VIA Email: lloyd@lloydphillips.com

June 22, 2017 (revised February 14, 2018)

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The Hindu Temple of Ottawa Carlton Inc.
c/o Lloyd Phillips & Associates Ltd.
1827 Woodward Drive, Suite 109,
Ottawa, Ontario K2C 0P9

Attention: Mr. Lloyd Phillips

Subject: Terrain Analysis and Private Sewage Disposal System Impact Assessment
- Proposed Assembly Hall
The Hindu Temple of Ottawa Carlton, 4835 Bank Street, Ottawa, Ontario

Dear Mr. Phillips,

LRL Associates Ltd. (LRL) has conducted a Terrain Analysis and Private Sewage Disposal System Impact Study for the proposed Hindu Temple of Ottawa Carlton Assembly Hall to be constructed on the property located at 4835 Bank Street, Ottawa, Ontario (herein referred to as the ñSiteò). It is understood that it is proposed that a 2,000 m² Assembly Hall will be constructed at the eastern portion of the existing developed property which will have an available capacity of approximately 600 individuals, increasing the total occupancy of the site to an estimated 850.

The proposed Assembly Hall will be supplied by municipal water supply and a private septic as is the existing development on the Site.

The assessment was carried out to determine if the proposed development:

- Has soil conditions that are suitable for onsite sewage disposal; and
- Will not impair the use of groundwater resources on the Site or on adjacent lands.

The proposed sewage system will be designed for approximately 21.6 m^3/day of wastewater, as outlined below, which requires approval under Section 53 of the Ontario Water Resources Act (systems greater than 10,000 L/day). Large systems are subject to the Ontario Ministry of the Environment and Climate Changeôs (MOECC) Guideline B-7[1] which defines the acceptable levels of groundwater impacts of the system on the neighbouring properties.

[1] ñ*Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities*ò, Guideline B-7, April 1994

Guideline B-7 establishes the amount of contamination that may be discharged to the adjacent property that will have no more than a negligible effect on the present or potential ñreasonable useò of that property. For health-related parameters, the groundwater quality must not be degraded by an amount in excess of 25% of the difference between background and the Ontario Drinking Water Objectives. For the purposes of this Site, the levels of nitrates must be less than 2.5 mg/L at the limits of the property.

Reasonable current and potential uses shall be established with respect to Site specific soil and water bearing units in the subsurface and would apply to all of the ground lying beneath a particular property. Such a decision based on the present use of groundwater in the vicinity.

The assessment involved a desktop review of available information on the geology and hydrogeology of the Site and adjacent lands in addition to an instructive subsurface investigation (test pitting program). The Site is serviced by municipal water supply, however, neighbouring properties within 500 m of the Site were found to have records of supply wells present.

1 SITE AND AREA DESCRIPTION

The property is situated at the southern extents of the City of Ottawa at 4385 Bank Street. The property is legally described as Part Lot 22, Concession 5RF Gloucester Parts 1 & 2, 5R3156. The location of the subject site is shown in **Figure 1**. The Siteôs area is approximately 3.8 hectares (9.4 acres). The property is currently occupied by the Hindu Temple of Ottawa Carleton. The footprint of the existing temple building is approximately 1,060 m². The existing temple is located at the western extent of the Site with the associated septic systems to the north and south of the temple. Based on the previously prepared Use Permit, dated December 5, 1985, issued by the MOECC, and associated application, the existing septic systems were designed for 3,750 L/day, assuming occupancy of 250 individuals and the use of 15 L/day per individual.

The neighbouring land use is as follows:

- Bank street, followed by light industrial/commercial business to the west; and
- Vacant/treed land to the north, south and east.

The topography of the land is generally flat with an approximate elevation of 97 m above mean sea level.

These site features are shown in the **Figure 2**.

2 PROPOSED DEVELOPMENT

It is anticipated that an assembly hall be constructed at the eastern portion of the Site with the associated septic along the south of the proposed structure. Water supply will be obtained from municipal services. According to the City of Ottawa by-law requirements, and the proposed size of the new development and existing development (2,000 and 1,060 m², respectively), a total of 162 parking spaces will be required. No additional parking spaces are proposed as the current development on the Site is equipped with 173 parking spaces.

