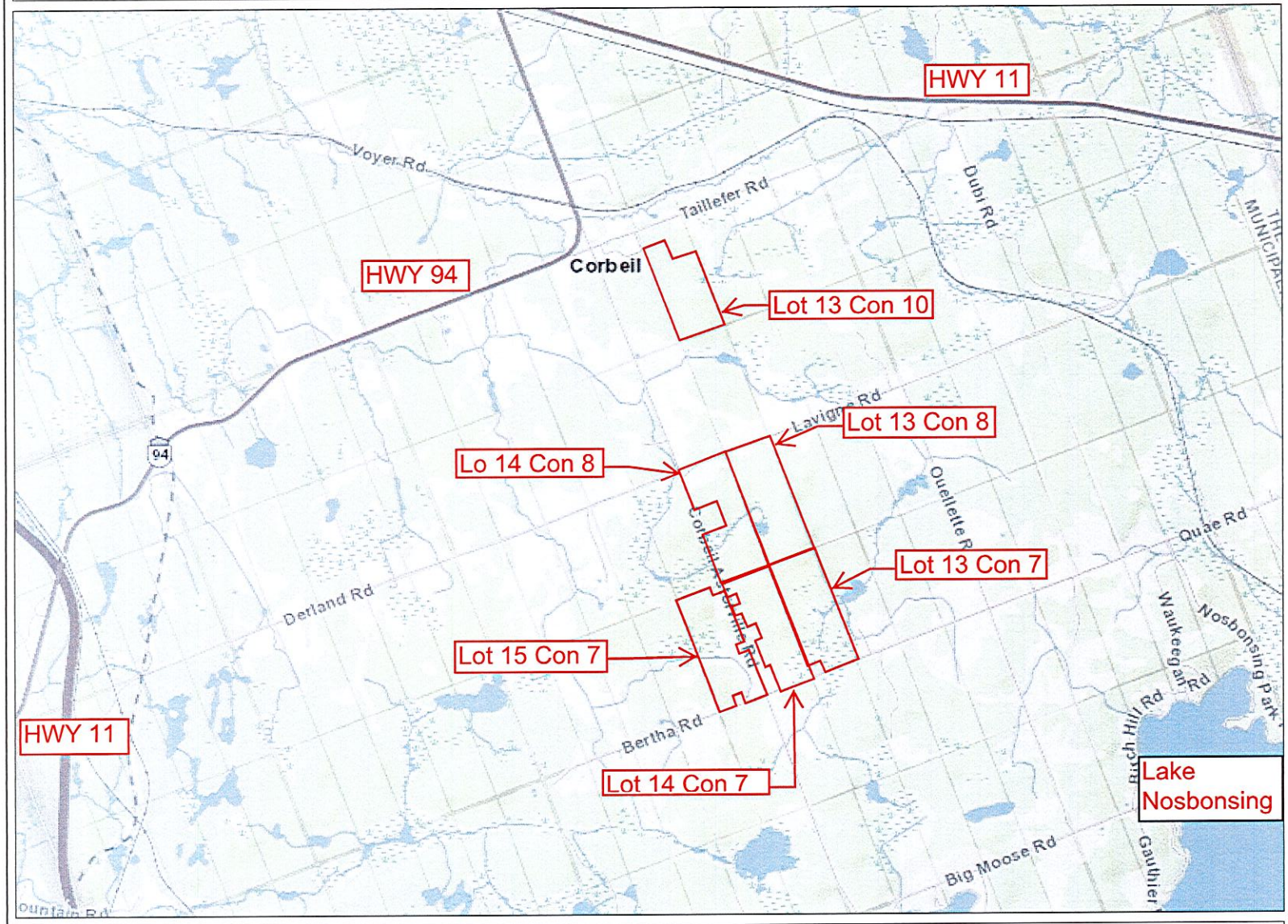
Max		10.67			164.59	115.21	12.83	756.00	182.88		120.70	93.27	100.00%	124.02	3675.16	90720.00	90867.01	45639.73	
Min		0.30			7.92	7.62	0.00	5.67	7.62		0.00	0.00	0.00%	0.06	91.88	680.40	1334.69	300.61	
Mean		3.20			77.22	54.76	4.60	51.39	49.60		23.32	12.51	92.71%	9.30	906.04	6167.29	7032.45	4851.26	
Stan. Dev.		1.96			32.04	25.35	2.55	90.09	29.91		27.46	15.04	16.20%	17.40	600.90	10811.33	10668.95	5482.60	

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 1 Site Location Plan



Legend

Building as Symbol
Building to Scale
Airport
Heliport \ Hospital Heliport
Seaplane Base
Ferry Route
Trail
Bruce Trail
Greenbelt Route
Rideau Trail
Trans Canada Trail
Voyageur Trail
Waterfront Trail
Railway \ Train Station
Railway with Bridge
Railway with Tunnel
Road (Major — Minor)
Winter Road
Road with Bridge
Road with Tunnel
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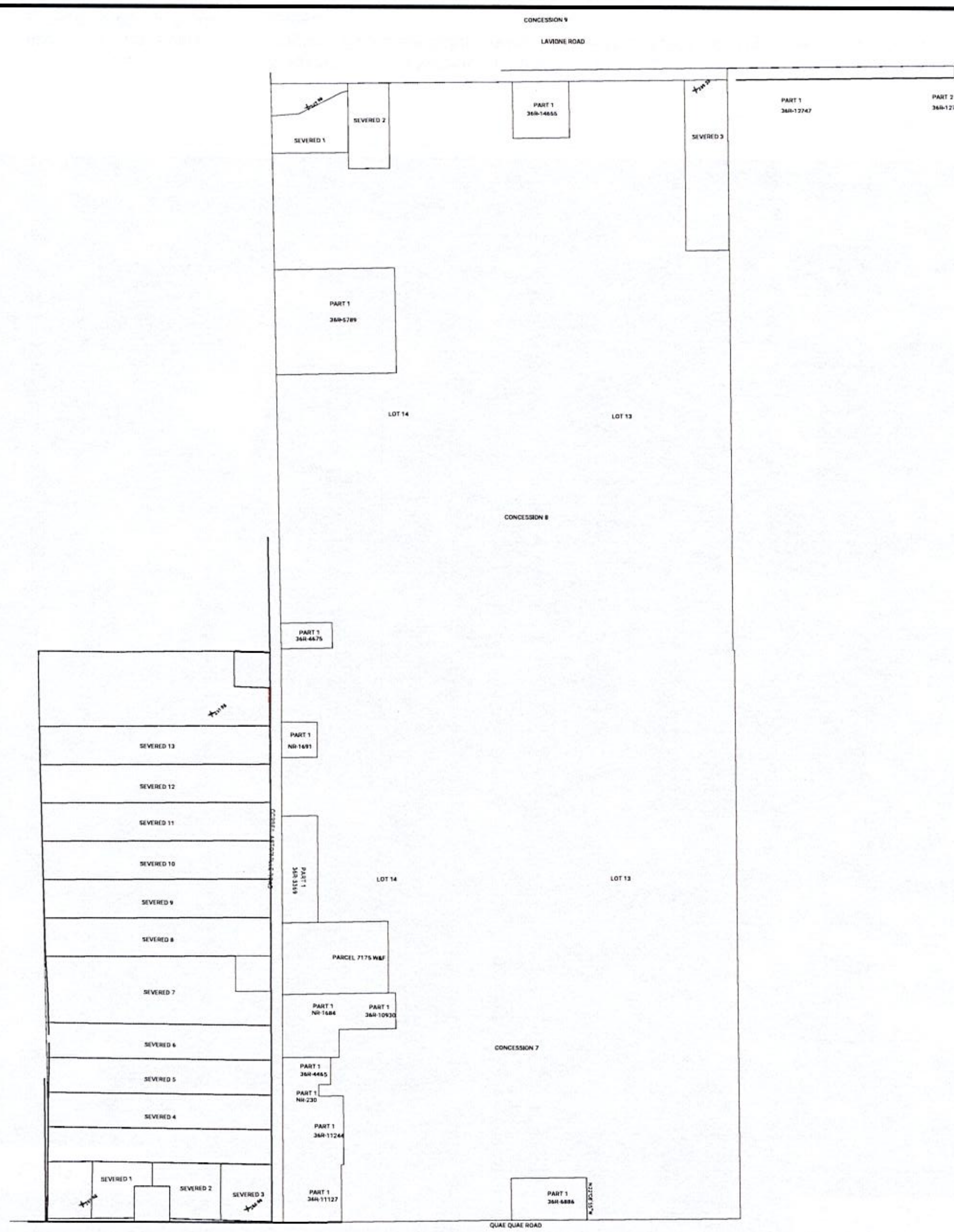
Secondary Highway
Tertiary Highway
District, County, Regional or Municipal Road
Toll Highway
One Way Road
Road with Permanent Blocked Passage
Road with Address Ranges
Hydro Line, Communication Line or Unknown Transmission Line
Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
Spot Height
Index Contour
Contour
Wooded Area
Wetland
Waterbody
Waterbody Elevation
Watercourse
Falls
Rapids
Rapids \ Falls
Rapids
Rocks
Lock Gate
Dam \ Hydro Wall
Dam \ Hydro Wall
Provincial \ State Boundary
International Boundary
Upper Tier \ District Municipal Boundary
Lower Tier \ Single Tier Municipal Boundary
Lot Line
Indian Reserve
Provincial Park
National Park
Conservation Reserve
Military Lands

0 2.5 km

Projection: Web Mercator



LEGEND
ORIGINAL GROUND
FINISHED GRADE
BOTTOM OF SODDED SWALE/BACK OF CURB
MIN. FINISHED GRADE AT HOUSE LOCATION
PROP. EXT. WATERMAIN - GATE VALVE
PROP. EXT. WATERMAIN - FIRE HYDRANT
PROP. EXT. STORM MANHOLE
PROP. EXT. SANITARY MANHOLE
PROP. EXT. STORM CATCH BASIN
PROP. CLEANOUT/WATER SHUTOFF VALVE
PROP. RETAINING WALL
PROP. EXT. TOP OF SWALE
PROP. EXT. TOP OF BANK
PROP. EXT. BOTTOM OF BANK
PROP. EXT. SANITARY SEWER PIPE
PROP. EXT. STORM SEWER PIPE
PROP. EXT. STORM SEWER CULVERT
PROP. EXT. WATERMAIN
PROP. EXT. OVERHEAD HYDRO LINES
PROP. EXT. EDGE OF ASPHALT & FEATURES
PROP. EXT. CHAINLINK FENCE
PROP. CUT/FILL TO EXISTING GROUND

KEY PLAN

PROJECT AREA

KEY PLAN
NTS

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
24/01/29	0	LOTSTRUCTURE	AV	

CLIENT:

CONSULTANT:

TULLOCH

PROJECT TITLE:

PROPOSED LOT STRUCTURE

DRAWING TITLE:

LOT LAYOUT

DRAWN	DESIGNED	CHECKED	APPROVED
AV			

SCALE	DATE
1:4000	JAN 29, 2024

PROJECT No.	REVISION	DRAWING
7708	0	C01

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 3 Con 7 Lots Satellite Imagery

Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail
- Bruce Trail
- Greenbelt Route
- Rideau Trail
- Trans Canada Trail
- Voyageur Trail
- Waterfront Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major — Minor)
- Winter Road
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- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
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- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.5 km

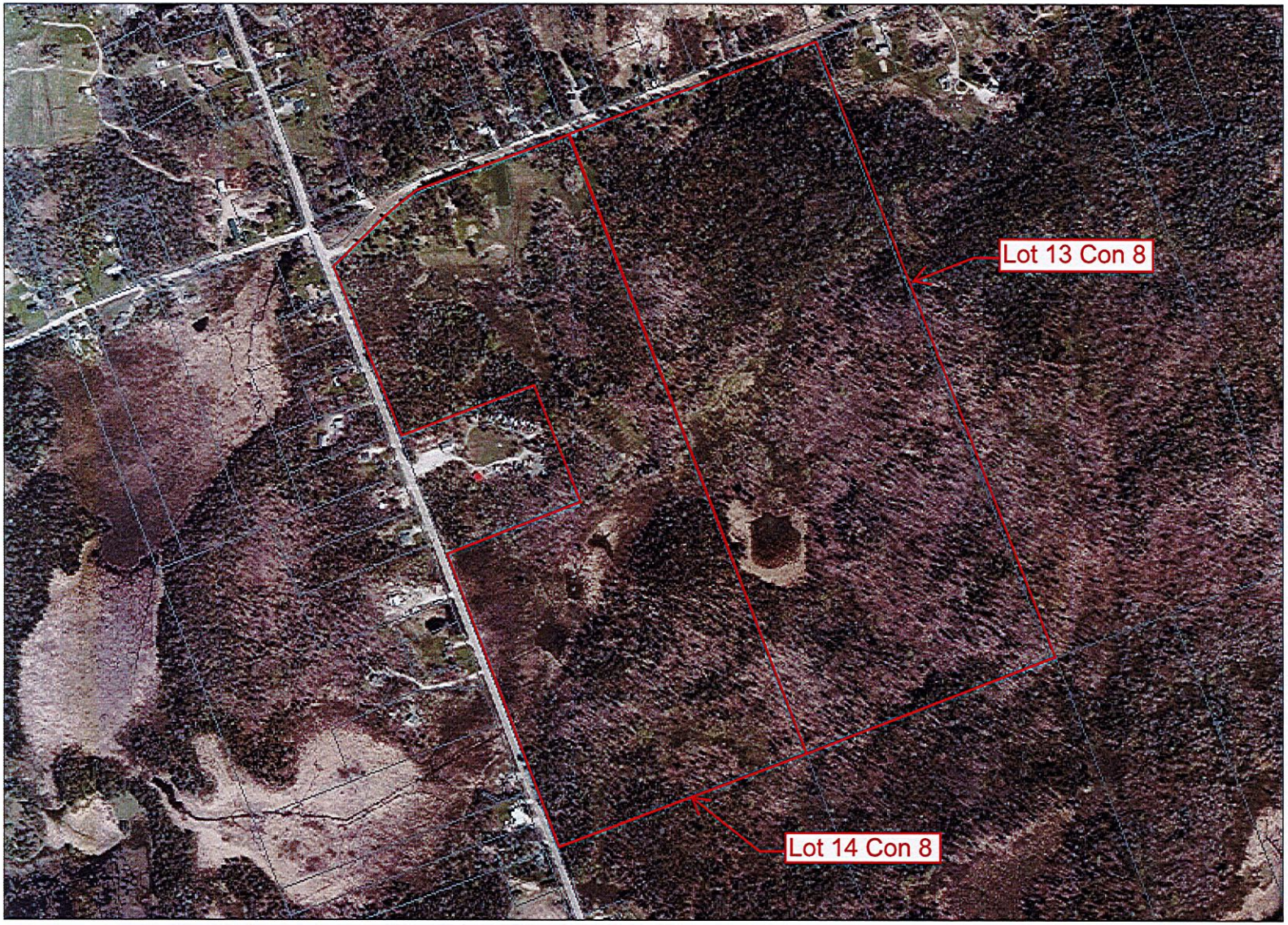
Projection: Web Mercator

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 4 - Con 8 Lots Satellite Imagery



Legend

- Building as Symbol
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- Dam \ Hydro Wall
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- International Boundary
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- Indian Reserve
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- National Park
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0 0.5 km

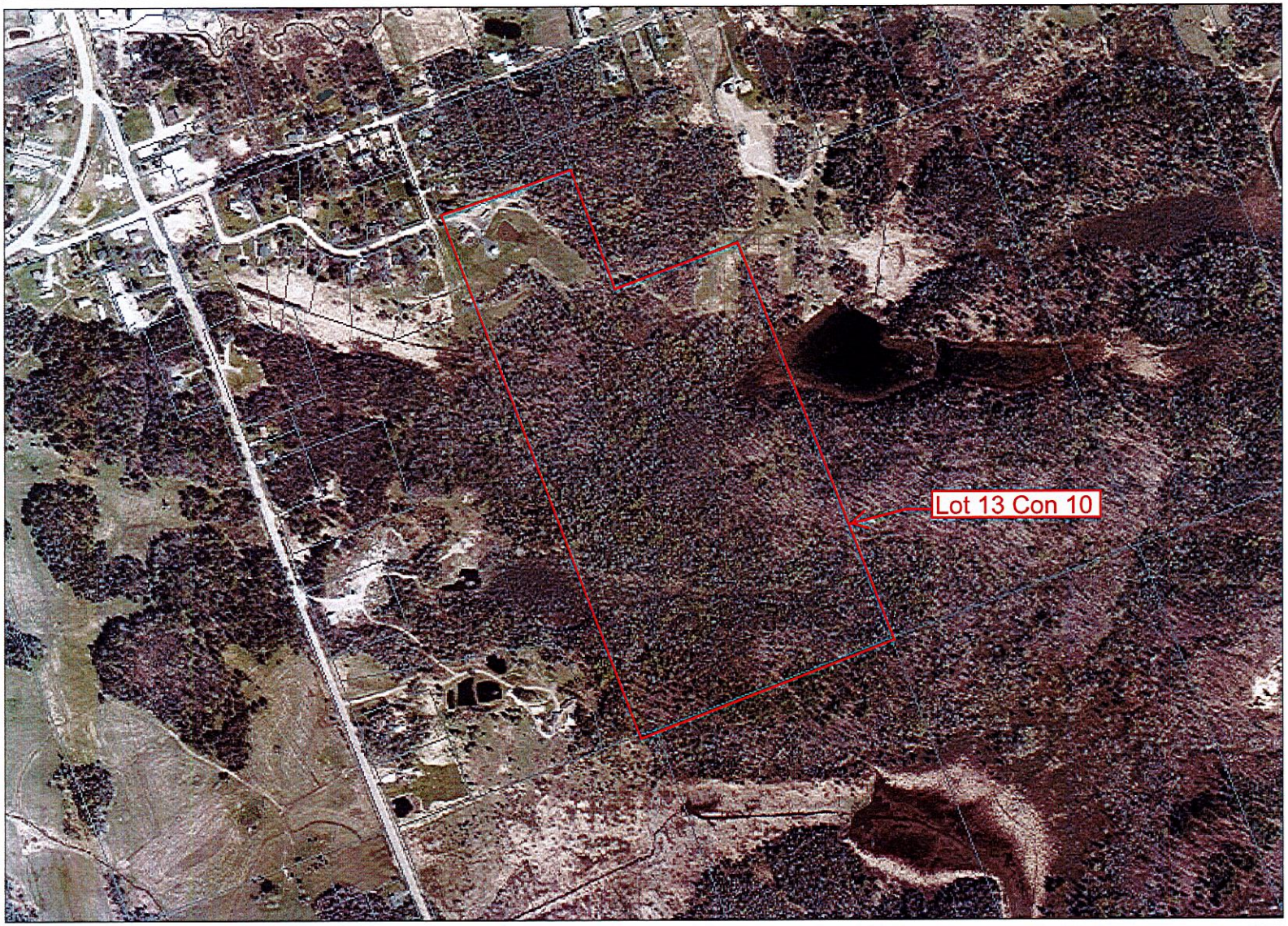
Projection: Web Mercator

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 5 Con 10 Lot Satellite Imagery



Legend

- Building as Symbol
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- Watercourse
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- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
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- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.5 km