The proposed assembly hall is anticipated to include a dining area, a kitchen, lobby and two (2) halls. The proposed development will be equipped with a full basement as well.

The proposed development plan is shown in the **Figure 3**.

3 FIELDWORK

On May 8th, 2017, eight (8) test pits were advanced across the Site. The test pits were placed around the general perimeter of the Site so not to disrupt existing Site activities and services. The rational for the test pits were to determine the general upper soil and perched water conditions. The test pits were advanced using a backhoe operated by a local contractor (Yelle Excavation, Ottawa) and under direct supervision by LRL field staff. The locations of the test pits are presented in **Figure 4** with the Test Pit Logs included in **Appendix A**.

An open tube piezometer was installed in select test pits locations (TP1, TP3, TP5 and TP7) to allow for the groundwater elevation measurement and sampling of the perched water found in the overburden, herein referred to as groundwater. Groundwater samples were collected from each of the piezometers on May 8th, 2017, with the exception to TP5 which was found to have insufficient water available for sampling (i.e. dry). The samples collected were submitted for laboratory analyses for select nitrate species parameters. The laboratory Certificate of Analysis is included in **Appendix B**.

A soil sample from select test pits was submitted to LRL's material testing laboratory for sieve and hydrometer analyses. The sieve and hydrometer analysis certificates are included in **Appendix C**.

A ground surface elevation survey was carried out at each test pit location to obtain the elevation of the test pit ground surface and the piezometer stick-up. These elevations would aid in determining the groundwater elevations across the Site. An arbitrary benchmark was established at the top of the east arm of the hydrant located along the west of the southern entrance to the Site. The benchmark was given an elevation of 100.00 m. The elevations of summarized in **Table 1** and are presented in the Test Pit logs included in **Appendix A**.

4 TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

Local topography indicates that the inferred overburden groundwater flow direction is east towards the North Castor River. The nearest open water body to the Site is an unnamed tributary that flows into the North Castor River, approximately 1.1 km east of the Site.

Surficial soil deposit mapping[2] indicates that the overburden consists of till, plain with local relief less than 5 m. Bedrock mapping[3] indicates that the underlying bedrock consists of dolomite and limestone, part of the Oxford Formation.

The test pits completed across the Site were found to have a thin layer of topsoil over fill material which extended to depths between 0.7 and 1.5 m thick. The fill was underlain with silty sand in TP1. The fill layer generally extended to bedrock refusal, encounter at depths from 0.8 to 2.1 m bgs. Waste debris was observed in the fill material in TP2, TP3 and TP5, which included metal, tire debris and asphalt.

A representative till sample collected during the test pitting activities (TP3-6) was submitted for sieve analysis. The till sample was measured to be 39% Silt & Clay, 40% Sand, and 21% Gravel. A second representative till sample collected (TP1-3) was submitted for hydrometer

[2] St-Onge, D.A. (compilation), 2009: Surficial geology, lower Ottawa valley, Ontario-Quebec; Geological Survey of Canada, Map 2140A, scale 1:125000

[3] Harrison, J.E., 1976. Geological Survey of Canada, Generalized Bedrock Geology, Ottawa-Hull, Ontario and Quebec, Map 1508A, scale 1:125000.

analysis. The sample was measured to be 22% clay, 64% silt, 9% sand and 5% gravel. These results are presented in the sieve and hydrometer analysis certificates are included in **Appendix C** and are summarized in **Table 2**.

A search was conducted of the available well records from the MOECC Water Well Record Department. The search by UTM coordinates covered a 500 m radius from the site. The search returned records for twenty-three (23) wells. The well records are included in **Appendix D** and their locations are presented in **Figure 5**.

Review of the records of the wells within 500 m of the site retrieved revealed that the wells are drilled wells extending to depths between 8.2 and 67.1 m. The well records shows that that the geological conditions within 500 m are relatively similar, and consist generally of mixed till materials including sand, clay, gravel and boulders from 0 ï 8.0 m. Unidentified soil conditions, ñmuckòand ñsoilòwere found as overburden descriptions in a couple of well records, as noted in the table below. Bedrock conditions varied slightly between limestone, sandstone and occasionally shale. Bedrock starting depths also vary from 0.6 to 7.9 m.