Projection: Web Mercator

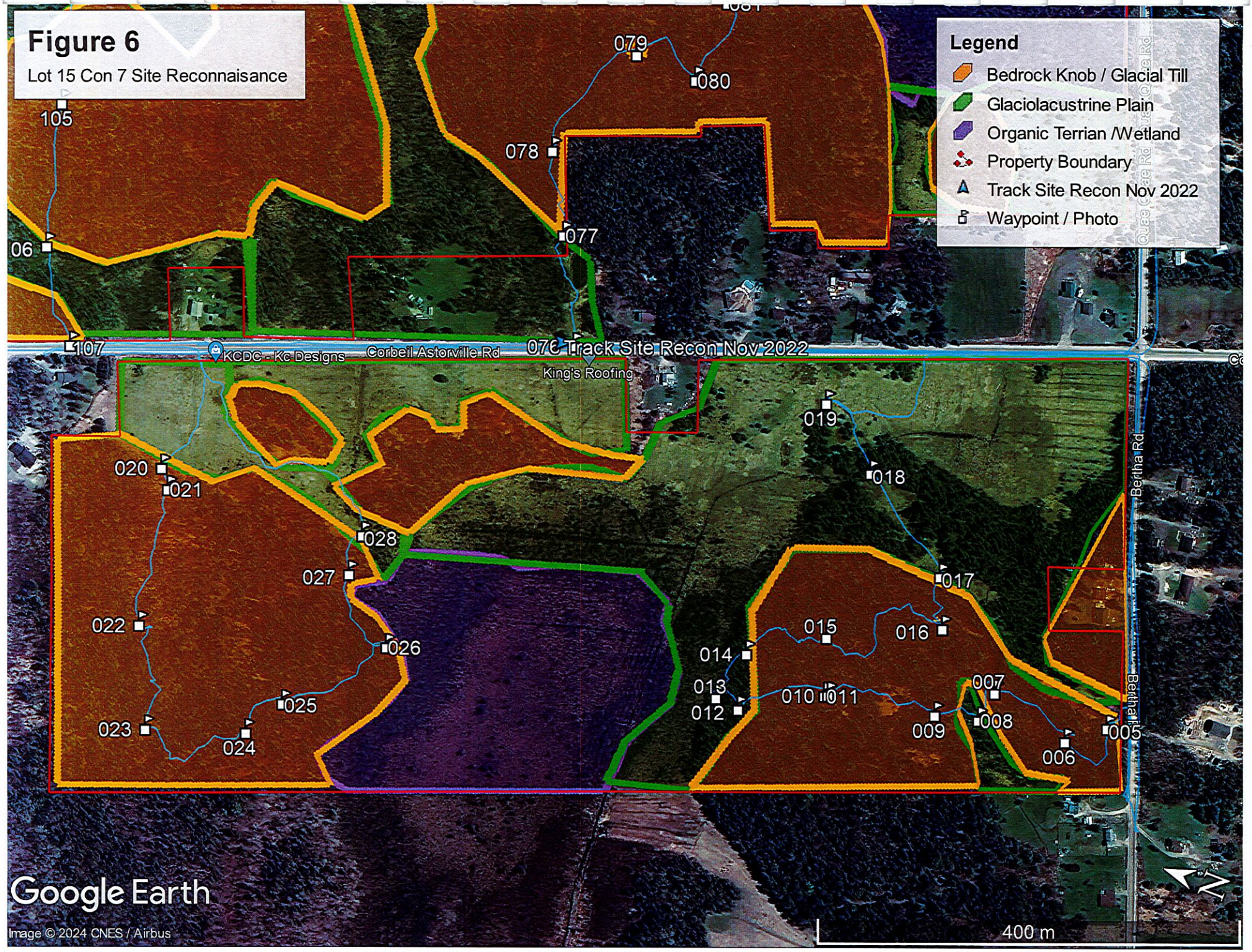
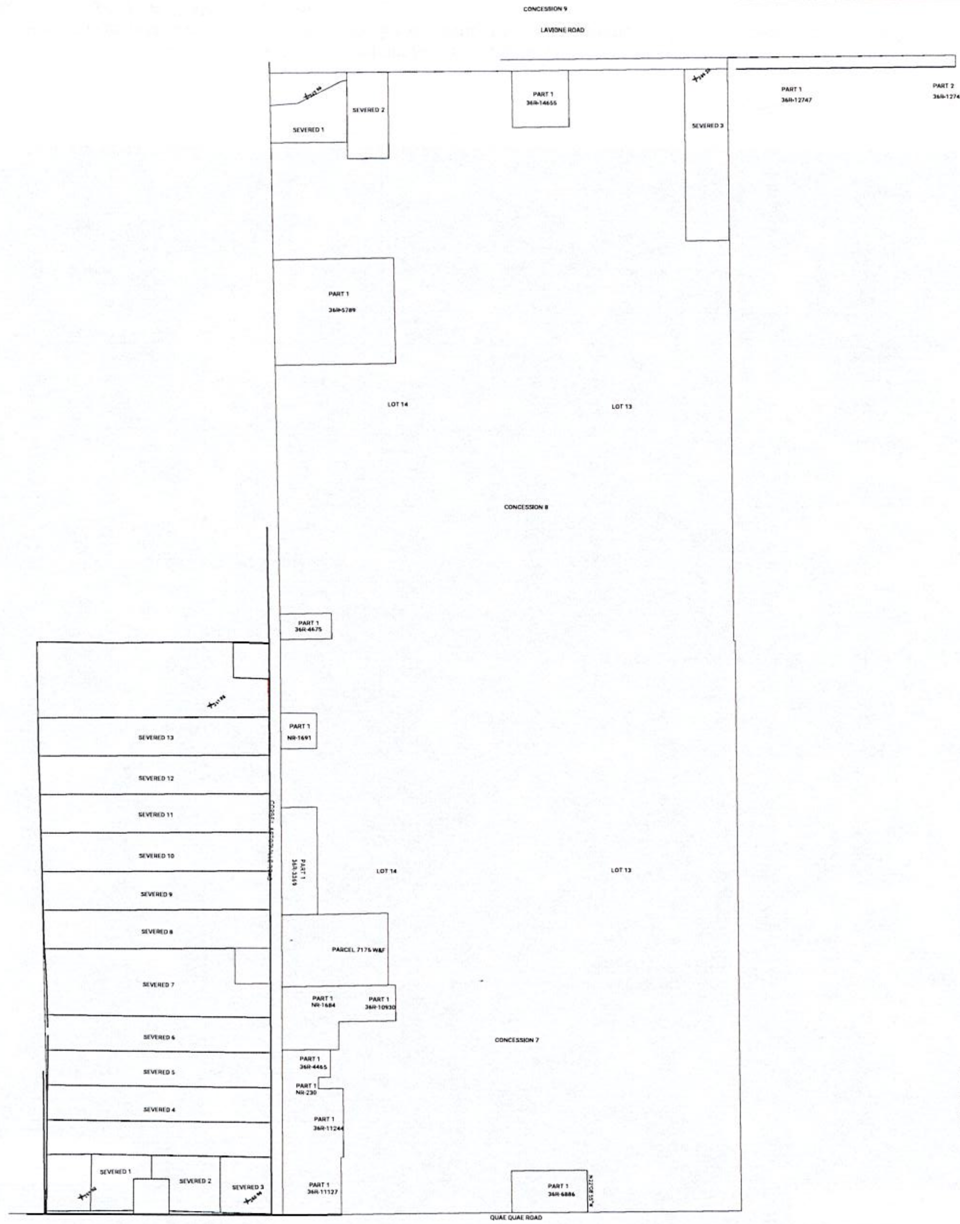


Figure 6
Lot 15 Con 7 Site Reconnaisance
Legend
Bedrock Knob / Glacial Till
Glaciolacustrine Plain
Organic Terrian /Wetland
Property Boundary
Track Site Recon Nov 2022
Waypoint / Photo
105
06
107
079
080
078
077
076 Track Site Recon Nov 2022
KCDC - Kc Designs
Corbeil Astorville Rd
King's Roofing
019
018
020
021
028
027
017
022
026
015
016
014
013
012
010
011
007
008
009
005
006
025
023
024
Bertha Rd
Google Earth
Image © 2024 CNES / Airbus
400 m
N



LEGEND

Symbol	Description
	ORIGINAL GROUND
	FINISHED GRADE
	BOTTOM OF SODDED SWALE/BACK OF CURB
	MIN. FINISHED GRADE AT HOUSE LOCATION
GV / EXT. GV	PROP. EXT. WATERMAIN - GATE VALVE
FH / EXT. FH	PROP. EXT. WATERMAIN - FIRE HYDRANT
MH 1 / EXT. STM MH	PROP. EXT. STORM MANHOLE
MH 100 / EXT. SAN MH	PROP. EXT. SANITARY MANHOLE
CB 1 T/G=217.00 / EXT. STM CB	PROP. EXT. STORM CATCH BASIN
CO / WSO	PROP. CLEANOUT/WATER SHUTOFF VALVE
	PROP. RETAINING WALL
	PROP. EXT. TOP OF SWALE
	PROP. EXT. TOP OF BANK
	PROP. EXT. BOTTOM OF BANK
	PROP. EXT. SANITARY SEWER PIPE
	PROP. EXT. STORM SEWER PIPE
	PROP. EXT. STORM SEWER CULVERT
	PROP. EXT. WATERMAIN
	PROP. EXT. OVERHEAD HYDRO LINES
	PROP. EXT. EDGE OF ASPHALT & FEATURES
	PROP. EXT. CHAINLINK FENCE
	PROP. CUT/FILL TO EXISTING GROUND

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Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

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Figure 3 Con 7 Lots Satellite Imagery

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0 0.5 km

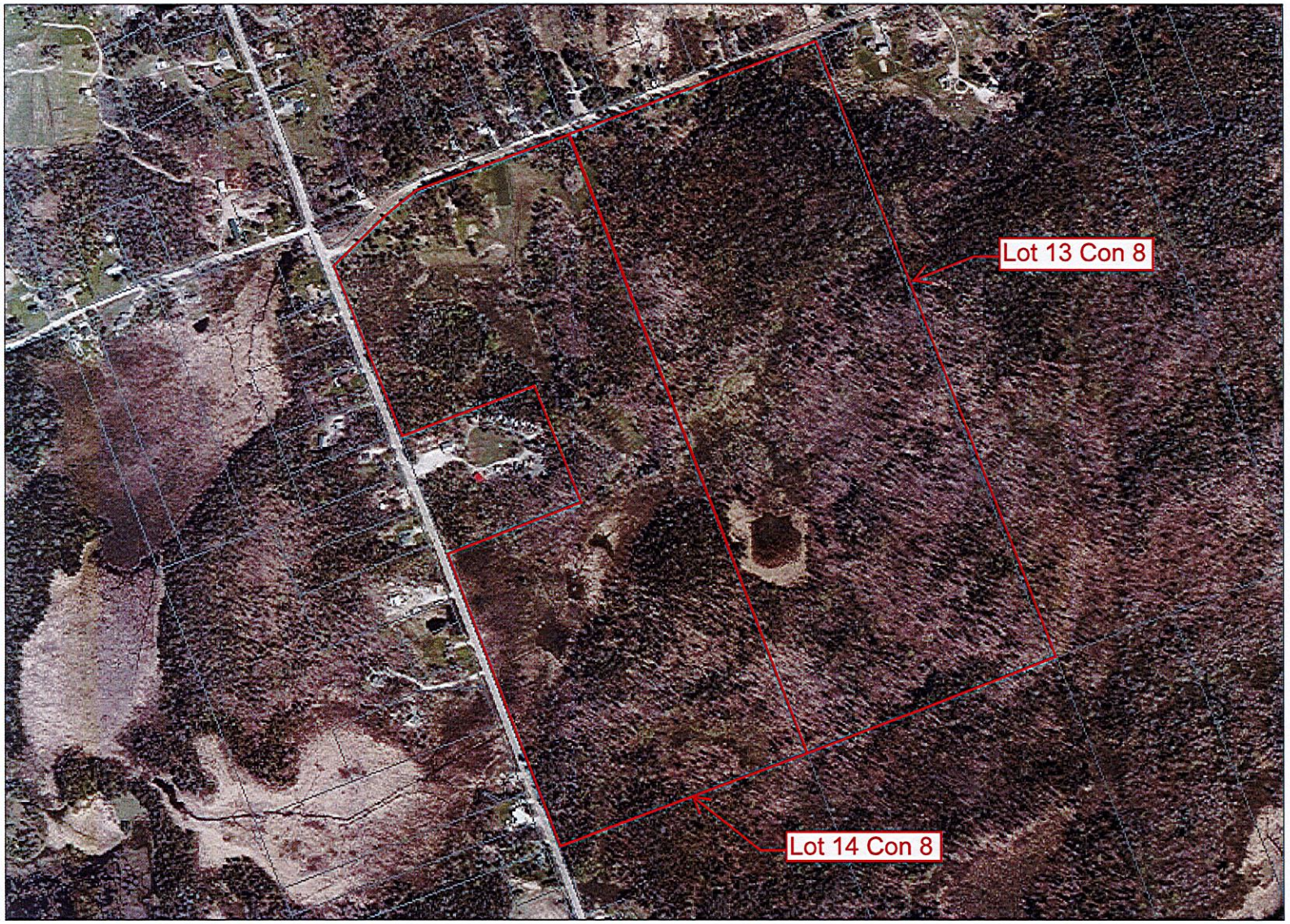
Projection: Web Mercator

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 4 - Con 8 Lots Satellite Imagery



Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail
- Bruce Trail
- Greenbelt Route
- Rideau Trail
- Trans Canada Trail
- Voyageur Trail
- Waterfront Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major ⟷ Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.5 km

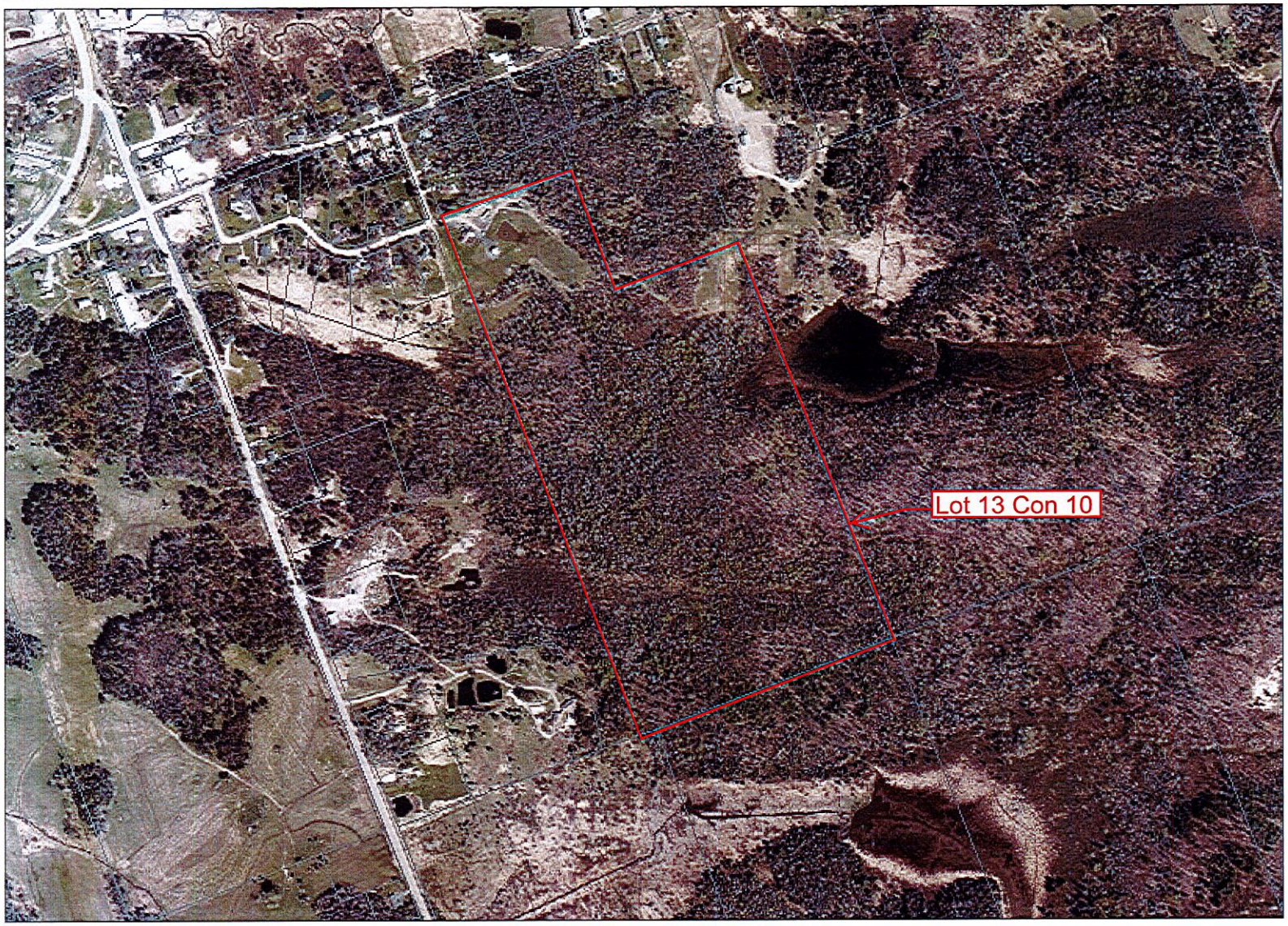
Projection: Web Mercator

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 5 Con 10 Lot Satellite Imagery



Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail
- Bruce Trail
- Greenbelt Route
- Rideau Trail
- Trans Canada Trail
- Voyageur Trail
- Waterfront Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
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- Falls
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- Lock Gate
- Dam \ Hydro Wall
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- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.5 km

Projection: Web Mercator

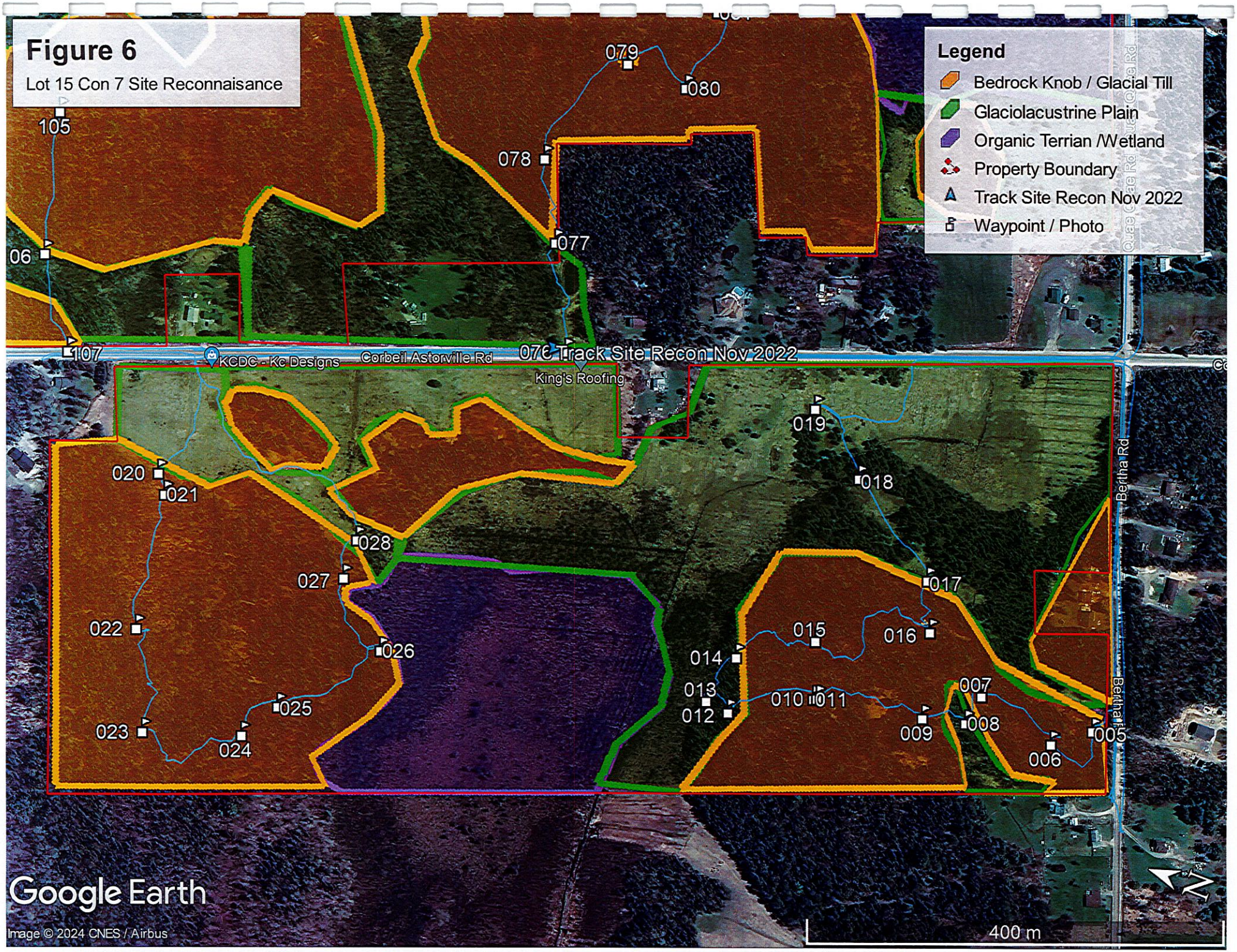
Figure 6
Lot 15 Con 7 Site Reconnaisance
Legend
Bedrock Knob / Glacial Till
Glaciolacustrine Plain
Organic Terrian /Wetland
Property Boundary
Track Site Recon Nov 2022
Waypoint / Photo
105
079
080
078
077
06
107
KCDC - Kc Designs
Corbeil Astorville Rd
076 Track Site Recon Nov 2022
King's Roofing
019
018
020
021
028
027
017
022
015
016
026
014
013
012
010
011
007
025
023
024
009
008
005
006
Bertha Rd
Google Earth
Image © 2024 CNES / Airbus
400 m
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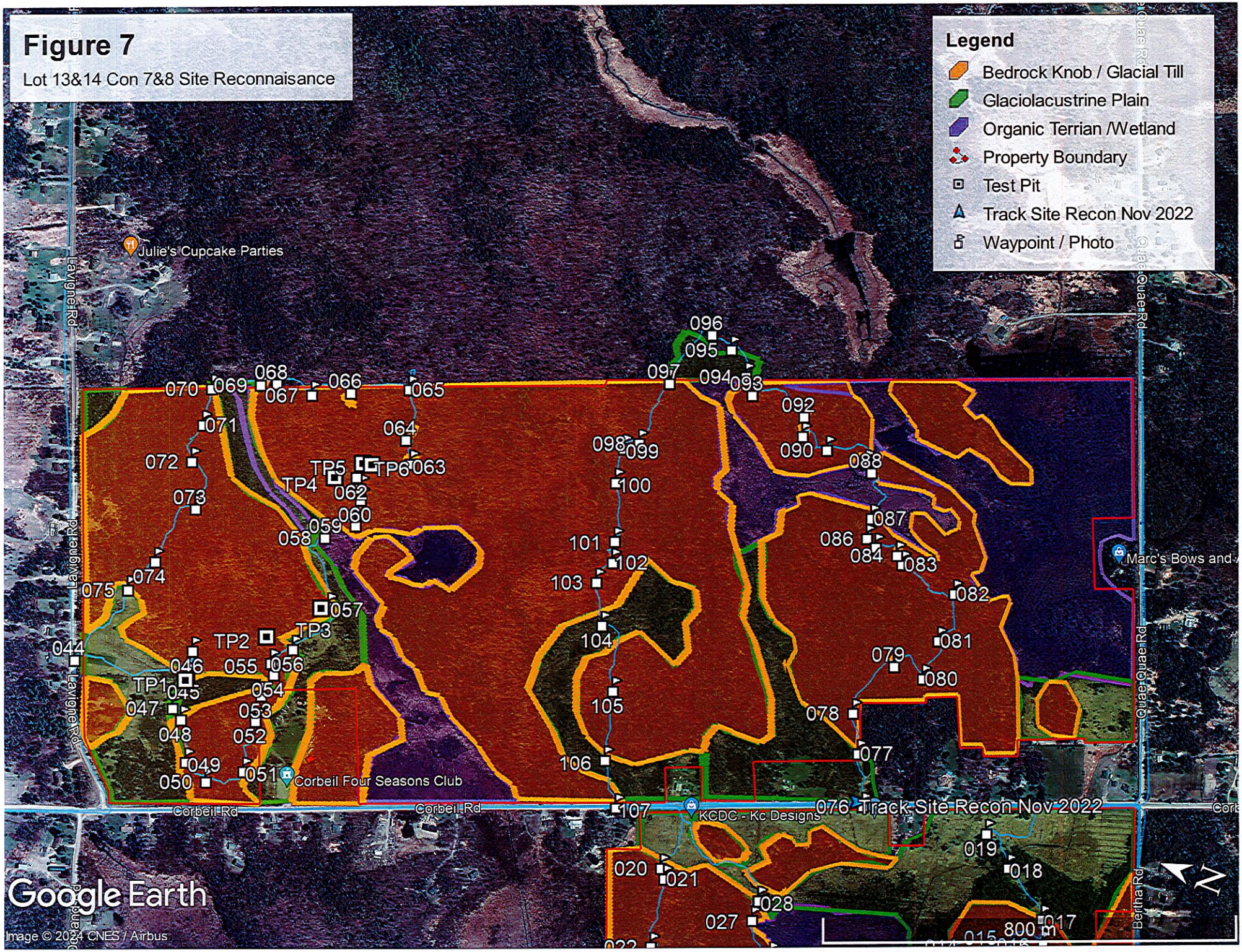
Figure 7
Lot 13&14 Con 7&8 Site Reconnaisance
Legend
Bedrock Knob / Glacial Till
Glaciolacustrine Plain
Organic Terrian /Wetland
Property Boundary
Test Pit
Track Site Recon Nov 2022
Waypoint / Photo
Julie's Cupcake Parties
Lavigne Rd
Quae Quae Rd
Corbeil Rd
Corbeil Four Seasons Club
KCDC - Kc Designs
Track Site Recon Nov 2022
Marc's Bows and
Bertha Rd
TP1
TP2
TP3
TP4
TP5
TP6
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Google Earth
Image © 2024 CNES / Airbus
800 m
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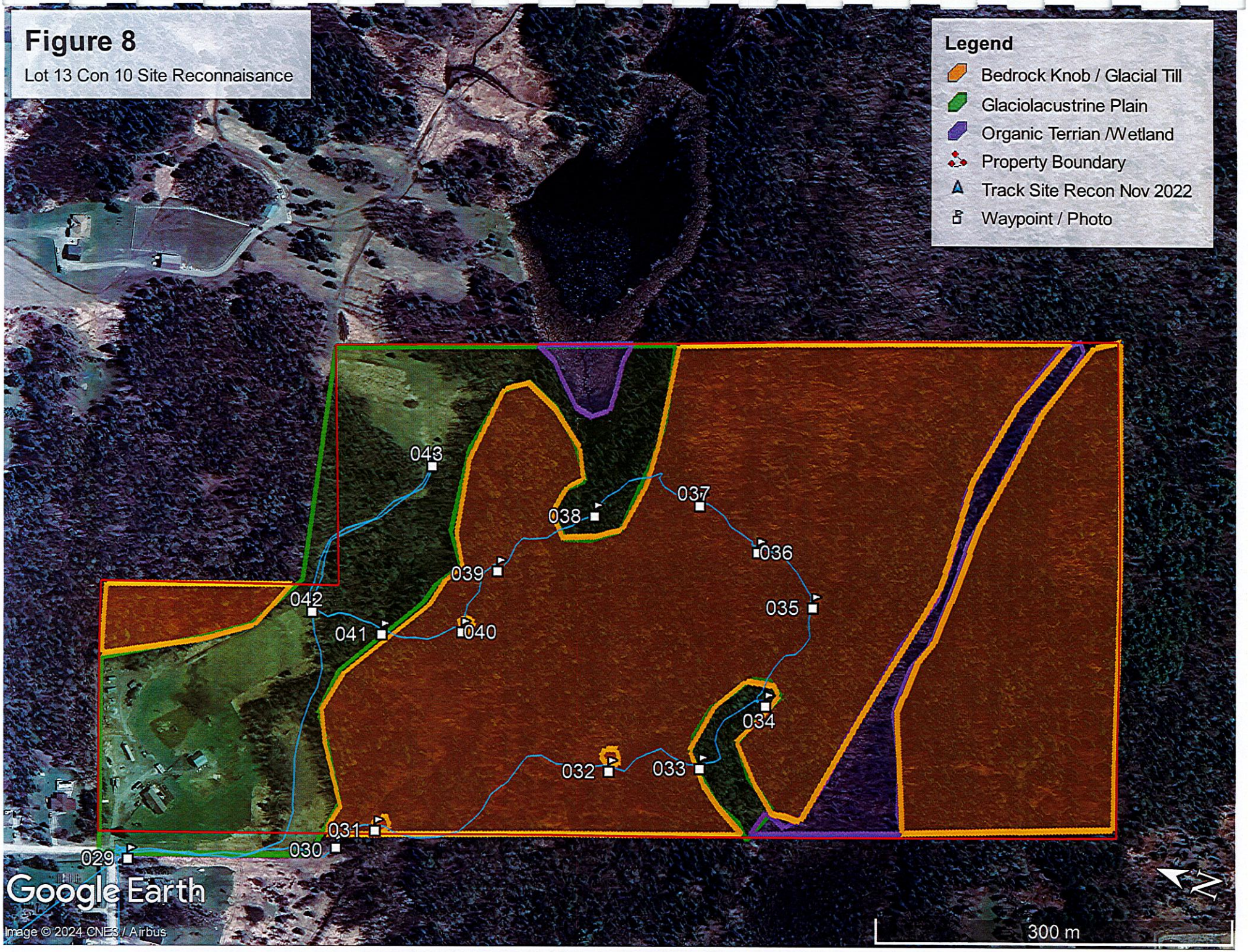
Figure 8

Lot 13 Con 10 Site Reconnaisance



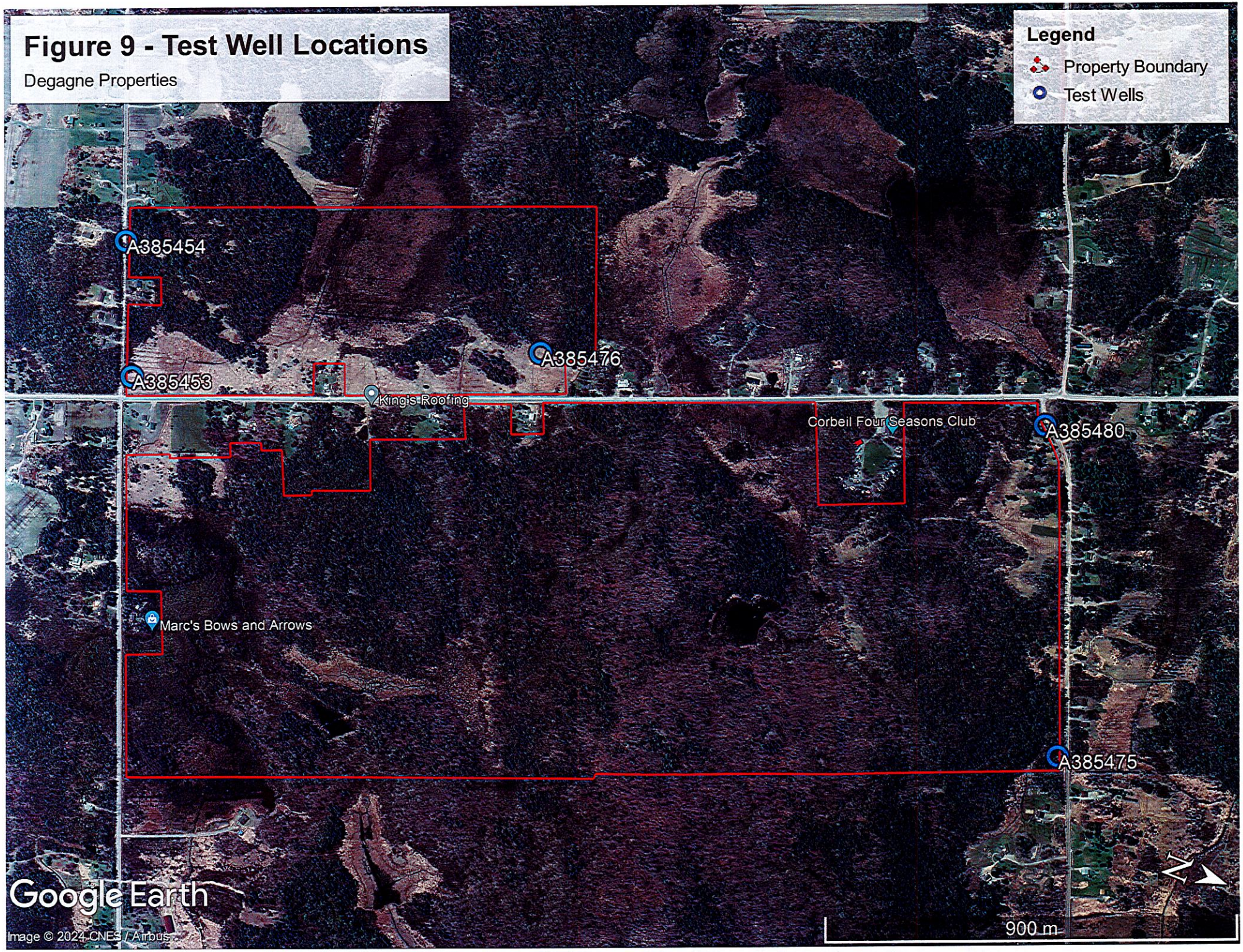


Figure 9 - Test Well Locations
Degagne Properties
Legend
Property Boundary
Test Wells
A385454
A385476
A385453
King's Roofing
Corbeil Four Seasons Club
A385480
Marc's Bows and Arrows
A385475
Google Earth
Image © 2024 CNES / Airbus
900 m
N

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Planners | Surveyors | Biologists | Engineers