The general subsurface conditions indicated in the well records within 500 m of the site are as follows:

MOE Well Number	Distance and Direction from Site (m)	Depth (m)	Overburden Details			Bedrock Details	Groundwater Encountered (m)	Static Water Level (m)	Type of water
			Sand/ Fill (m)	Clay/ Loam (m)	Gravel/ Till (m)	Bedrock			
1502181	210 N	14.0	- -	- -	0 ï 6.4	6.4- 14.0 (Limestone)	14.0	2.4	Fresh
7112950	485 N	52.7	--	0 ï 3.3	--	3.3 ï 52.7 (Limestone)	51.5	4.7	Unspecified
1533566	385 N	67.1	0 ï 2.1	--	--	2.1 ï 29.8 (Sandstone) 29.8 - 38.7 (Limestone) 38.7 - 67.1 (Sandstone)	65.8	4.8	Unspecified
1531693	385 N	67.1	--	--	0 ï 0.9	0.9 ï 67.1 (Sandstone)	62.7	9.1	Fresh
1502249	370 N	25.9	0 ï 1.2	--	--	1.2 ï 25.9 (Sandstone)	25.2	4.5	Unspecified
1502248	330 N	29.9	0 ï 0.3	0.3 ï 1.8	--	1.8 ï 29.9 (Sandstone)	24.3, 29.5	4.2	Fresh
1502246	335 N	24.4	--	--	0 ï 1.5	1.5 ï 24.4 (Sandstone)	9.1, 18.2, 30.1	1.5	Fresh
1517349	260 N	8.2	0 ï 2.4	--	--	2.4 ï 8.2 (Granite)	8.2	1.5	Fresh
1509925	215 N	19.2	--	--	0 ï 3.9 ñBouldersò	3.9 ï 19.2 (Sandstone)	18.2	0.6	Fresh
1502175	360 NW	18.3	0 ï 6.0	--	--	6.0 ï 18.3 (Sandstone)	18.3	3.0	Fresh
1502176	250 NM	13.7	- -	0 ï 5.4	- -	5.4 ï 13.7 (Limestone)	13.7	1.8	Fresh

1502179	50 W	27.1	- -	- -	0 ï 4.8	4.8- 7.62 (Limestone) 7.62 ï 27.1 (Sandstone)	27.1	6.1	Fresh
1513436	100 SW	15.0	- -	0 ï 3.6 ñSoilò	3.6 ï 4.8	4.8 ï 15 (Limestone)	14.6	4.3	Fresh
1502180	140 S	16.8	- -	0 ï 1.8 ñLoamò	- -	1.8 ï 16.8 (Limestone)	16.8	1.8	Fresh
1502177	195 S	18.2	0 ï 2.1	- -	2.1 ï 6.1	6.1 ï 18.2 (Sandstone)	18.2	1.8	Fresh
1512375	230 S	22.5	0 ï 2.7	- -	- -	2.7 ï 22.5 (Sandstone)	22.5	3.6	Fresh
1512265	245 S	14.6	- -	0 ï 0.9	- -	0.9 ï 14.6 (Limestone)	2.4, 6.4, 10.3	1.2	Fresh
1514664	220 SW	15.2	- -	- -	0 ï 3.9	3.9 ï 9.1 (Shale) 9.1 ï 38.1 (Limestone)	9.7, 16.7	6.1	Fresh
1516052	15 S	54.2	0 - 2.8	--	2.8 ï 7.9	7.9 ï 13.1 (Limestone) 13.1 ï 54.4 (Sandstone)	53.3	9.1	Fresh
1502178	310 SW	15.2	--	--	0 ï 5.4	5.4 ï 15.2 (Limestone)	14.6	3.9	Fresh
1510717	400 S	15.8	0 ï 1.8	--	--	1.8 ï 15.8 (Limestone)	15.2	2.1	Fresh
1514840	370 S	41.1	0 ï 0.9 ñTopsoilò	--	--	0.9 ï 41.1 (Limestone)	32.0	6.0	Fresh
1502250	370 S	24.1	--	0 ï 0.6 ñloamò	--	0.6 ï 19.8 (Sandstone) 19.8 ï 24.0 (Granite)	18.2, 24.0	6.0	Fresh

4.1 Groundwater from Test Pits

Table 3 summarizes the water quality analysis from the test pit piezometers for nitrates, nitrites, ammonia and total kjeldahl nitrogen (TKN). The Laboratory Certificate of Analysis are included in **Appendix B**.