FIGURE 10

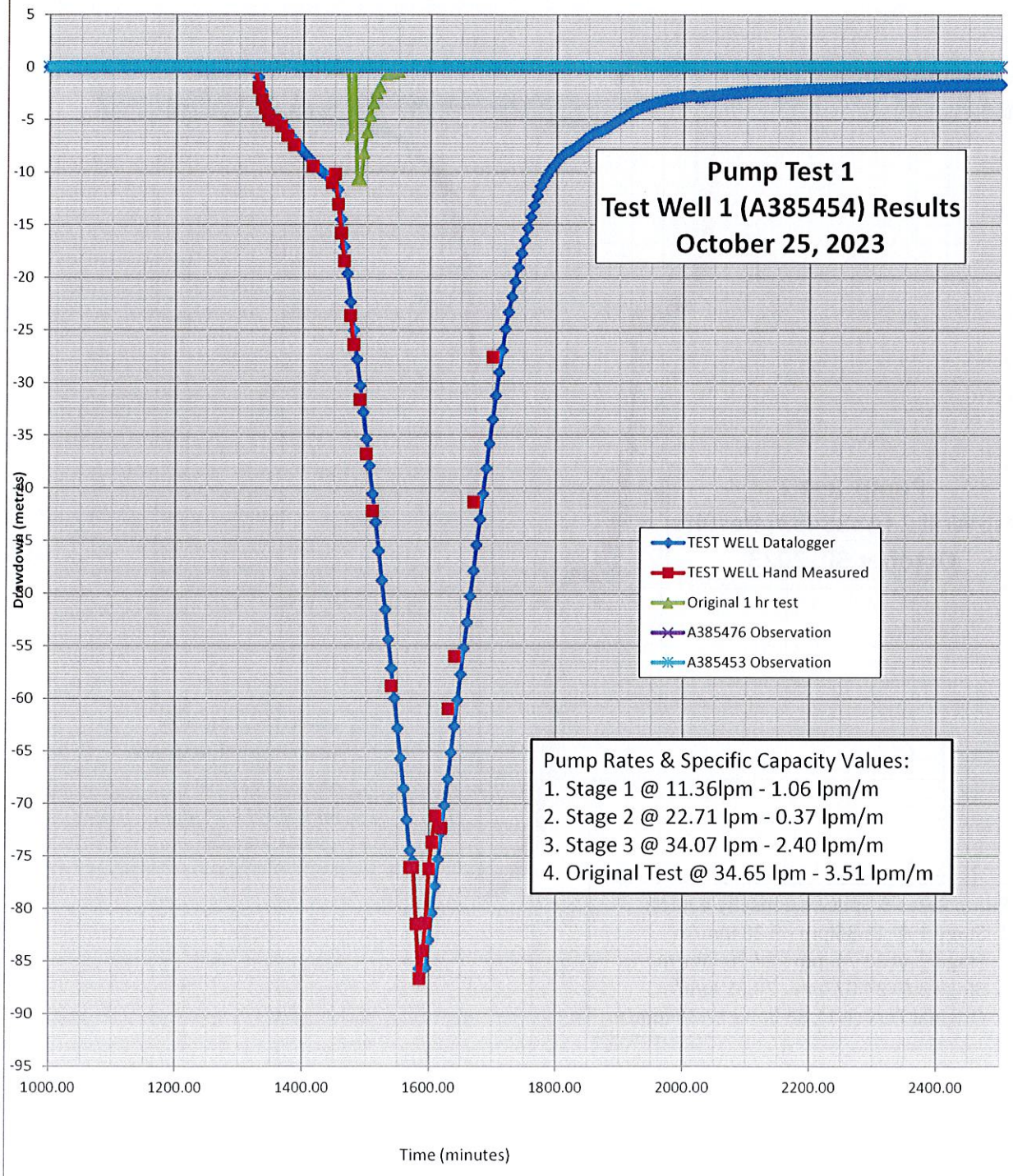

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FIGURE 11

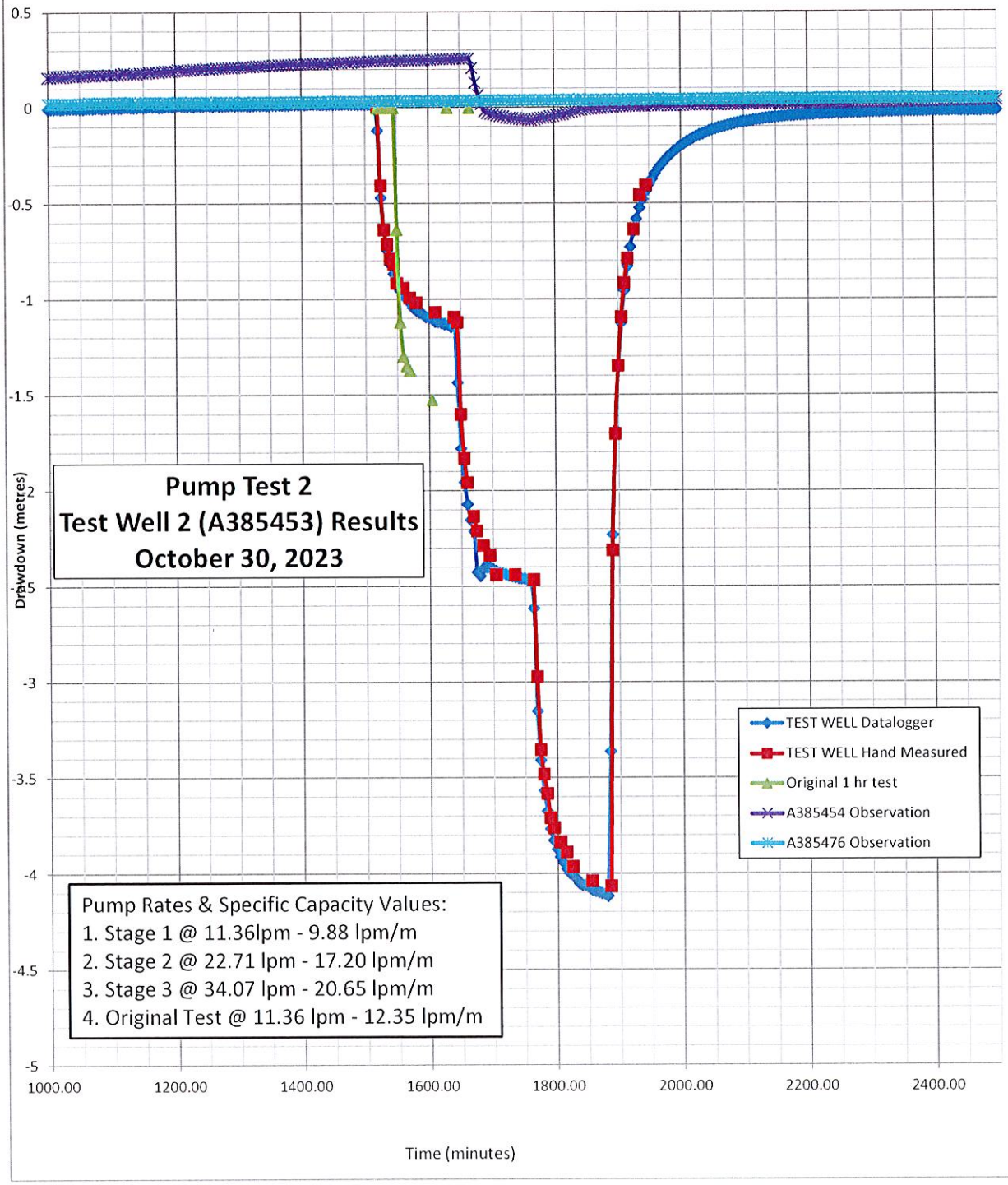

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FIGURE 12

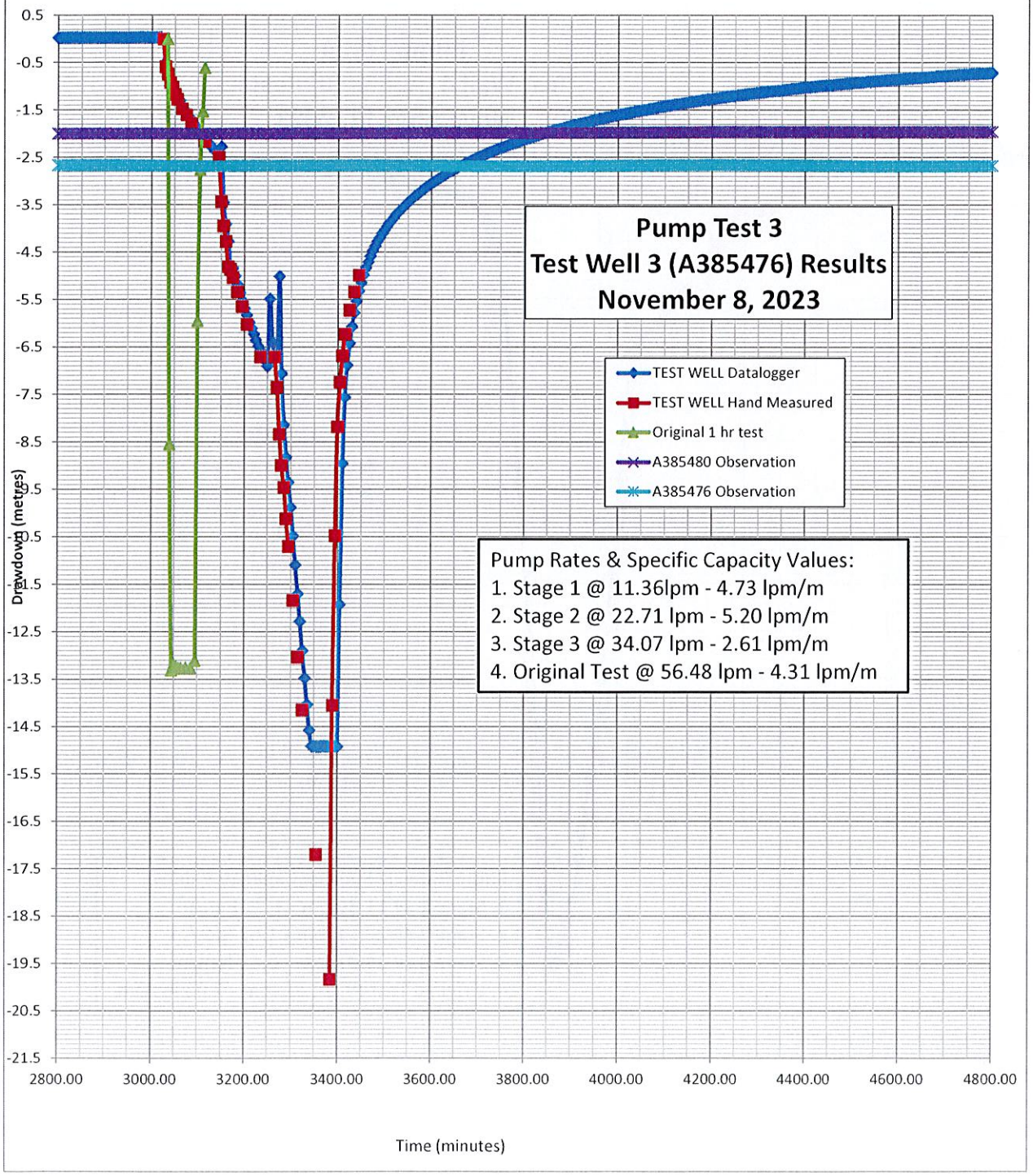

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FIGURE 13

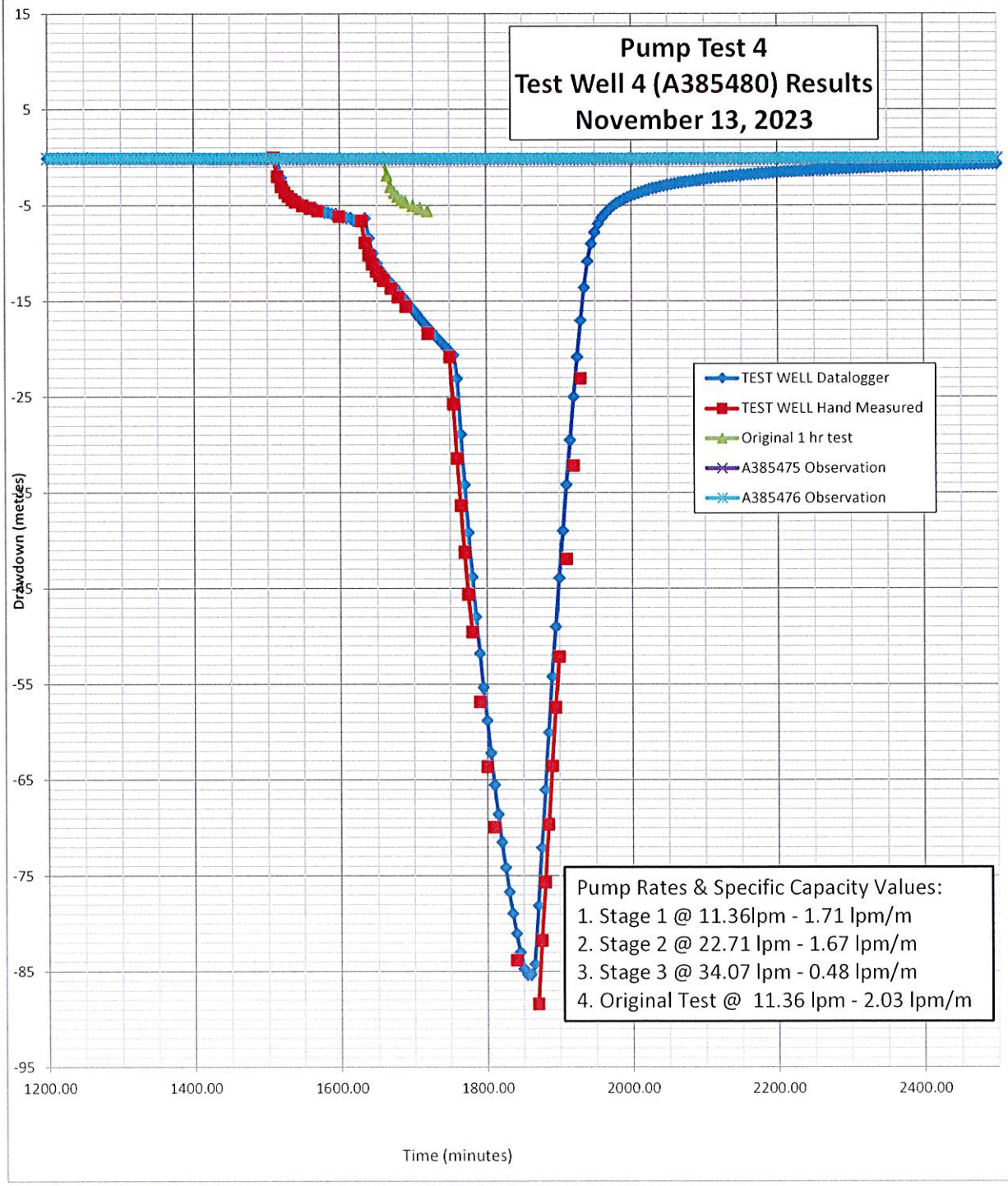

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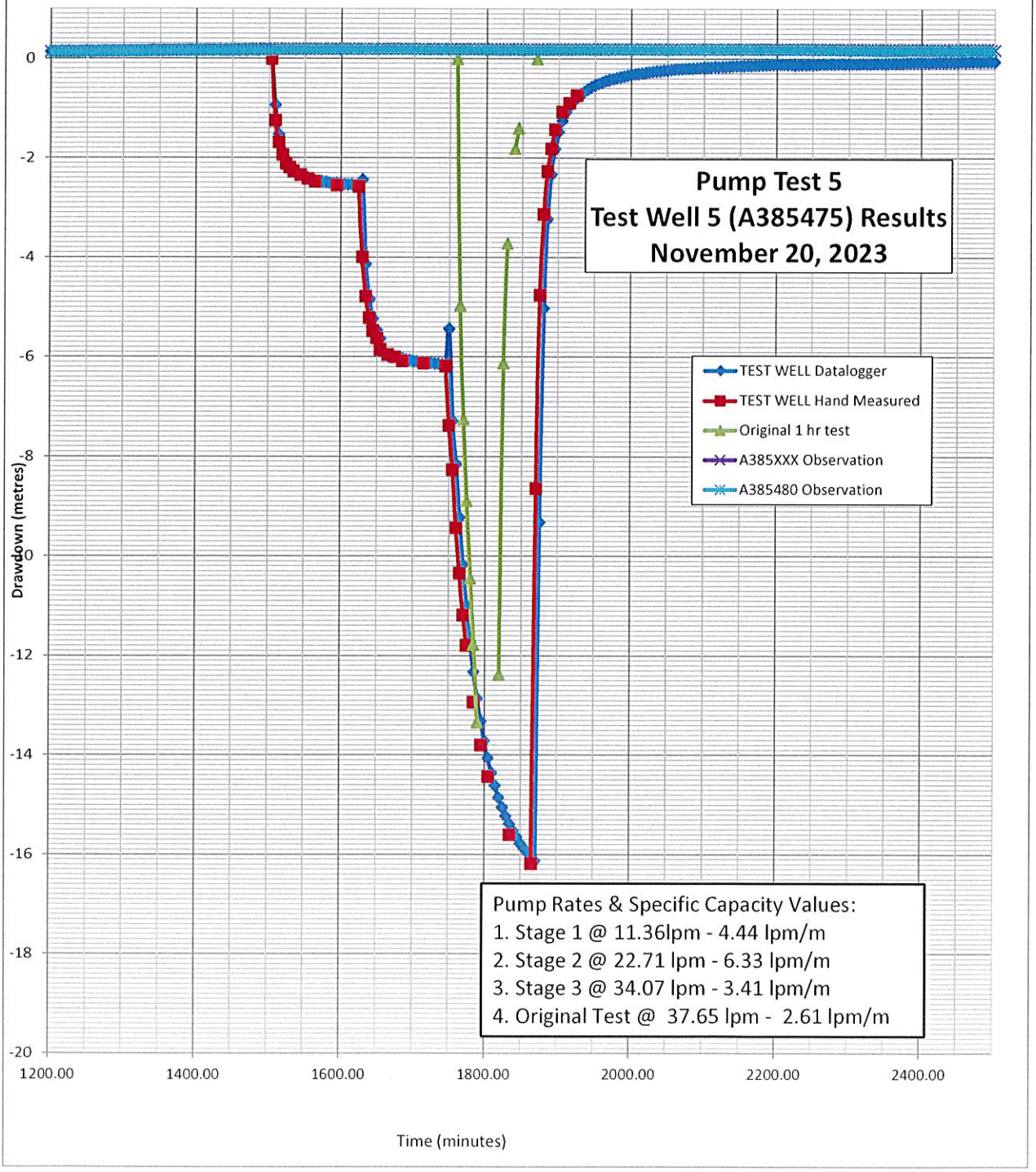
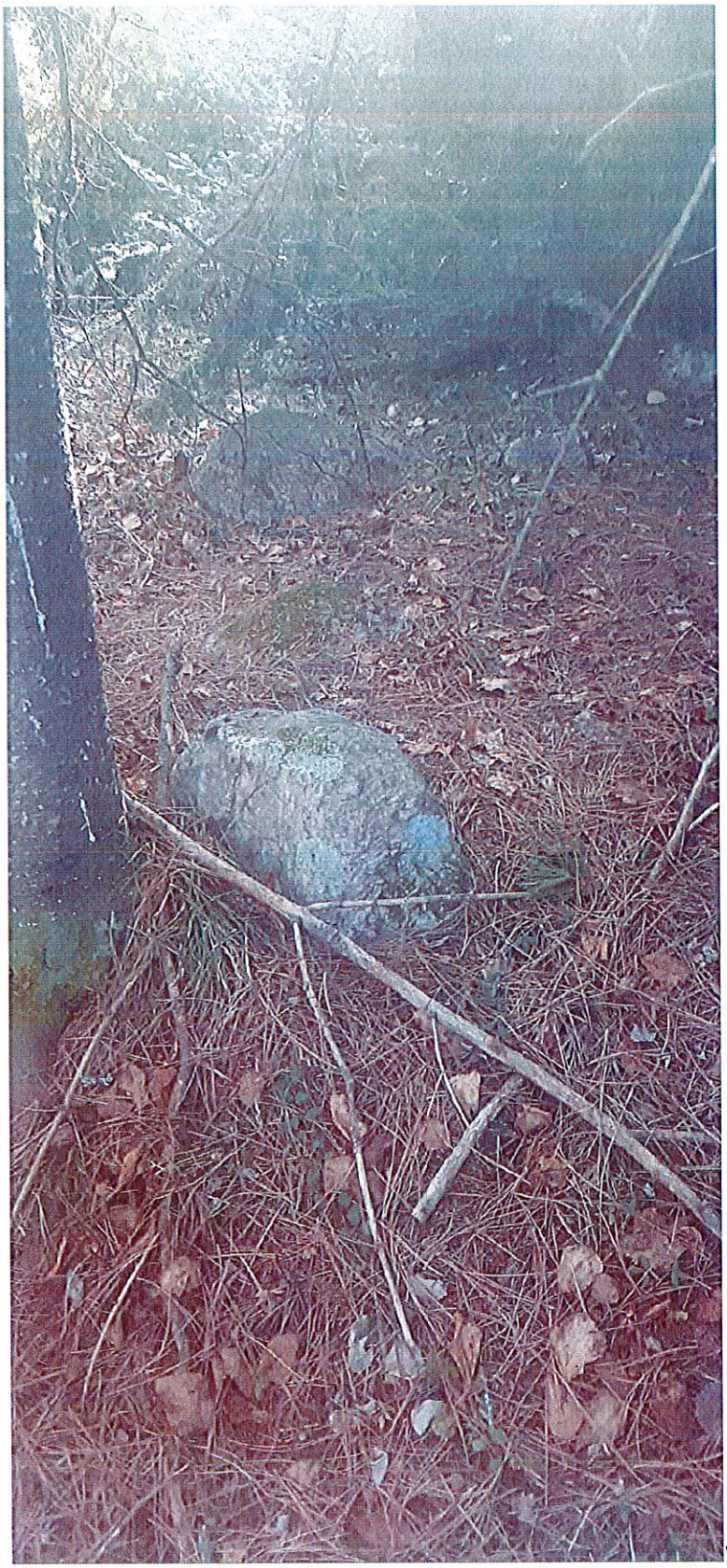
FIGURE 14



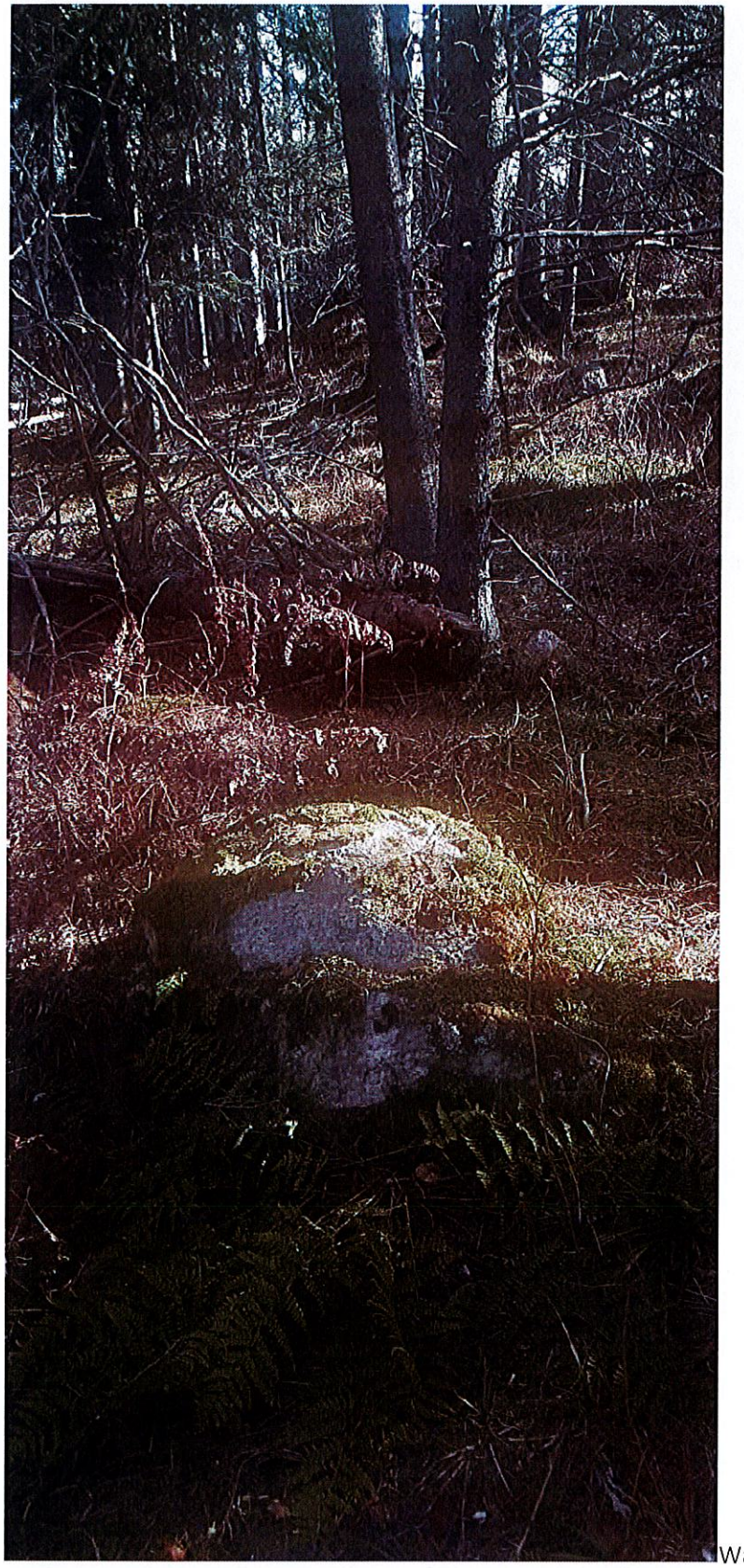
APPENDIX A1:

SITE RECONNAISANCE PHOTOS - LOT 15, CON 7

Waypoint 005 – Boulder at Surface



Waypoint 006 – Boulder at Surface



Waypoint 007 – Boulder at Surface

Waypoint 008 – Upturned tree root with silt and clay

Waypoint 009 – Boulder at Surface

Waypoint 010 – Boulder at Surface

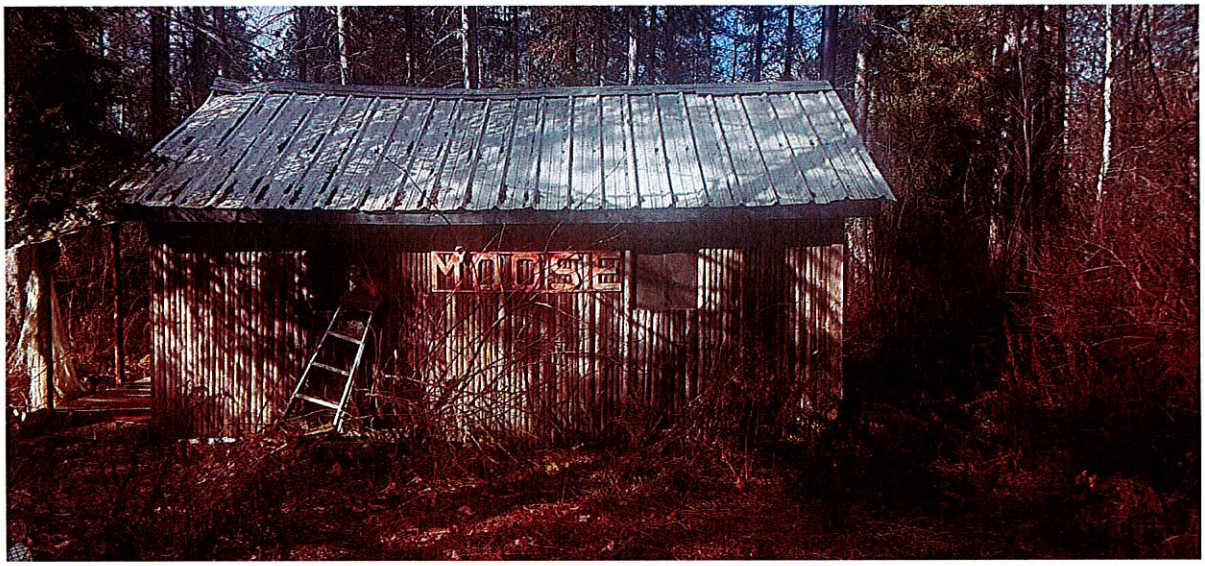
Waypoint 011 – Glacial Till

Waypoint 012 – Silt and Clay

Waypoint 013 – Wetland Area

Waypoint 014 – Glacial Till

Waypoint 015 – Glacial Till



Waypoint 016 – Moose Camp

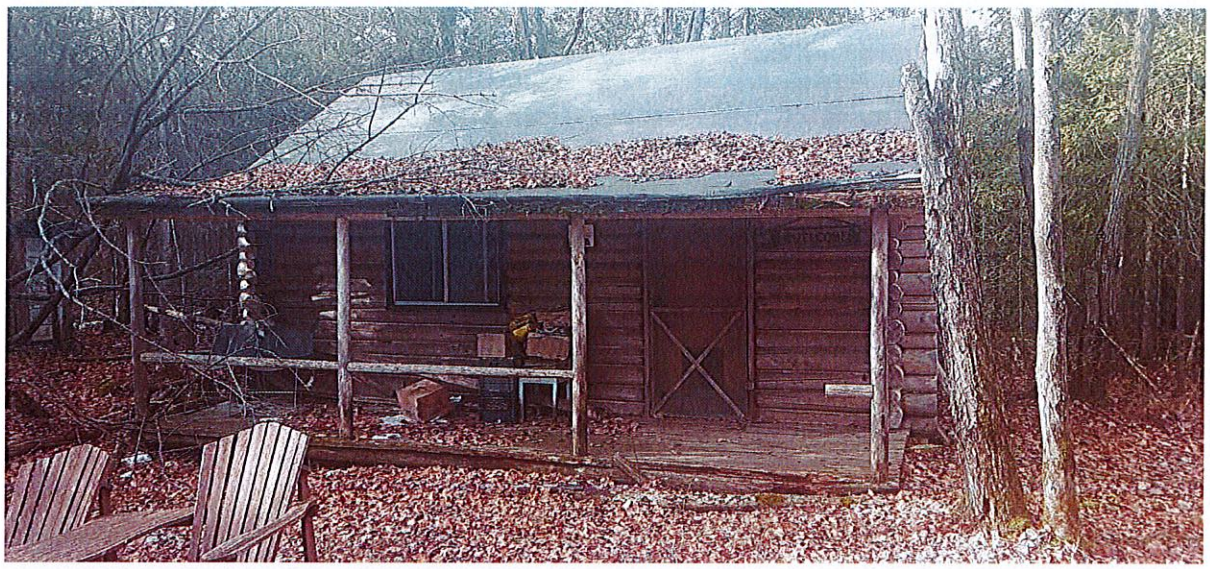
Waypoint 017 – Cleared area with silt and clay

Waypoint 18 – Surface Boulders

Waypoint 19 – Cleared areas with silt and clay

Waypoint 20 – View looking east at cleared area – silt and clay

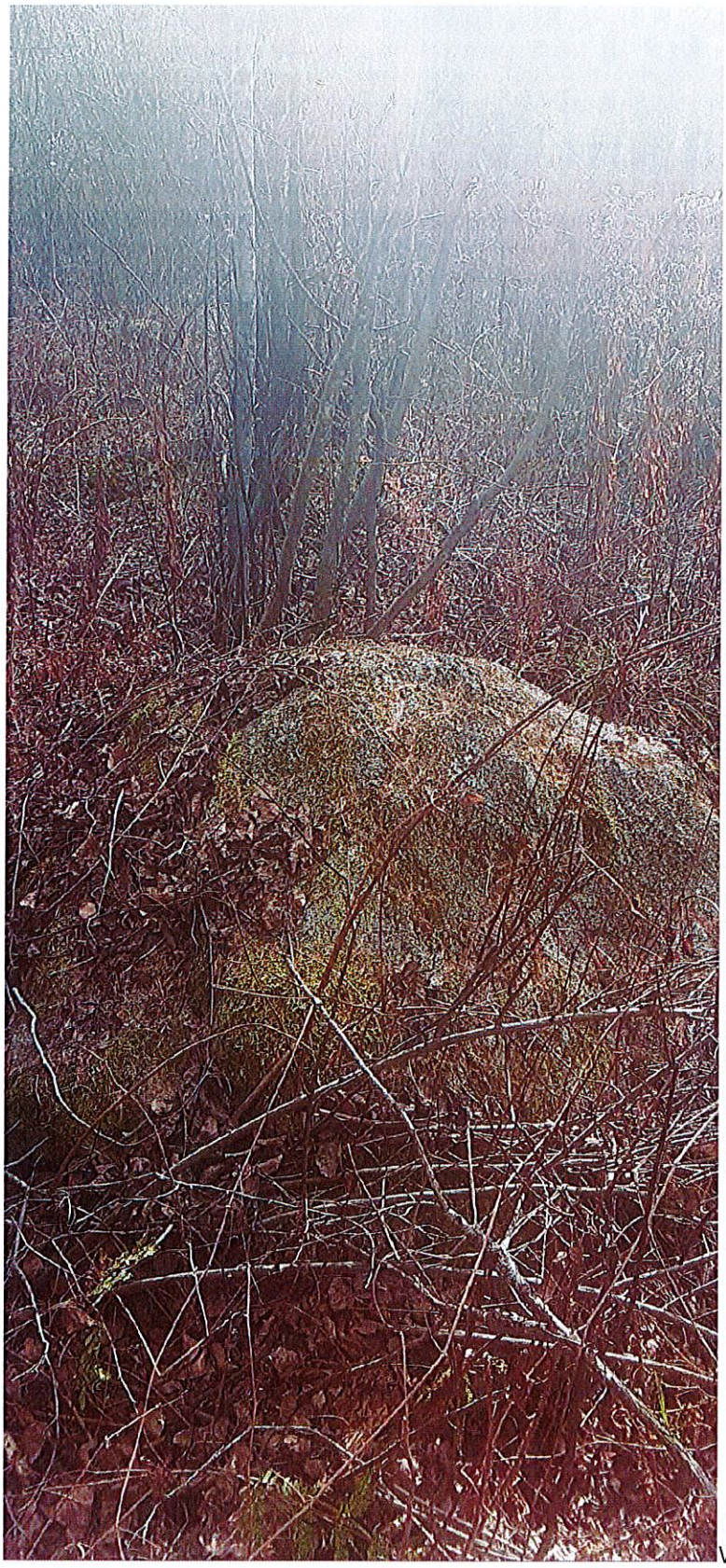
Waypoint 21 – View showing boulders at surface – glacial till



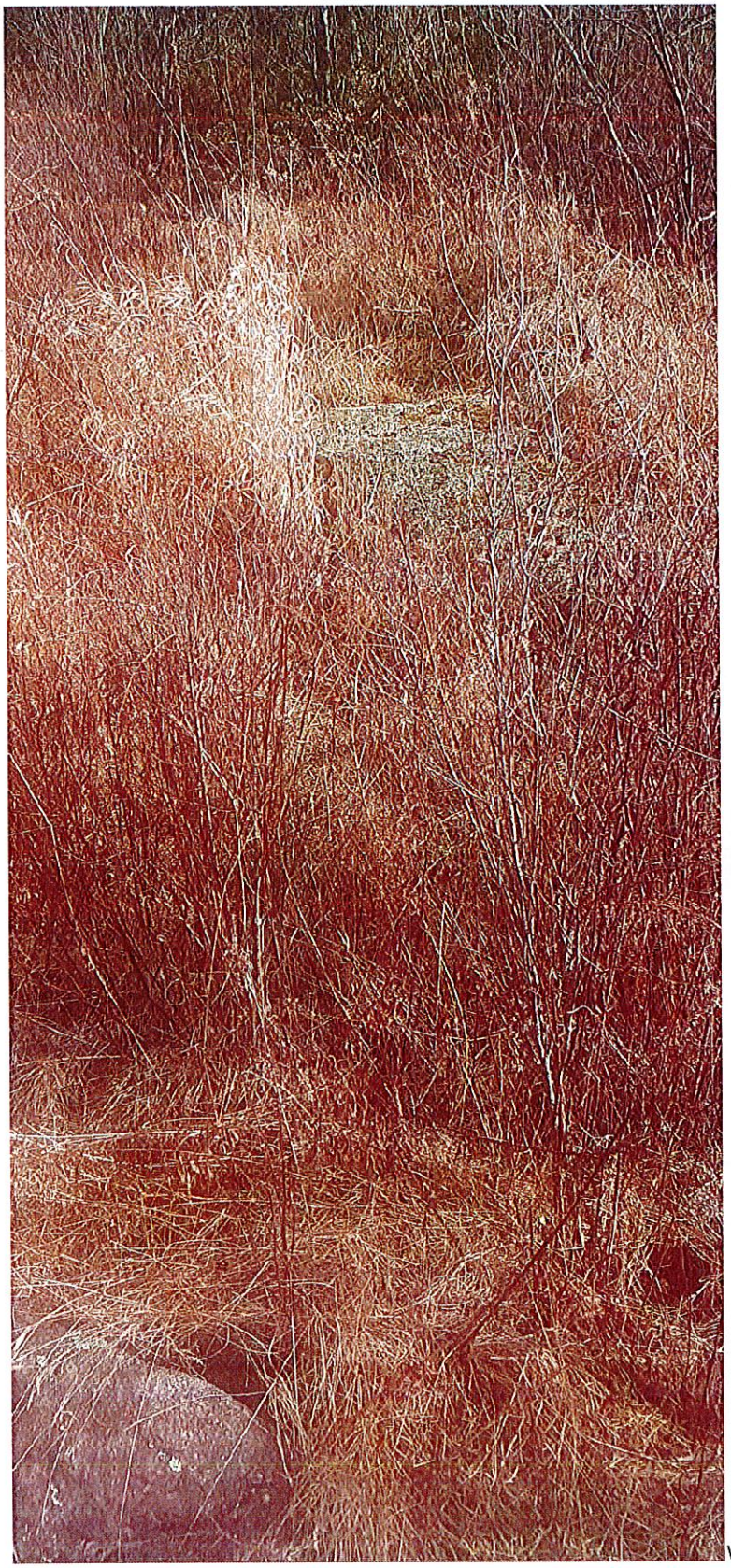
Waypoint 22 – Log Cabin

Waypoint 23 – Hummocky Terrain and Boulders at Surface – glacial till

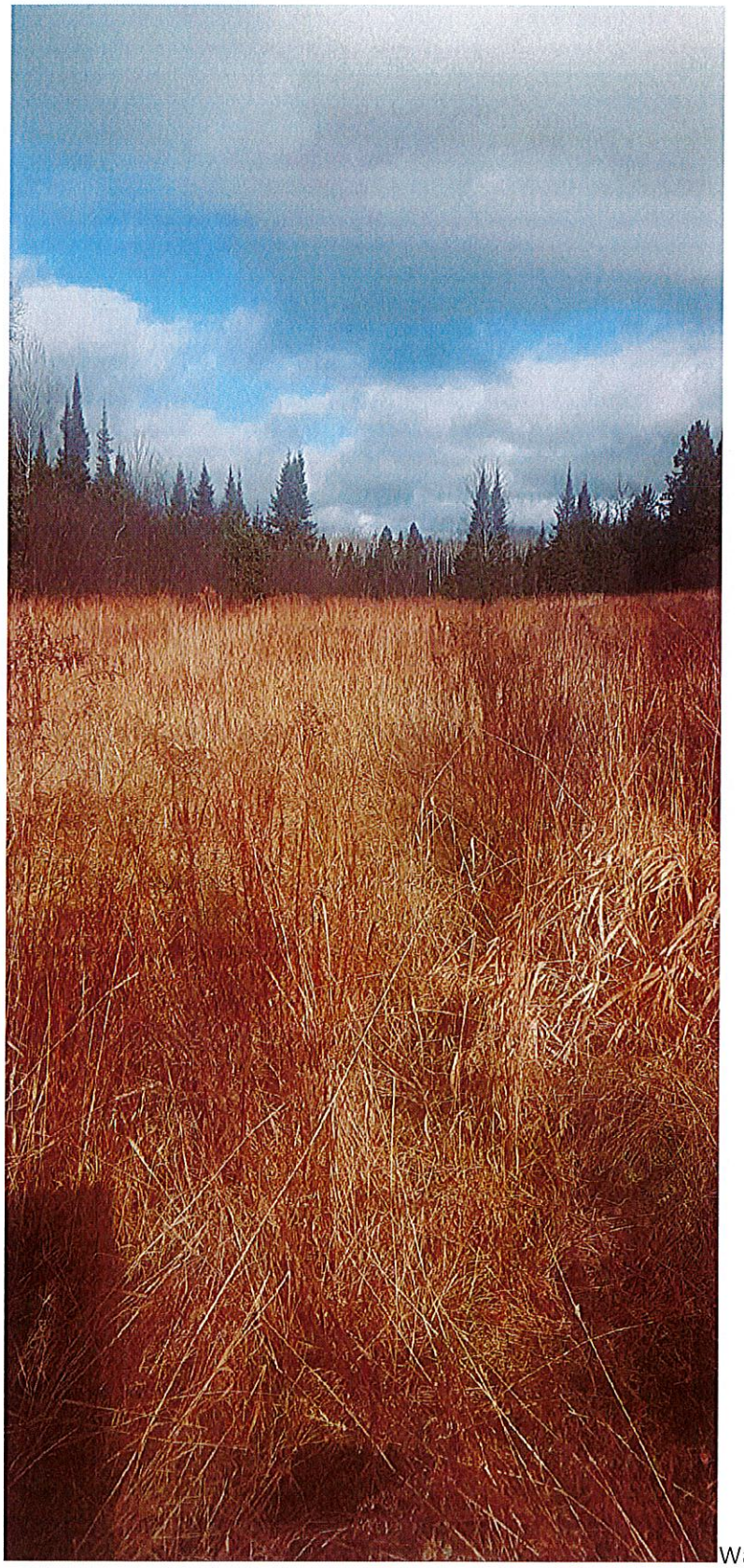
Waypoint 025 – Large Poplar Tree and Boulders at Surface - glacial till



Waypoint 026 – Boulder at surface



Waypoint 027 – Boulder in silt & clay



Waypoint 028 – Silt and clay area

APPENDIX A2:

SITE RECONAISANCE PHOTOS – LOT 13&14, CON 7&8

Waypoint 044 – Cleared area with silt and clay

Waypoint 045 – Ridge with boulders exposed – glacial till or glacial fluvial

Waypoint 046 – Top of Ridge – Glacial till or glacial fluvial

Waypoint 047 – Low area with alders – silt and clay

Waypoint 048 – Top of ridge – Glacial till or glacial fluvial

Waypoint 049 – Boulders at surface – glacial till or glacial fluvial

Waypoint 050 – Boulders at surface – glacial till or glacial fluvial

Waypoint 051 – Glacial till or glacial fluvial

Waypoint 053 – Low are with alders – silt and clay

Waypoint 054 – Glacial till or glacial fluvial

Waypoint 054 – Glacial till or glacial fluvial

Waypoint 055 – Four wheeler trail -Glacial till or glacial fluvial

Waypoint 055 – Four wheeler trail – Looking towards cleared area - Start of silt and clay

Waypoint 056 – On silt and clay looking towards ridge to east (glacial fluvial?)

Waypoint 057 – Glacial Fluvial?

Waypoint 057 – Top of ridge

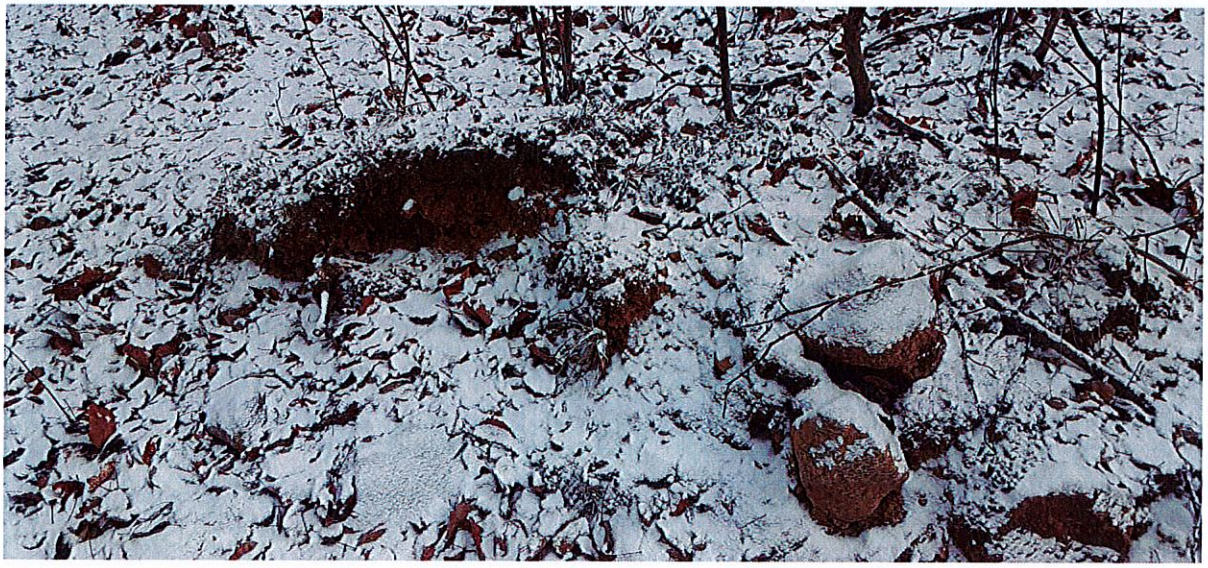
Waypoint 058 – Looking back at cleared area – silt and clay

Waypoint 059 – Top of ridge – glacial till or glacial fluvial

Waypoint 059 – Top of ridge – Glacial till or glacial fluvial

Waypoint 060 – Top of ridge with boulders – Glacial till or glacial fluvial

Waypoint 060 – Top of ridge – Glacial till or glacial fluvial



Waypoint 061 – Upturned tree root showing sandy soil with gravel and cobbles – glacial fluvial

Waypoint 062 – Four wheeler trail – Glacial fluvial

Waypoint 062 – Four wheeler trail – Glacial fluvial

Waypoint 063 – Bedrock Outcrop

Waypoint 063 – Bedrock outcrop

Waypoint 063 – Glacial fluvial

Waypoint 064 – Bedrock outcrop

Waypoint 065 – Glacial fluvial

Waypoint 065 – Glacial Fluvial

Waypoint 066 – Bedrock outcrop with glacial till or fluvial in foreground

Waypoint 066 – Glacial Fluvial

Waypoint 067 – Gravel and cobbles – glacial fluvial

Waypoint 067 – Large boulder at surface – glacial fluvial

Waypoint 068 – Bedrock outcrop

Waypoint 068 – Glacial till or glacial fluvial

Waypoint 069 – Transition from glacial till to glacial fluvial?

Waypoint 070 – Large boulder at surface – glacial fluvial?

Waypoint 070 – View of flat wetter area – silt and clay?

Waypoint 071 – Large boulder at surface – glacial fluvial?

Way 072 – View looking north up line – glacial fluvial?

Waypoint 073 – Boulder at surface – glacial fluvial?

Waypoint 073 – View looking north up line – glacial fluvial?

Waypoint 074 – Four wheeler trail – glacial till or glacial fluvial.

Waypoint 074 – Four wheeler trail – glacial fluvial?

Waypoint 074 – Survey Pin

Waypoint 075 – Cleared area underlain by silt and clay?

Waypoint 76 – Cleared are underlain by silt and clay

Waypoint 077 – View of slope with boulder at surface – glacial fluvial?

Waypoint 077 – Looking back at silt and clay area

Waypoint 077 – Old dug well

Waypoint 078 – sandy soil

Waypoint 078 – Glacial fluvial?

Waypoint 079 – Bedrock outcrop

Waypoint 080 -Glacial Fluvial?

Waypoint 080 – Glacial Fluvial?

Waypoint 081 – Glacial Fluvial?

Waypoint 082 – Sandy soil

Waypoint 082 – Large boulder on surface – sandy soil underneath.

Waypoint 083 – Sandy Soil

Waypoint 083 – Sandy and Gravel.

Waypoint 083 – Glacial Fluvial

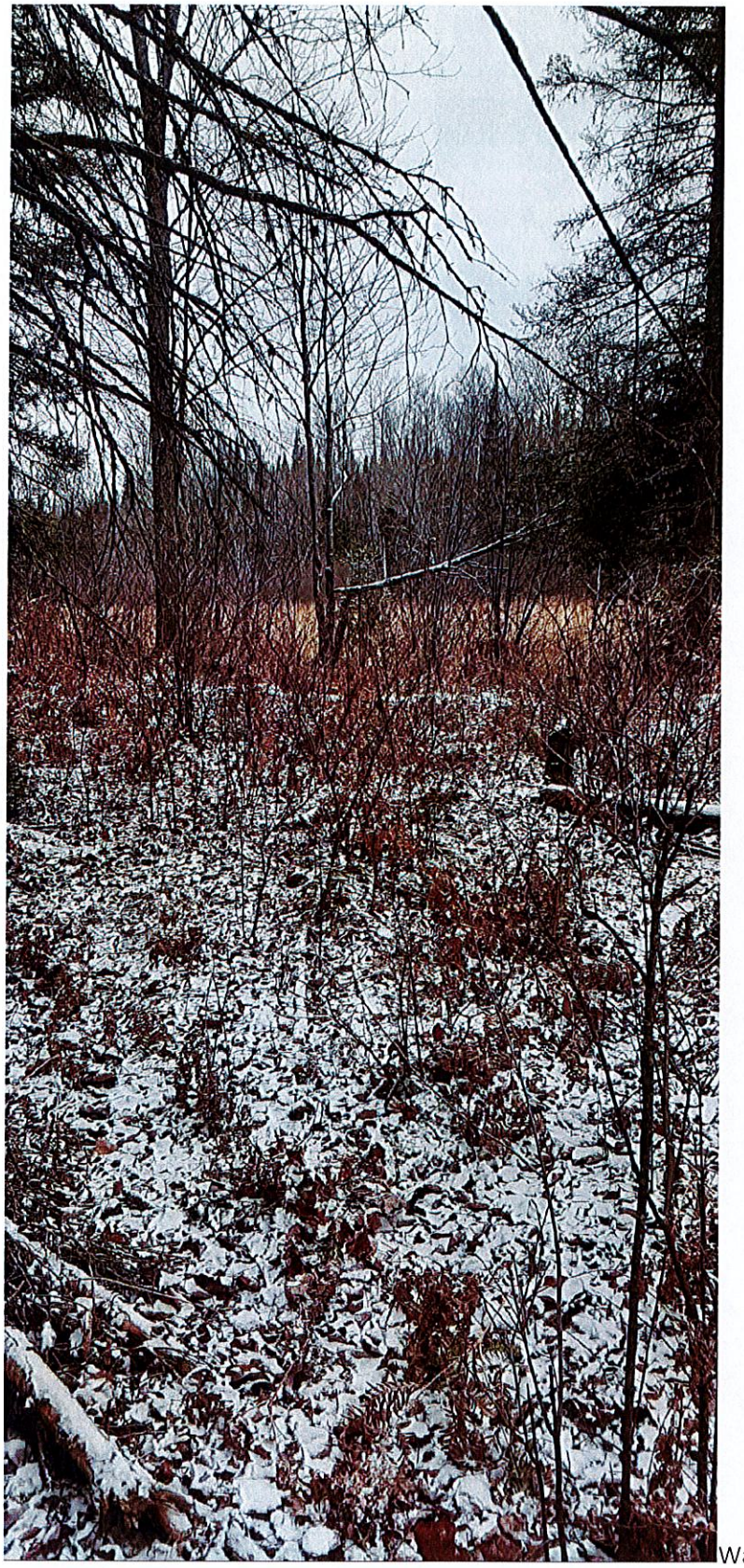
Waypoint 084 – Suspected bedrock outcrop