Nitrites were not detected (<0.05 mg/L) in any groundwater samples collected. Nitrate levels were found to be 0.5 mg/L in TP3 and <0.1 mg/L in both TP1 and TP7, below the ODWS of 10 mg/L. Ammonia was measured to be 0.28, 0.39 and 1.66 mg/L in TP1, TP3 and TP7, respectively. There are no set ODWS for ammonia.

TKN values were reported as 78.1, 65.3 and 131 mg/L, in TP1, TP3 and TP7, respectively. There are no set ODWS for TKN; however, based on the measured groundwater elevations which suggest that the overburden groundwater flow direction is to the north, TP7 can be considered a background location. This would indicate that the background levels of TKN are higher than those downgradient (TP1 and TP3). TP7 is located along the extents of one of the existing septic beds on the property, and additionally, during the advancement of TP7, organic material including a tree stump was encountered. Both of which (septic and other organic decomposition) could contribute to the elevated levels of TKN across the central portion of the Site.

5 REASONABLE USE OF GROUNDWATER

According to Guideline B-7, reasonable current and potential uses shall be established with respect to specific soil and water bearing units in the subsurface and would apply to all of the ground lying beneath a particular property. A decision on the reasonable use is based on the present use of groundwater in the vicinity and its potential use. The current and potential uses of the aquifers identified in Section 4 are identified below.

5.1 Surficial Sand/Clay/Till Groundwater

The surficial sand/clay/till groundwater is unlikely to be used as a water supply based on the following:

- The Site and the adjacent properties are currently serviced by municipal water although water well records were identified in the area.
- Based on the well records reviewed and the shallow overburden conditions, no shallow wells were identified on the subject site or adjacent lands. Generally, the overburden conditions are not suitable for construction of a well.
- The buildings in this area are serviced by private septic systems; therefore, the current use of the overburden groundwater is for the attenuation of the septic system effluent.

5.2 Bedrock/Till Aquifer

Twenty-three (23) well records were available for properties located within a 500 m radius of the Site. The records indicate that all twenty-three (23) wells tap into bedrock aquifer. Although it is our understanding that municipal water is available for the neighbouring properties, it is unknown at this time if these wells are still present or continue to be used for potable purposes.

6 TERRAIN ANALYSIS AND SEPTIC DESIGN

The terrain analysis was conducted to demonstrate that the unconsolidated material on the Site is appropriate for the construction of an on-site subsurface sewage disposal system, with consideration taken regarding the existing installation.

The subsurface conditions indicated for the Site are considered suitable for a Class IV sewage disposal system with a fully raised leaching bed depending on the lot specific soil and groundwater conditions at the actual location of the proposed septic system leaching bed. The leaching bed should be constructed to conform to the specifications set out in the Ontario Building Code (OBC). As part of this assessment, an analysis was carried out to ensure that sufficient space exists at the Site for the construction of a third septic system in accordance with the OBC which will service the proposed assembly hall.

As previously mentioned, the existing temple is serviced with two (2) sewage disposal systems located at the north and south sides of the buildings, respectively. Both are constructed with 9,000 L fibreglass septic tanks and 8 runs of 13.3 m in length piping. The existing septic systems were designed for a combined sewage flow of 3,750 L/day, assuming occupancy of 250 individuals and the use of 15 L/day per individual.

As a conservative approach to determining the expected largest septic system envelope required to service the proposed assembly hall, a septic system envelope size was calculated assuming a fully raised bed with mantle, a percolation rate of 12 min/cm for the imported sand required and a daily sewage flow of 21,600 L as calculated below.

The daily sewage flow was calculated assuming 850 persons visit the Site daily, of which approximately 600 individuals will occupy the proposed Assembly Hall. In accordance with Schedule 8 of the OBC, it is assumed that each individual which occupies the Site will discharge 36 L/day into the septic system. This is the set value for an Assembly Hall equipped with a kitchen facility. Both the existing and the proposed buildings are equipped, or will be equipped with a kitchen. As previously mentioned, the existing Temple is serviced with two (2) septic systems located at the north and south sides of the buildings, each constructed with 9,000 L fibreglass septic tanks and 8 runs of 13.3 m in length piping. The existing septic systems were designed for a combined sewage flow of 3,750 L/day, assuming occupancy of 250 individuals and the use of 15 L/day per individual.