Waypoint 085 – Sand and gravel

Waypoint 086 – Glacial Fluvial

Waypoint 087 – Silt and Clay

Waypoint 088 – Bedrock outcrop



Waypoint 089 – Silt and Clay

Waypoint 089 – View of Wet area

Waypoint 090 – Sand and Gravel

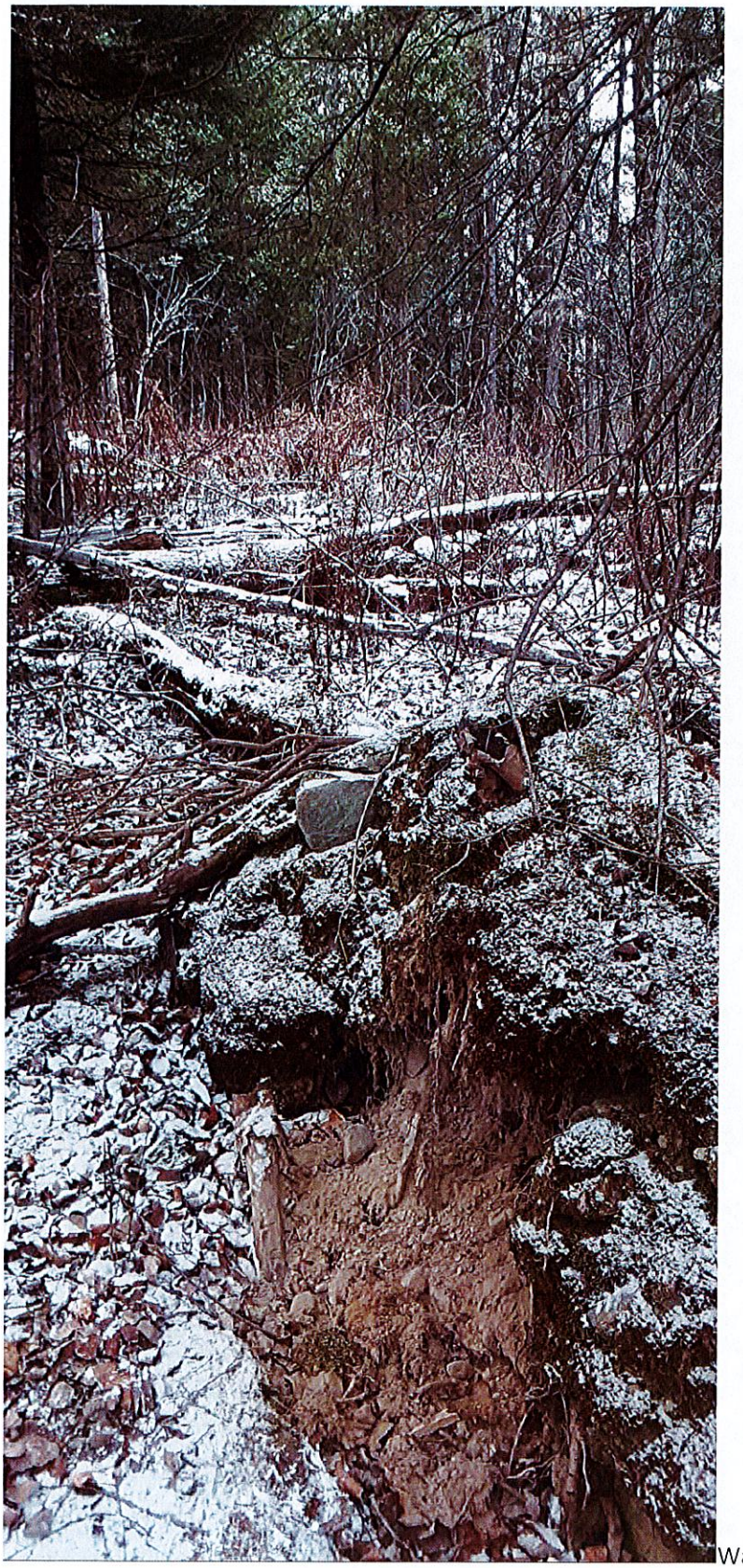
Waypoint 091 – Bedrock outcrop

Waypoint 092 – Bedrock outcrop

Waypoint 093 – Sandy Soil

Waypoint 094 – Low wet area

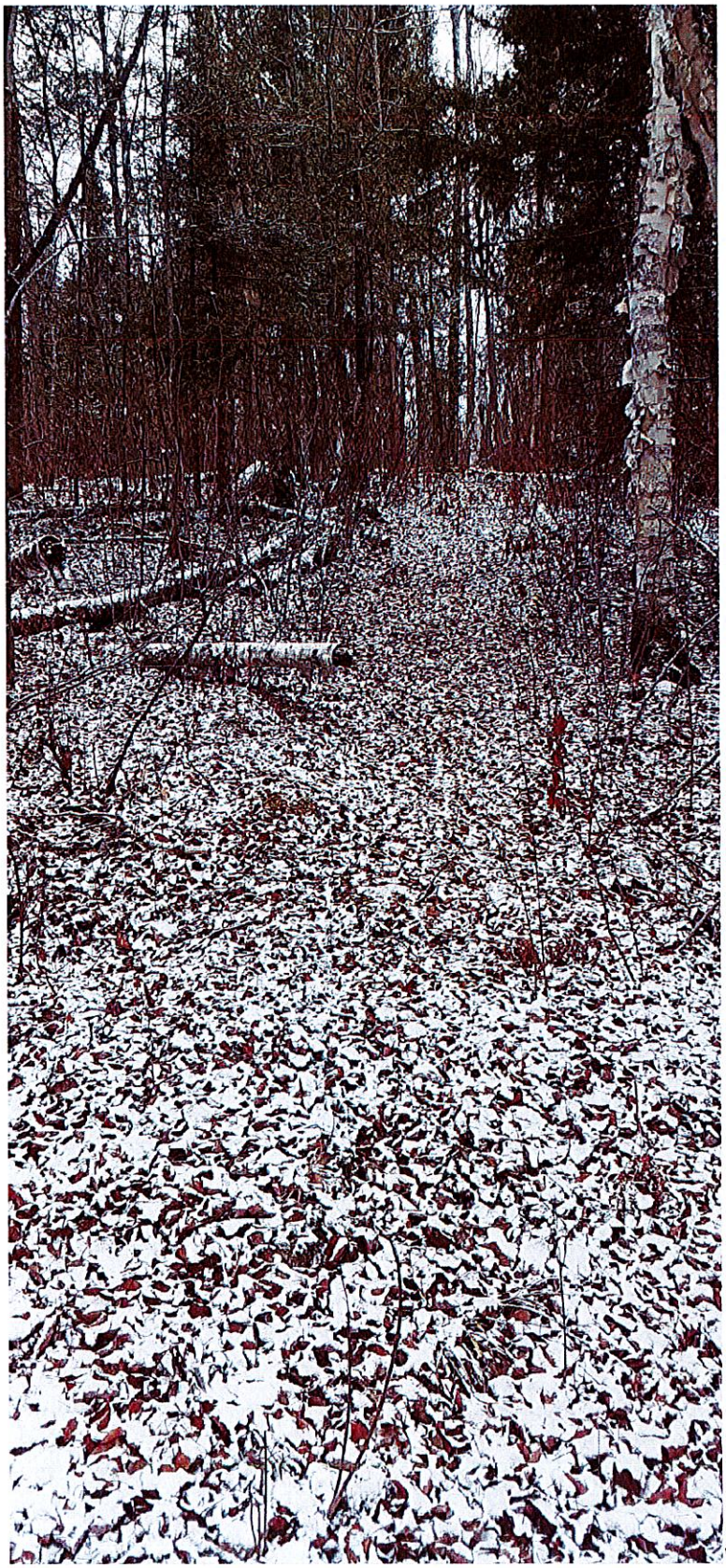
Waypoint 095 – Sand and Gravel



Waypoint 096 – Sand and gravel

Waypoint 097 – Glacial Fluvial

Waypoint 097 – Glacial Fluvial



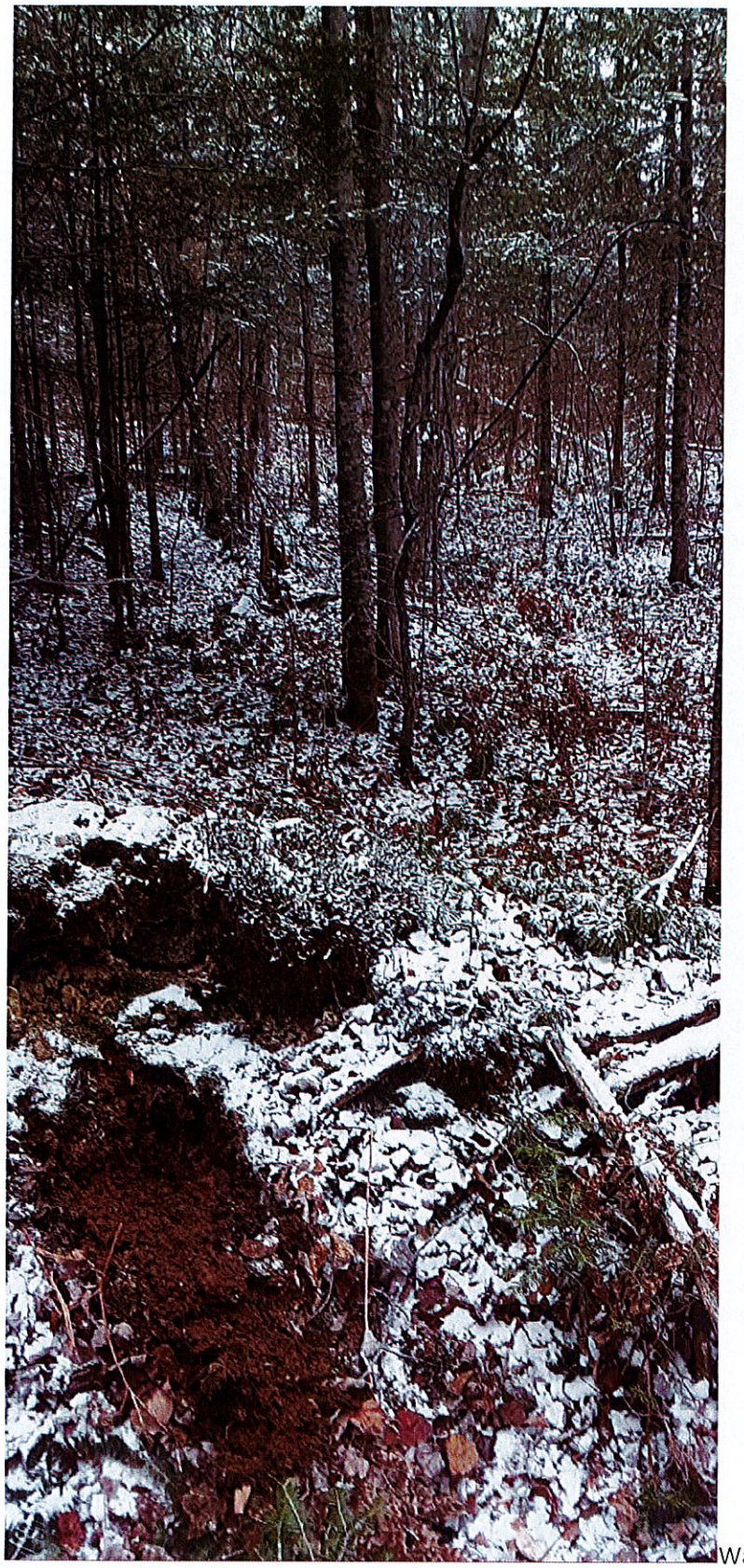
Waypoint 098 – Glacial Fluvial

Waypoint 098 – Glacial Fluvial

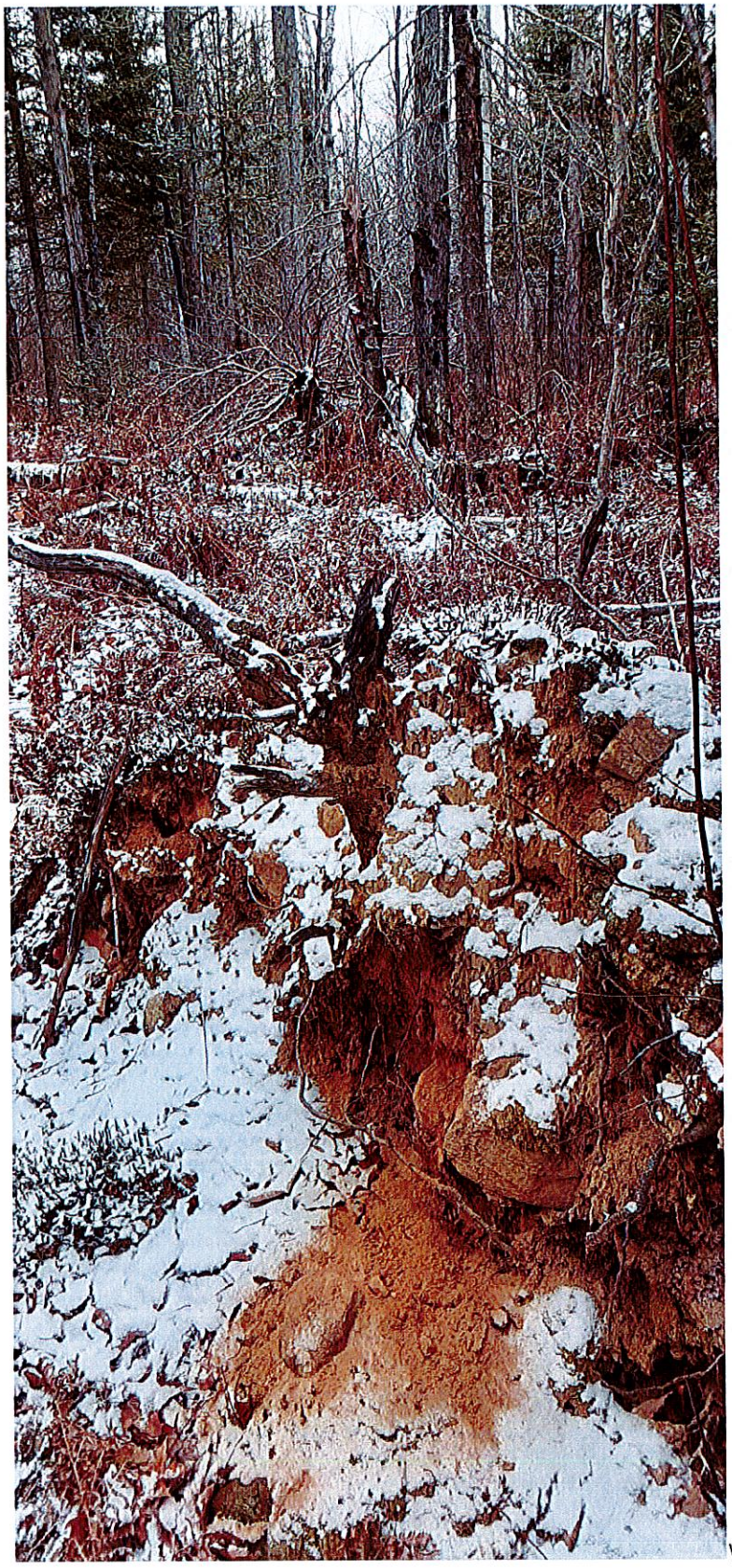
Waypoint 099 – Glacial Fluvial

Waypoint 099 – Large Boulder

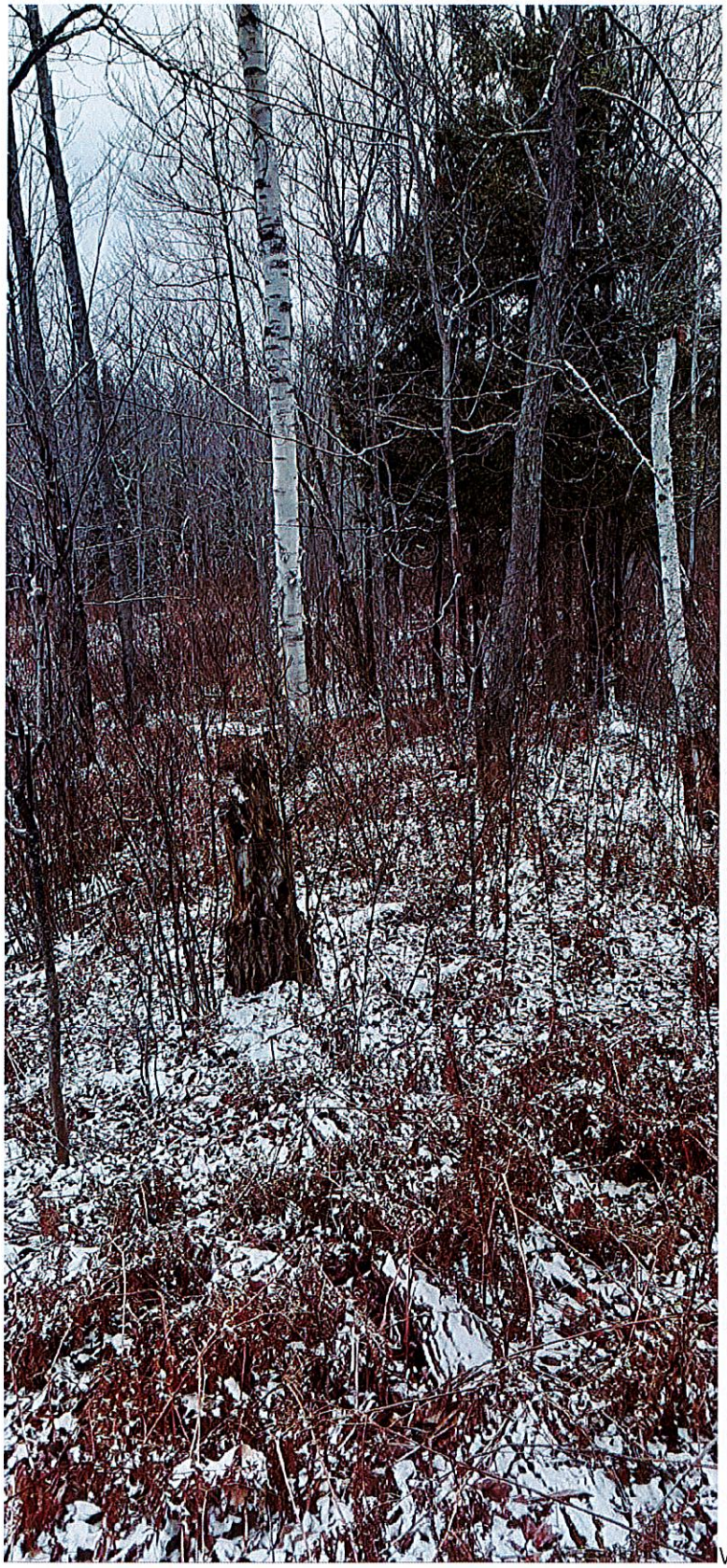
Waypoint 100 – Glacial Fuvial



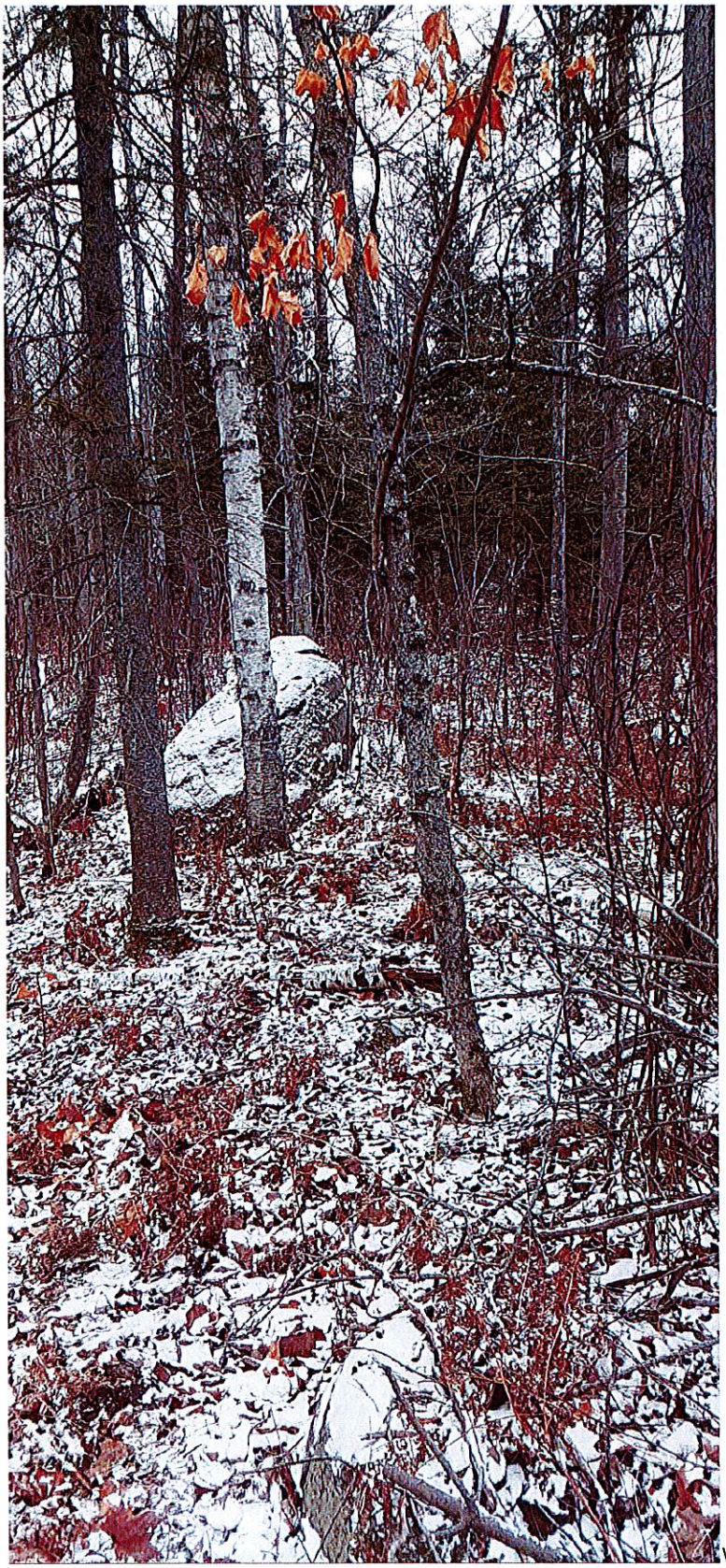
Waypoint 101 – Sandy soil



Waypoint 102 – Sand and Gravel



Waypoint 103 – Glacial Fluvial



Waypoint 103 – Boulders on surface

Waypoint 104 – Wet – silt and clay

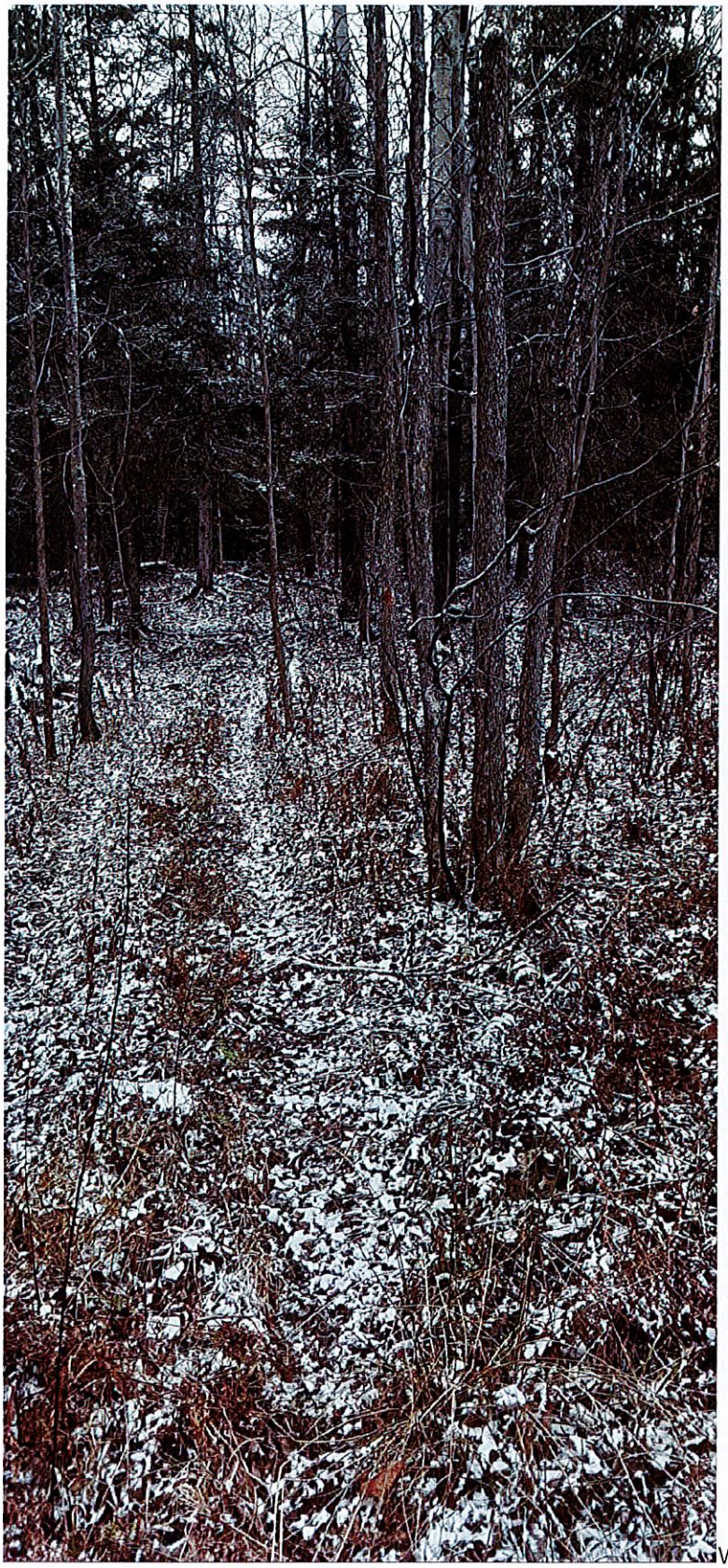
Waypoint 104 – Looking back trail

Waypoint 105 – Large Boulder on surface – glacial fluvial

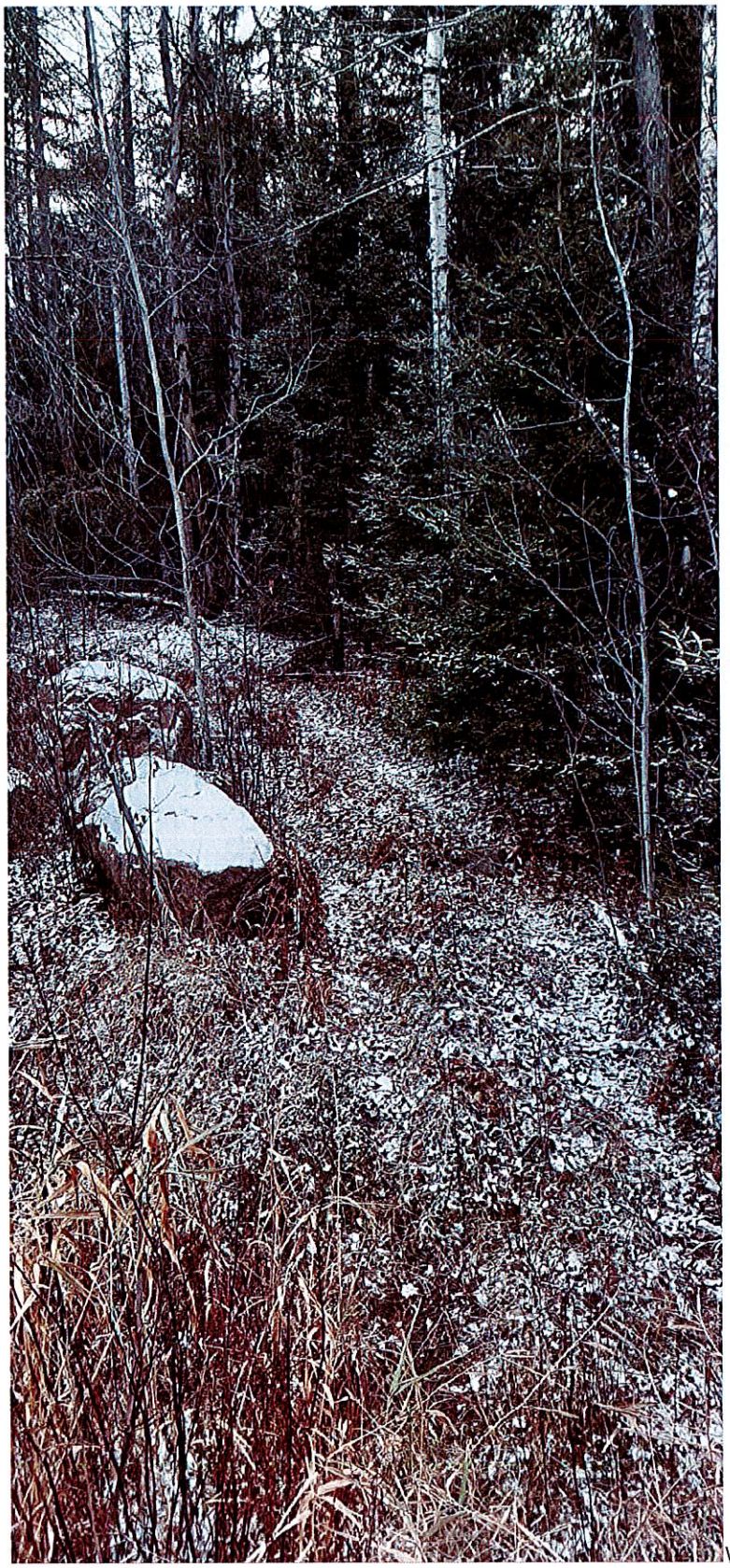
Waypoint 105 – Glacial Fluvial

Waypoint 106 – Low area – drainage

Waypoint 106 – Silt and Clay



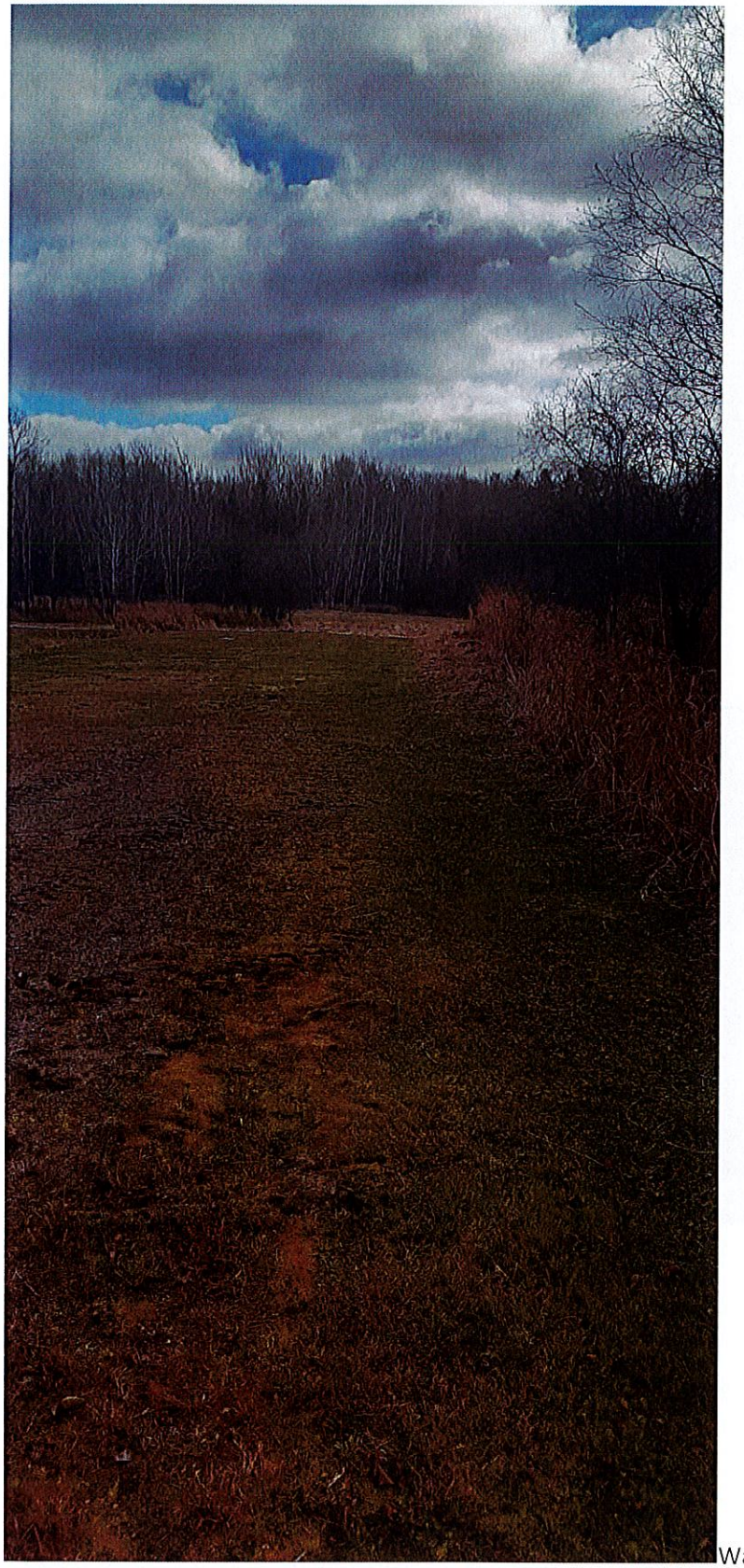
Waypoint 106 – Silt and Clay