The total length of pipe required for the proposed septic bed for the proposed Assembly Hall, assuming imported fill, was calculated as approximately 1,300 m:

$$L = QT/200$$

where L = length of pipe (m)

Q = daily sewage flow for the proposed assembly hall (L/day)

T = percolation rate of the imported sand fill material (min/cm)

Therefore an area of approximately 2,090 m² is required for the septic bed assuming 87 pipes each having a length of 15 m and a spacing of 1.6 m between the pipes. A mantle of 15 m in length would be required along the down gradient portion of the bed. Based on the total coverage of the septic bed (raised portion and mantle plus a replacement area) would be approximately 5,440 m².

The Site has a total area of 38,000 m². However, when the area of the proposed and existing buildings, septic systems and other site features (parking facility), are taken into consideration, an area of approximately 32,000 m² is available for the installation of a septic system in accordance with the OBC to service an assembly hall with a design sewage flow of up to 21,600 L/day. The proposed site development plan is shown in **Figure 3**.

6.1 Average Daily Water Demand Variance

It should be noted that the average daily water demand presented in the Site Servicing Report prepared by LRL, dated September 18, 2017 was calculated for the entire property using Section 7 of the OBC. The demand was calculated assuming a worst case scenario where all fixtures at the property, both the existing and the proposed buildings, are turned on simultaneously at the applicable flowrate for each fixture is specified in the OBC. The purpose of this calculation is to size the piping required to service the site.

7 PRIVATE SEWAGE DISPOSAL SYSTEM IMPACT STUDY

The bedrock (sandstone, limestone, granite) aquifer has the potential to be used as a potable water source and therefore must be protected from the septic system effluent. The attenuation method was used to determine the impact of the effluent on this aquifer. The groundwater impact assessment addresses the ability of the land to attenuate the sewage effluent created by the development. Three (3) methods for conducting the assessment are outlined in MOECC's *Procedure D-5-4 Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* (1996):

- *Lot Size Consideration* for lot greater than 10 000 m^2 (1 hectare);
- *System Isolation Consideration* for areas where the septic system is hydrogeologically isolated from the potable water source; and
- *Contaminate Attenuation Consideration* for sites that do not meet the above two points.

Based on the review of the available information and site visit (above), bedrock was encountered at depths less than 2.0 m across the Site, therefore the Site is considered hydrogeologically sensitive with areas of thin soil over bedrock.

As mentioned above, the lot size is 38,000 m² with approximately 32,000 m² available for the installation of the proposed septic system. The lot size consideration for lots greater than 10 000 m^2 does not apply since the system is considered a large sewage disposal system based on the anticipated sewage demand of 25,350 L/day, including the existing system. Therefore, "***Contamination Attenuation***" was considered in this terrain analysis. The critical contaminant identified was nitrates.

No bedrock outcrops were encountered on the Site at the time of the study. As mentioned above in Section 4, a minimum of between 0.8 and 2.1 m of overburden was encountered over the bedrock across the Site. The overburden material generally consisted of a fill material in the test pits with a stratum of till (TP3) or silty sand (TP1) above the bedrock in areas. The receiving groundwater for the septic system effluent is identified as the fill, silty sand and till. This groundwater is not considered an aquifer as it was encountered at depths less than 2.0 m below grade. As stated in Section 5.1, this groundwater is not a suitable supply aquifer for potable water based on its assumed poor yield, poor quality, shallow depth and likely used for the attenuation of the Site's existing and the neighbouring properties septic's. This groundwater is considered a suitable attenuation zone because alternative sources of water are available (i.e. municipal water or bedrock aquifer).

The isolating feature between the receiving groundwater encountered in this overburden stratum and the bedrock aquifer is inferred to be the native till material. The well records within 500 m of the Site indicate that a minimum of 0.6 m of overburden is present. Due to the shallow depth to bedrock it is recommended that on-going monitoring be carried out to confirm the treated effluent nitrate levels as well as monitoring to ensure that reasonable use criteria of 2.5 mg/L for nitrates at the property boundaries are met. Further details of this recommendation are provided below in Section 10.

7.1 Contaminant Attenuation Method (Predictive Assessment)

The Contaminant Attenuation Method (Predictive Assessment) was used to determine the potential impact of the proposed on-Site septic systems at the boundary of the Site. This procedure assesses the risk that the individual on-site systems will cause the concentration of

the nitrate-nitrogen exceed 2.5 mg/L at the property boundaries. Dilution is the attenuation mechanism considered for nitrates, with precipitation being the only source of infiltration. The following parameters and assumptions were used in the nitrate attenuation calculations:

- The MOECCôs Design Guidelines for Sewage Works, Chapter 22: Large Subsurface Disposal Systems, defines the infiltration factor as 250 mm;
- The average background nitrate concentration was calculated to be 0.17 mg/L based on the laboratory analytical results of the groundwater samples collected from TP1, TP3 and TP7;
- Impervious areas (existing and proposed) were calculated to be of 3,168 m^2 for the buildings and 5,975 m^2 of paved driveway and parking areas; and
- That further treatment, dosage and filtration systems will be required as part of the septic design to have a nitrate concentration of 2.5 mg/L for the sewage.

Based on the total proposed sewage volume for the entire Site of 25,350 L/day, the existing lot size, soil conditions, a nitrate concentration of the sewage of 40 mg/L, the calculated levels of nitrates at the property limits is estimated as 22.5 mg/L. presented in the attached **Table 4A**. This is above the Procedure B-7 Reasonable Use limit of 2.5 mg/L at the properties boundaries. Based on the ñ*Contaminant Attenuation Method*ò the current lot size and soil conditions are not suitable to attenuate the nitrate impacts generated by the septic systems of the development in accordance with the Procedure B-7 requirements.

The above calculations are based on the current D-5-4 guideline which requires the use of 40 mg/L as the contaminant source as per Section 5.6.2 (a). A wastewater treatment system such as ñBionestò is an advanced tertiary treatment system which has reported reductions to the waste water effluent total nitrogen levels of 68.75%. These results were obtained through the BNQ 3680-910 certification for Bionest system models (SA-3 to SA-6). This particular system is approved by the OBC and the Building Materials Evaluation Commission of the Ontario Ministry of Municipal Affairs and Housing. Furthermore, Section 5.7 of the D-5-4 guideline states that the Ministry recognises ñthat as research continues, information and technologies may become available which warrant minor or substantial revisions to this guidelineò

It is our understanding that additional treatment and components to a ñBionestò systems (or equivalent), can reduce the nitrate level in sewage effluent from 40 mg/L to 2.5 mg/L (93.75% reduction). For the purpose of this report, we will refer to this as an advanced tertiary system. It is understood that as part of the sewage design for this Site, which is not LRLôs mandate at this time, sufficient documentation will be provided to support this. Based on a treated nitrate level in the proposed system effluent of 2.5 mg/L, the proposed assembly hall the nitrogen levels at the property boundaries is reduced to 4.5 mg/L, which is still above the reasonable use limit of 2.5 mg/L. The calculations are presented in **Table 4B**.

The nitrates can be further reduced if a standard Bionest system is added to the two (2) existing septic systems with a reported reduction from 40 mg/L to 12.5 mg/L. This is in conjunction with advanced tertiary system as noted above with a reported reduction from 40 mg/L to 2.5 mg/L. Based on this configuration, the calculated nitrate level at the property boundary is 2.2 mg/L, below the Procedure B-7 Reasonable Use limit of 2.5 mg/L at the property limits. The calculations are presented in **Table 4C**.

8 DISCUSSION

Based on a review of geological maps and MOECC well record database and conducting a test pitting program, two (2) aquifers/groundwater zones were identified: within the overburden (fill,

sand, till) and within the bedrock (limestone, sandstone, granite) at depths ranging from 8.2 to 65.8 m in depth.

According to Guideline B-7, reasonable current and potential uses shall be established with respect to specific soil and water bearing units in the subsurface and would apply to all of the ground lying beneath a particular property. Even though the site is service by municipal water, the bedrock aquifer's potential use as a potable water source must be considered. The overburden groundwater stratum was not considered a potential source of potable water since it is too shallow for the proper construction of a dug well and it is currently used to attenuate the septic system effluent the Site, and likely neighbouring properties. The bedrock aquifer has the potential to be used as a water supply source based on the well records reviewed.