Waypoint 107 – Glacial Fluvial

APPENDIX A3:

SIT RECONNAISANCE PHOTOS – LOT 13, CON 10



Waypoint 029 – Sit and Clay area

Waypoint 030 – Boulder at surface – glacial till

Waypoint 031 – Bedrock outcrop

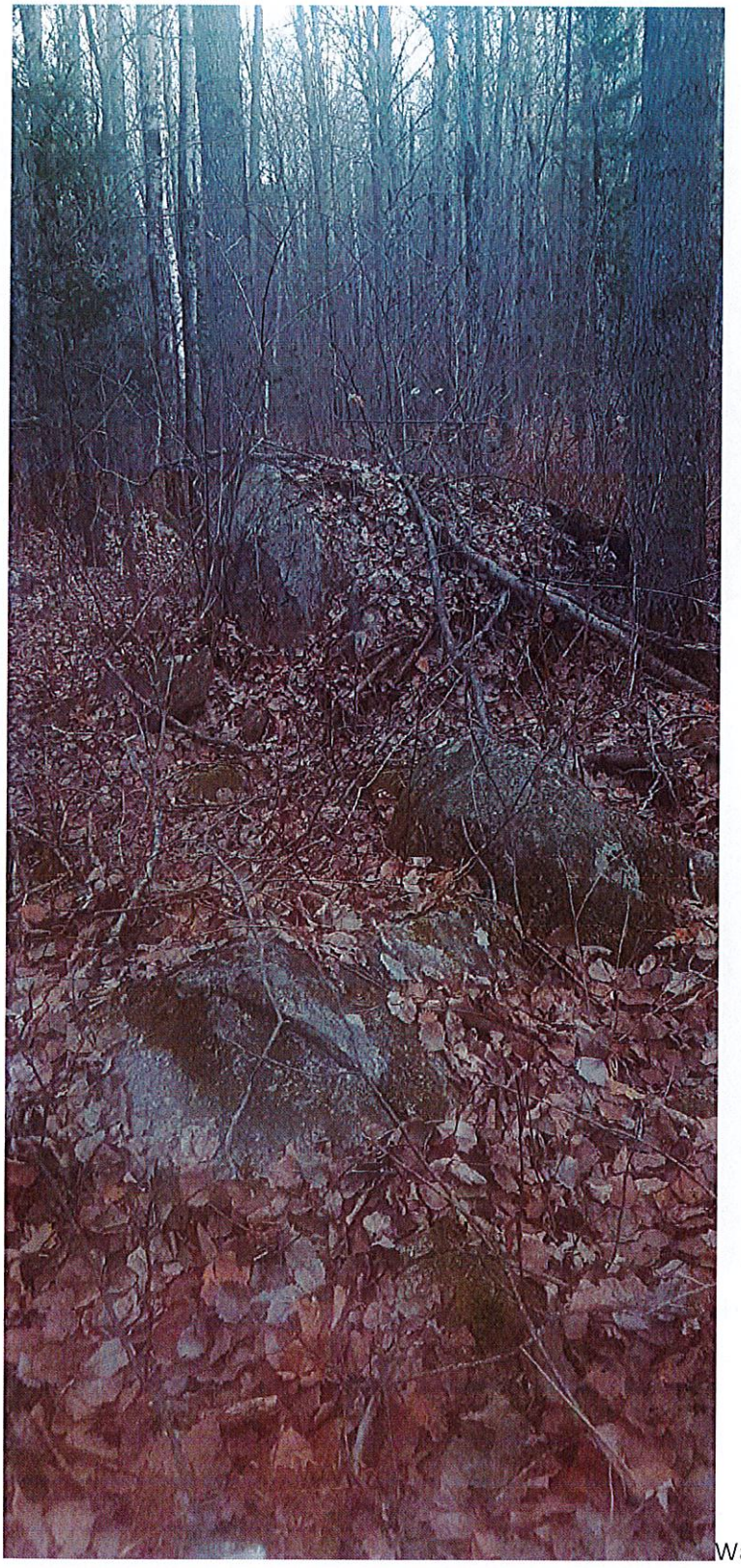
Waypoint 032 –Bedrock exposure

Waypoint 032 – Silt and Clay in low area

Waypoint 033 – Boulder exposure in silt and clay area

Waypoint 035 – Glacial till

Waypoint 036 – Boulder exposure in glacial till



Waypoint 037 – Large Boulders

Waypoint 038 – Silt and Clay area

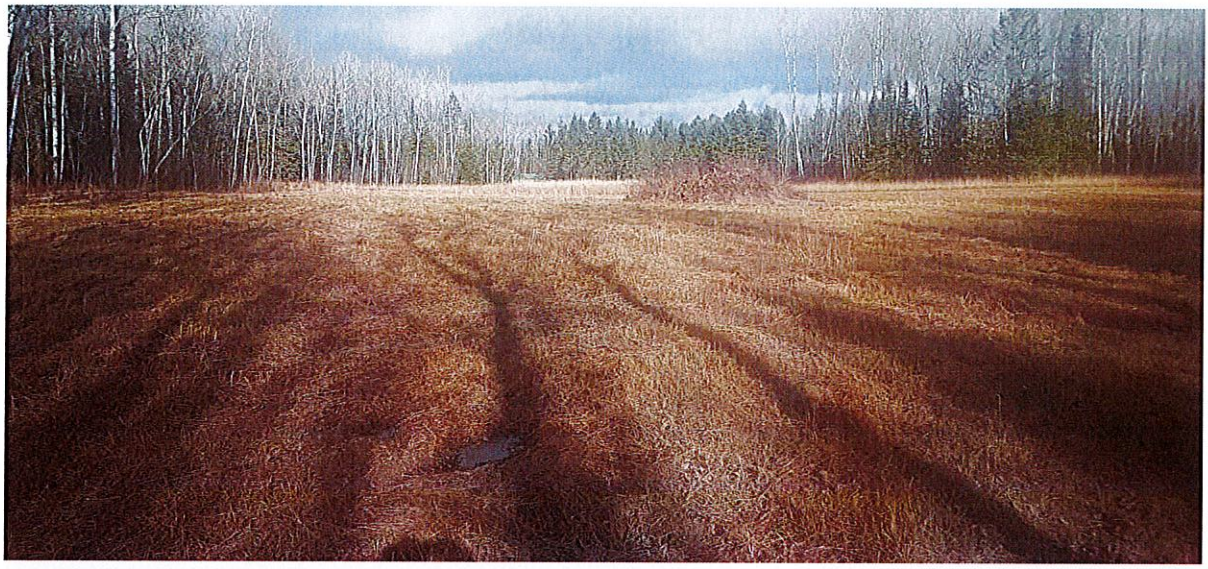
Waypoint 039 – Exposed boulders in glacial till

Waypoint 040 – Bedrock exposure

Waypoint 041 – Silt and Clay area

Waypoint 042 – Cleared area with silt and clay

Waypoint 042 – view of trail in silt and clay



Waypoint 043 – Cleared area with silt and clay

APPENDIX B:

TEST PIT PROGRAM PHOTOS

Photo 1 - Test Pit 1 Excavation

Photo 2 - Test Pit 1 excavation on ridge.

Photo 3 - Test Pit 1 - 2.4 m deep sandy glacial till with no evident groundwater.

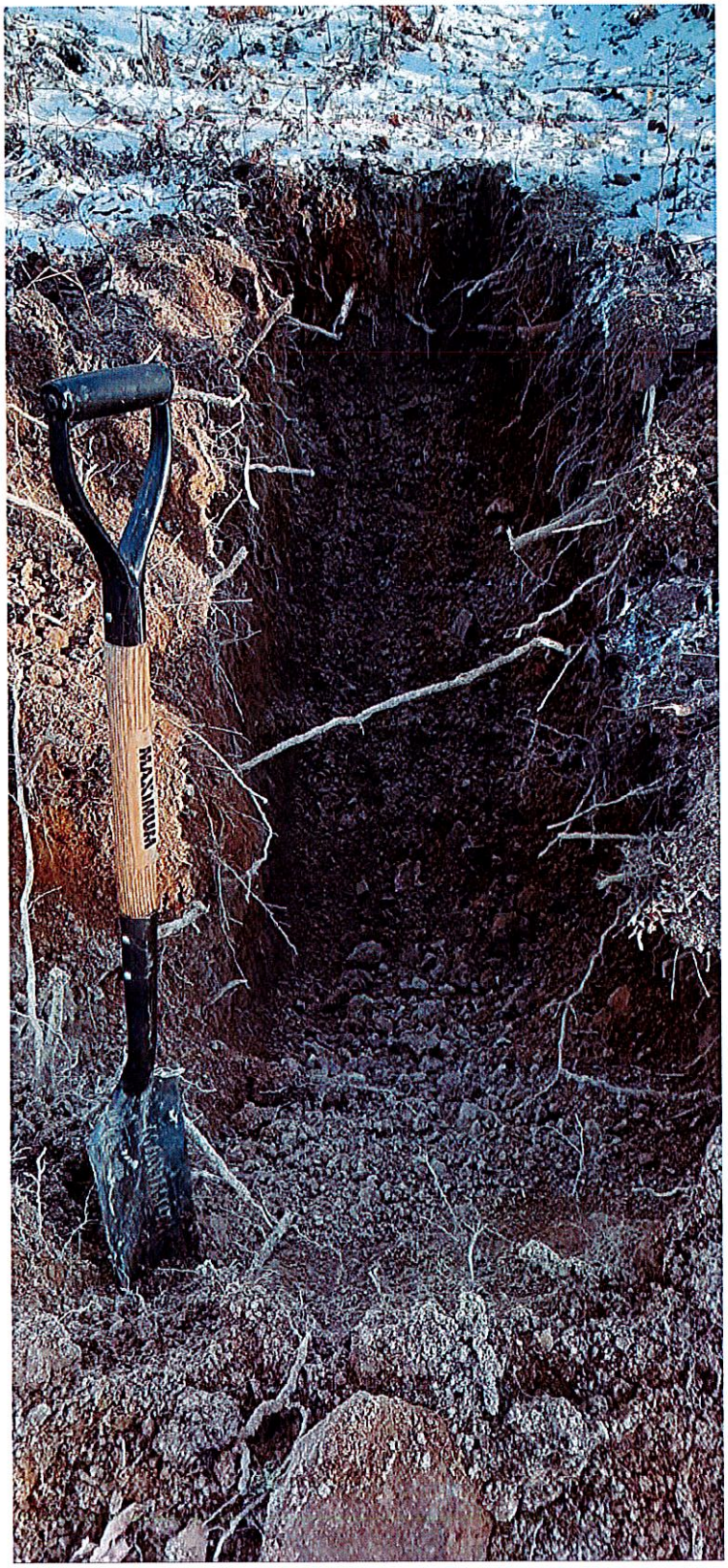


Photo 4 - Test Pit 2 – 1.42 m deep sandy glacial till with no evident groundwater

Photot 5 - Test Pit 3 – 1.11 m deep sandy glacial till with no evident groundwater

Photo 6 - Test Pit 3 – 1.11 m deep sandy glacial till

Photo 7 - Test Pit 3 – 1.11 m deep sandy glacial till

Photo 8- Test Pit 4 - 0.78 m deep sandy glacial till - no evident groundwater.