Since the bedrock aquifer has the potential to be used as a potable water source it must be protected from the septic system effluent. The system contamination attenuation method was used to determine the impact of the effluent on this aquifer. The isolating feature, and attenuation zone, between the receiving groundwater stratum and the bedrock aquifer is the overburden (fill, till, clay) which separates them. This layer is found to have a thickness of at least 0.6 m.

Based on the hydrogeological assessment sensitive conditions are present on the site due to thin overburden. The overburden generally consists of fill to bedrock, with till or silty sand observed at two (2) of the test pits. Due to the thin soils and sensitive site conditions it is recommended that the leaching bed of the proposed system be fully raised and an appropriate groundwater monitoring program be implemented. As a precautionary measure, the on-going monitoring program should include the bedrock aquifer.

9 CONCLUSION

Based on our review of available information and the results of the groundwater sampling and laboratory analytical programs, we conclude the following:

1. Sufficient area exists on the property for the installation of a septic system in accordance with the OBC to service the proposed Assembly Hall with a design sewage flow of up to 21,600 L/day.
2. In accordance with the D-5-4 guideline, without pre-treatment the lot area of the Site is not of sufficient size to attenuate the impacts of the proposed septic system based on the ñ***Contaminant Attenuation Method***ò using 40 mg/L as the contaminant source as per Section 7.
3. Pre-treatment of the sewage from the existing sewage disposal systems with a Bionest system model (SA-3 to SA-6) certified treatment system, which has a documented and measured output of 12.5 mg/L and pre-treatment of the proposed system with an augmented Bionest system with a reported output of 2.5 mg/L yields a calculated nitrate concentration at the property line of 2.2 mg/L, based on the ***"Contaminant Attenuation Method"***.
4. Records of domestic wells were retrieved within 500 m of the site. The potable water source of these wells is the bedrock aquifer. A thin layer of either clay, gravel or till, with some sand in areas, being between 0.9 and 7.6 m thick over bedrock.

10 RECOMMENDATIONS

1. Pre-consultation with the Ontario Ministry of the Environment and Climate Change is recommended at the planning stage of this project with respect to the proposed septic design and treatment options.

2. It is recommended that a plan showing which properties within 500 m of the Site are serviced with municipal water are obtained from the City of Ottawa. If properties without municipal services are identified, it is recommended that the property owners be contacted to confirm if they are supplied by a private well and if so, obtain details regarding their well, where possible. It is recommended that the findings be provided at the time of an Application for Site Plan Control.
3. The daily volume, calculated using the 36 L/day per individual value set out in the OBC, is in excess of 10,000 L. Therefore, it is recommended that an application for an Environmental Compliance Approval be submitted to the MOECC at the time of an Application for Site Plan Control. Note that pre-consultation with the MOECC is required prior to submission.
4. The septic system should be placed at least 15 m from any drilled wells/water service and 30 m from any dug well. It is recommended that the water table be surveyed prior to installation. The 20 m setback from the normal high water mark of the identified stream east of the proposed development footprint.
5. The treatment system required for septic should be designed accordingly and monitored/maintained.
6. It is recommended that groundwater monitoring wells be installed in compliance with *O. Reg. 903: Wells* to aid in the interpretation of groundwater flow direction and monitoring potential impacts to the identified supply aquifers. The findings would be submitted at the time of the Application for Site Plan Control.
7. It is recommended that a geodetic benchmark be used for further investigations on the site, including the proposed monitoring wells and groundwater elevations.
8. Due to the thin soils and sensitive site conditions it is recommended that the leaching bed of the proposed system be fully raised and an appropriate groundwater monitoring program are implemented.

11 LIMITATIONS

The findings contained in this report are based on data and information collected during the Terrain Analysis of the subject property conducted by LRL Associates Ltd. The conclusions and recommendations are based solely on site conditions encountered at the time of our fieldwork on May 8th, 2017, supplemented by historical information and data obtained as described in this report. The information presented in this report represents the groundwater conditions at the locations sampled. Due to natural variations in geological conditions, no inference is made to the soil or groundwater conditions between sampling points. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Associates Ltd. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Associates Ltd. has relied in good faith on information provided by individuals as noted in this report. We assume that the information provided is

factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

Yours truly,
LRL Associates Ltd.