Photo 9 - Test Pit 4 - 0.78 m deep sandy glacial till

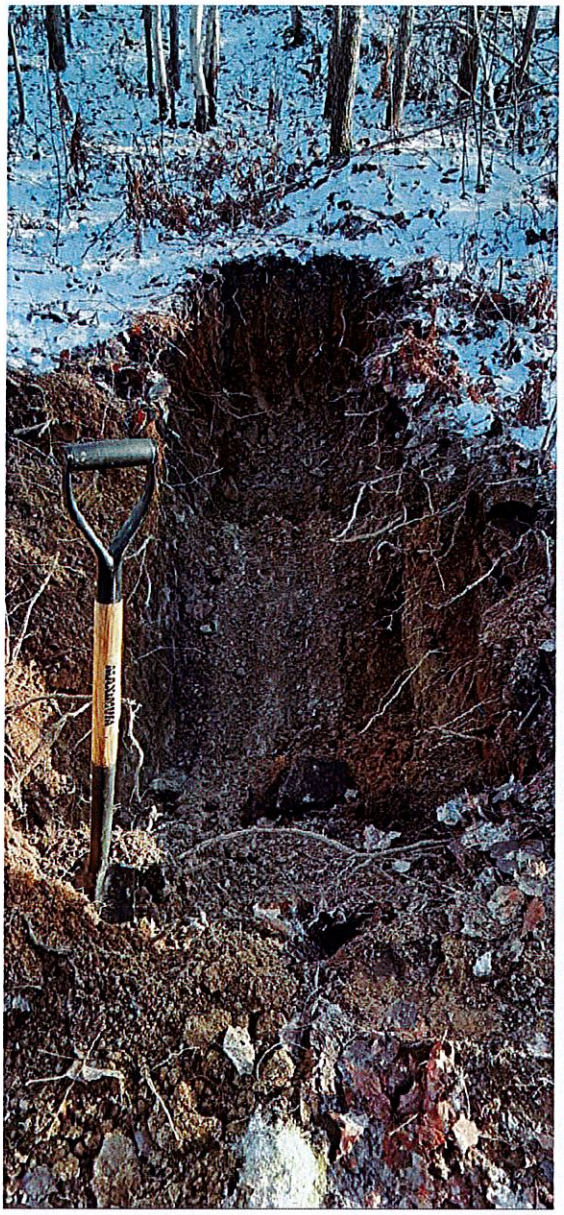


Photo 10 - Test Pit 5 – 0.81 m deep sandy glacial till with no evident groundwater

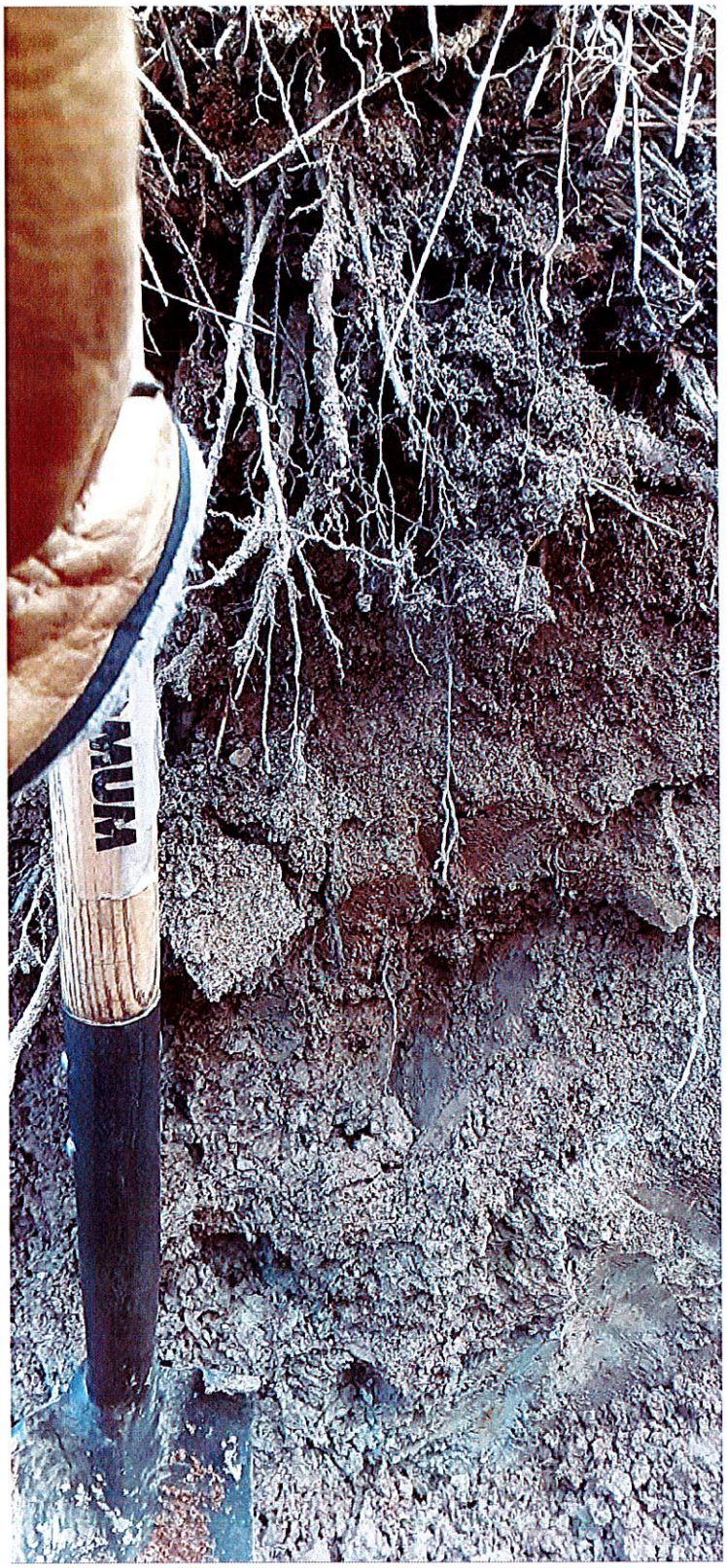


Photo 11 - Test Pit 6 showing varved silt and clay near surface

Photo 12 - Test Pit 6 - 1.8 m deep varved silt and clay overlying sandy glacial till

Photo 13 - Sample from Test Pit 1 – 43.7% gravel, 53.8% sand, 2.5% fines.

Photo 14 - Sample from Test Pit 3 - 38.5% gravel, 45.6% sand, 16.0% fines

Photo 16 - Sample from Test Pit 5 – 23.2 % gravel, 51.3% sand, 25.5% fines

APPENDIX C:

WELL LOGS

Ontario Ministry of the Environment, Conservation and Parks

Well Record

Regulation 903 Ontario Water Resources Act

Well Tag No. (Place Sticker and/or Print Below): A 385476

Page 1 of 1

Measurements recorded in: ☐ Metric ☑ Imperial

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Degagné Carpentry		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
452 Quai Quai Rd		ont	P0H1K0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Corbeil Rd.	East Ferris		

County/District/Municipality	City/Town/Village	Province	Postal Code
Nipissing	Corbeil	Ontario	P0H1K0

UTM Coordinates: NAD 83, Zone 17, Easting 632762, Northing 5121543

Municipal Plan and Sublot Number:

Other:

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay			0'	10'
Brown	Sand	Stones, Gravel		10'	23'
Grey & Red	Granite			23'	142'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
20'	surf	Bentonite Slurry	

Method of Construction

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☑ Air percussion ☐ Other, specify ☐ Diamond ☐ Jetting ☐ Driving ☐ Digging

Well Use

☐ Public ☑ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify ☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning ☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6¼	Steel	.188	+2.	32'

Status of Well

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

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☑ Other, specify: Cloudy

If pumping discontinued, give reason:

Pump intake set at (m/ft): 50'

Pumping rate (l/min / GPM): 15 GPM

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 50'

If flowing give rate (l/min/GPM):

Recommended pump depth (m/ft): 100'

Recommended pump rate (l/min/GPM): 0-8 GPM.

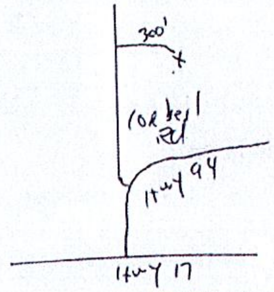
Well production (l/min/GPM): 10 GPM.

Disinfected? ☐ Yes ☑ No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level	7'		
1	14'	1	44'
2	20'	2	39'
3	26'01"	3	34'
4	31'	4	29'10'
5	35'	5	26'
10	50'	10	16'
15	50'	15	12'
20	50'	20	9'
25	50'	25	
30	50'	30	
40	50'	40	
50	50'	50	
60	50'	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Water Details

Water found at Depth	Kind of Water
100 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify
128 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0'	20	10'
20'		

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Gilles Bouffard Drilling Ltd	1462

Business Address (Street Number/Name)	Municipality
438 Salter St.	Sturgeon Falls

Province	Postal Code	Business E-mail Address
Ont	P2B2T4	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
7057531817	Bouffard Claude.

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
1634	[signature]	YYYY MM DD

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☑ No	YYYY MM DD	2023 08 14

Ministry Use Only

Audit No. Z392738

Received

11:52 LTE 25

image_67214593.JPG

Ontario Ministry of the Environment, Conservation and Parks — Well Record

Regulation 903 Ontario Water Resources Act — Page ___ of ___

Well Tag No. (Affix Sticker and/or Print Below): Tag#:A385480

Measurements recorded in: ☑ Metric ☐ Imperial

Well Owner's Information

First Name: Degagné — Last Name/Organization: Carpentry — E-mail Address: — ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): 452 Quai Quai Rd. — Municipality: — Province: ont — Postal Code: P0H1K0 — Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): Corner of Lavigne Rd — Township: East Ferris — Lot: — Concession:

County/District/Municipality: Nipissing — City/Town/Village: Corbeil — Province: Ontario — Postal Code: P0H1K0

UTM Coordinates: Zone: NAD 8 3 17 — Easting: 613214 — Northing: 5121648 — Municipal Plan and Subdist Number: — Other:

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
Brown	Sand + Boulders			0'	19'
Red	GRANITE	SOFT		19'	28'
Red	GRANITE			28'	362'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
30'	SURF	Bentonite Slurry	

Method of Construction

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☑ Air percussion ☐ Other, specify
☐ Diamond ☐ Jetting ☐ Driving ☐ Digging

Well Use

☐ Public ☑ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify
☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning
☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6¼	Steel	.188	+2	30'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

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

Water Details

Water found at Depth (m/ft)	Kind of Water	Hole Diameter Depth From	To	Diameter (cm/in)
	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify FOUL	0'	30'	10"
	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	30'	362'	6"
	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify			

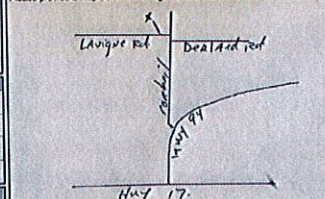
Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☑ Other, specify Reddish
If pumping discontinued, give reason:
Pump intake set at (m/ft): 330
Pumping rate (l/min / GPM): 3 GPM
Duration of pumping: 6 hrs + 0 min
Final water level end of pumping (m/ft): 287'
If flowing give rate (l/min/GPM):
Recommended pump depth (m/ft): 200'
Recommended pump rate (l/min/GPM): 0-5 GPM
Well production (l/min/GPM): 8+ GPM
Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level	8'		296'66"
1	9'68"	1	292'64"
2	11'64"	2	289'
3	12'66"	3	284'64"
4	13'68"	4	280'63"
5	14'66"	5	276'3"
10	18'	10	256'4
15	20'	15	236'6
20	21'69"	20	216'7"
25	22'65"	25	196'4"
30	23'63"	30	179'1"
40	24'66"	40	145'07"
50	25'64"	50	113'06"
60	26'63"	60	83'68"

Map of Well Location

Please provide a map below following instructions on the back.



Comments: Pump Well Set 3/6/19 gpm. TOTAL 6hrs

Well Contractor and Well Technician Information

Business Name of Well Contractor: Gilles Boulerd Drilling LTD — Well Contractor's Licence No.: 1 1 4 6 2
Business Address (Street Number/Name): 438 Salter St — Municipality: Sturgeon Falls
Province: ONT — Postal Code: P2B 0T4 — Business E-mail Address:
Bus. Telephone No. (inc. area code): 7057533817 — Name of Well Technician (Last Name, First Name): Boulerd, Claude
Well Technician's Licence No.: 1 6 1 3 1 4 — Signature of Technician and/or Contractor — Date Submitted: 2019/03/25

Well owner's information package delivered: ☐ Yes ☐ No — Date Package Delivered — Date Work Completed: 2019/03/20

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Ministry's Copy

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Ontario — Ministry of the Environment, Conservation and Parks

Well Record

Regulation 903 Ontario Water Resources Act

Well Tag No. (Place Sticker and/or Print Below): A385453

Page 1 of 1

Measurements recorded in: ☐ Metric ☑ Imperial

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Deagre Carpentry		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
452 Quai Quai Rd.	Corbeil	Ont	P0H1K0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Bertha Rd	East Ferris	15	7

County/District/Municipality	City/Town/Village	Province	Postal Code
Nipissing	Corbeil	Ontario	P0H1K0

UTM Coordinates Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83 / 17	633144	5120742		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
Blue	Clay			0'	12'
Brown	Sand, Gravel	+ Boulders	Soft, Fractured	12'	24'
Red	Granite			24'	25'
Grey	Granite			25'	30'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
20'	surf	Bentonite Slurry	

Method of Construction

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☑ Air percussion ☐ Other, specify

☐ Diamond ☐ Jetting ☐ Driving ☐ Digging

Well Use

☐ Public ☑ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify

☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning

☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6¼	Steel	.188	+2	20'

Status of Well

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

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth From	To	Diameter (cm/in)
28' (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	0'	20'	10"
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	20'	26'	8¾
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	26	30	6"

Results of Well Yield Testing

After test of well yield, water was: ☑ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason: Static Level 6 Level

Pump intake set at (m/ft): 20'

Pumping rate (l/min / GPM): 5 / 6.914

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 5'08"

If flowing give rate (l/min/GPM):

Recommended pump depth (m/ft): 20'

Recommended pump rate (l/min/GPM): 0-5 GPM

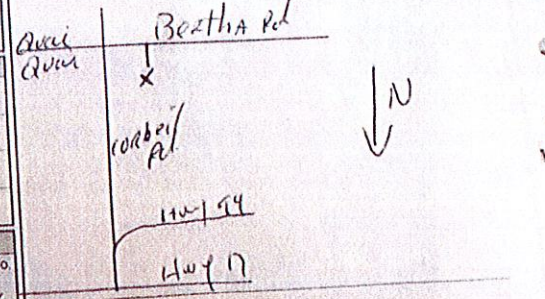
Well production (l/min/GPM): 20+ GPM

Disinfected? ☐ Yes ☑ No

	Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level				
1	2'		1	5'09"
2	3'		2	4'06"
3	3'64"		3	3'10"
4	3'07"		4	3'
5	4'61"		5	2'66'
10	5'08"		10	
15	6'03"		15	
20	6'05"		20	
25	6'06'		25	6 Level
30			30	
40			40	
50			50	
60	71		60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor: Gilles Bouffard Drilling Ltd

Well Contractor's Licence No.: 1462

Business Address (Street Number/Name): 438 Salter St

Municipality: Sturgeon Falls

Province: Ont

Postal Code: P2B2T4

Business E-mail Address:

Bus. Telephone No. (inc. area code): 705 753 1817

Name of Well Technician (Last Name, First Name): Bouffard Claude

Well Technician's Licence No.: 1634

Signature of Technician and/or Contractor:

Date Submitted: Y Y Y Y M M D D

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2020 08 25

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Well Record

Regulation 903 Ontario Water Resources Act

Well Tag No. (Place Sticker and/or Print Below): A 385 454

Measurements recorded in: ☐ Metric ☑ Imperial

Page 1 of 1

Well Owner's Information

First Name: Degagné | Last Name/Organization: Carpentry | E-mail Address: | ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): 452 Quai Quai Rd. | Municipality: Corbeil | Province: Ont | Postal Code: P0H 1K0 | Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): Across From 69 Bertha Rd | Township: East Ferris | Lot: 15 | Concession: 7

County/District/Municipality: Nipissing | City/Town/Village: Corbeil | Province: Ontario | Postal Code: P0H 1K0

UTM Coordinates: Zone: NAD 8 3 | Easting: 17 632879 | Northing: 5120617 | Municipal Plan and Sublot Number: | Other:

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
Brown	Sand	Gravel & Stones		0'	20'
Red	Granite			20'	342'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
20'	surf	Bentonite Slurry	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☑ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6¼	Steel	.188	+2	24

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

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

Water Details

Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	Depth (m/ft) From	To	Hole Diameter (cm/in)
	Kind of Water: ☐ Fresh ☐ Untested ☑ Other, specify FLAK	0'	20'	10"
	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify	20'	24'	8 7/4
	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify	24'	342	6"

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☑ Other, specify Cloudy

If pumping discontinued, give reason: Pump not Large Enough

Pump intake set at (m/ft) 150'

Pumping rate (l/min / GPM) 10 GPM.

Duration of pumping hrs + 15 min

Final water level end of pumping (m/ft) 50'

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft) 250'

Recommended pump rate (l/min/GPM) 0-5 GPM.

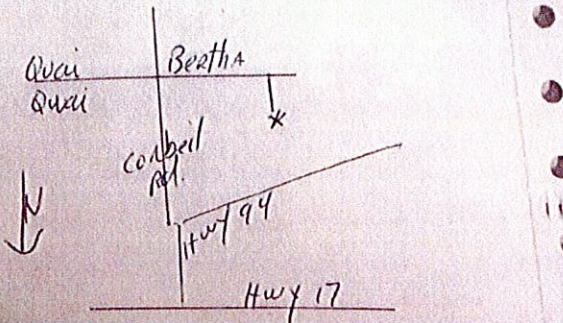
Well production (l/min/GPM) 6 GPM.

Disinfected? ☑ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level		15'		
1	1'	21'	1	48'
2	2'	26'	2	46'6"
3	3'	30'	3	44'5"
4	4'	33'	4	43'01"
5	5'	36'02"	5	41'07"
10	10'	46'04"	10	35'02"
15	15'	50'	15	30'
20			20	26'02"
25			25	23'
30			30	21'
40			40	17'02"
50			50	16'08"
60			60	16'04"

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor: Gilles Bouffard Drilling Ltd | Well Contractor's Licence No.: 1 1 4 6 1

Business Address (Street Number/Name): 438 Salter St. | Municipality: Sturgeon Falls

Province: Ont | Postal Code: P2B 2T4 | Business E-mail Address:

Bus. Telephone No. (inc. area code): 7 0 5 7 5 3 1 8 1 7 | Name of Well Technician (Last Name, First Name): Bouffard Claude

Well Technician's Licence No.: 1 6 3 4 | Signature of Technician and/or Contractor | Date Submitted: Y Y Y Y M M D D

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2023 08 24

Ministry Use Only — Audit No. Z392741 — Received

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Ontario — Ministry of the Environment, Conservation and Parks

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☑ Imperial — Page 1 of 1

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Dignac Corporation		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
452 Quai Quai Rd.	Corbeil	Ont	P0H1K0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lavigne Rd.	East Ferris		

County/District/Municipality	City/Town/Village	Province	Postal Code
Nipissing	Corbeil	Ontario	P0H1K0

UTM Coordinates Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3 17	633159	5122920		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
Blue	Clay			0'	15'
Sand,	Gravel	&	Boulders	15'	28'
Red	Granite			28'	182'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
20'	surf	Bentonite Slurry	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6 1/4	Steel	.188	+2	32'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

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

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth (m/ft) From	To	Diameter (cm/in)
34 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	0'	20'	10"
155 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	20'	32'	8 3/4
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	32'	182	6"

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☑ Other, specify: Reddish

If pumping discontinued, give reason:

Pump intake set at (m/ft): 50'

Pumping rate (l/min / GPM): 10 GPM

Duration of pumping: hrs + 30 min

Final water level end of pumping (m/ft): 47'

If flowing give rate (l/min/GPM):

Recommended pump depth (m/ft): 75'

Recommended pump rate (l/min/GPM): 0-5 GPM

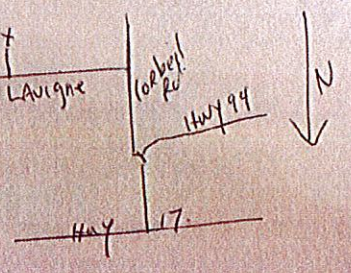
Well production (l/min/GPM): 10 GPM

Disinfected? ☐ Yes ☑ No

	Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level		3'05"		44'
1		8'03"	1	39'
2		12'02"	2	34'
3		15'04"	3	29'10"
4		17'06"	4	26'07"
5		19'08"	5	23'06"
10		27'02"	10	15'07"
15		32'07"	15	12'
20		37'08"	20	9'04"
25		42'	25	8'
30		47'02"	30	
40			40	
50			50	3'05"
60			60	—

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Gilles Bouffard Drilling Ltd	1462

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
438 Salter St	Sturgeon Falls	Ont	P2B2T4	

Bus Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
705 753 1817	Bouffard Claude

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
1634		

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☑ No		Audit No. 2392740
	Date Work Completed: 2023/10/13	Received

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