Jessica Arthurs
Senior Environmental Technician

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2018/Oct/19
PROVINCE OF ONTARIO

Encl.

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Figure 3 – Proposed Development Plan
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FIGURES

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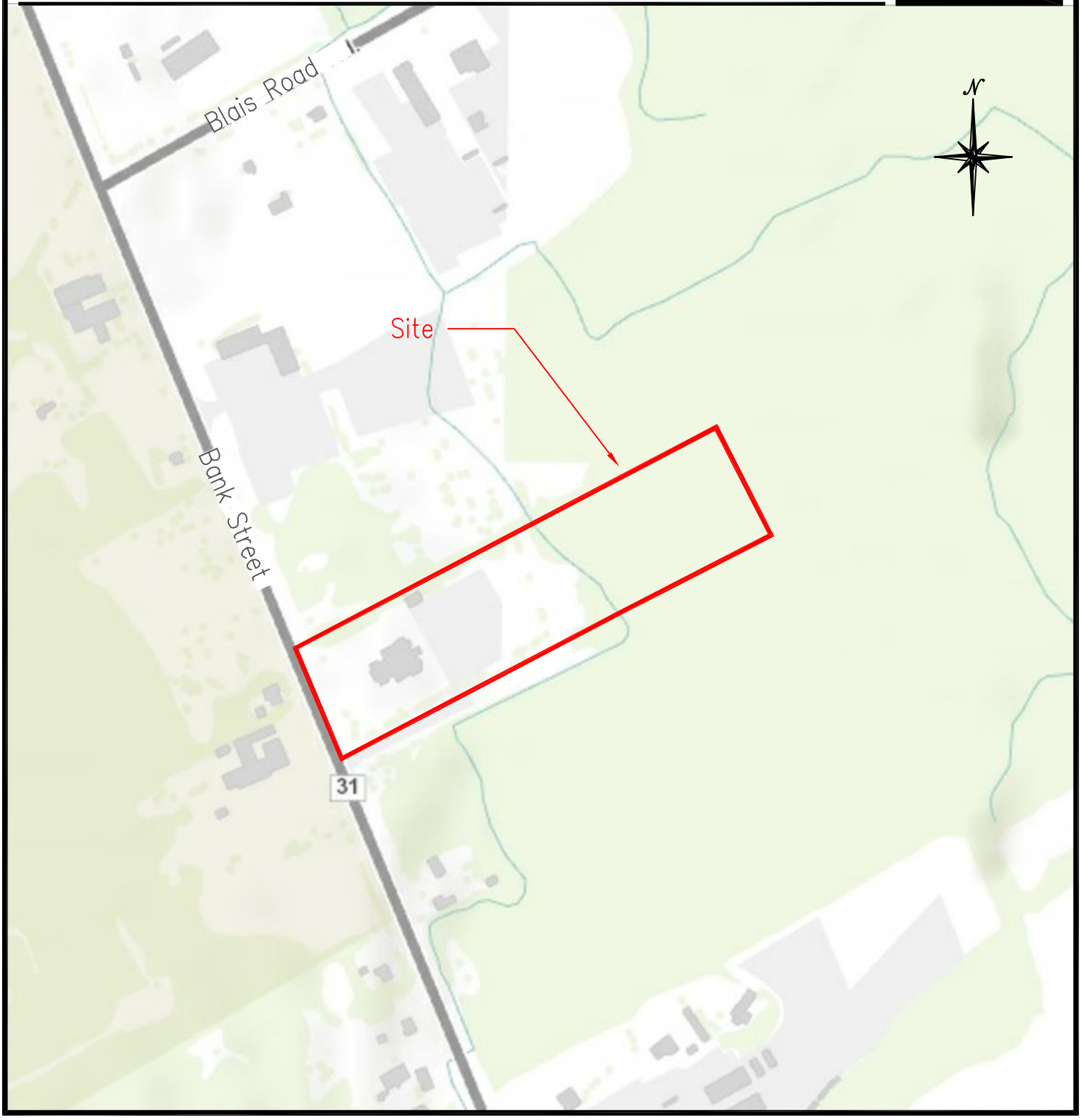
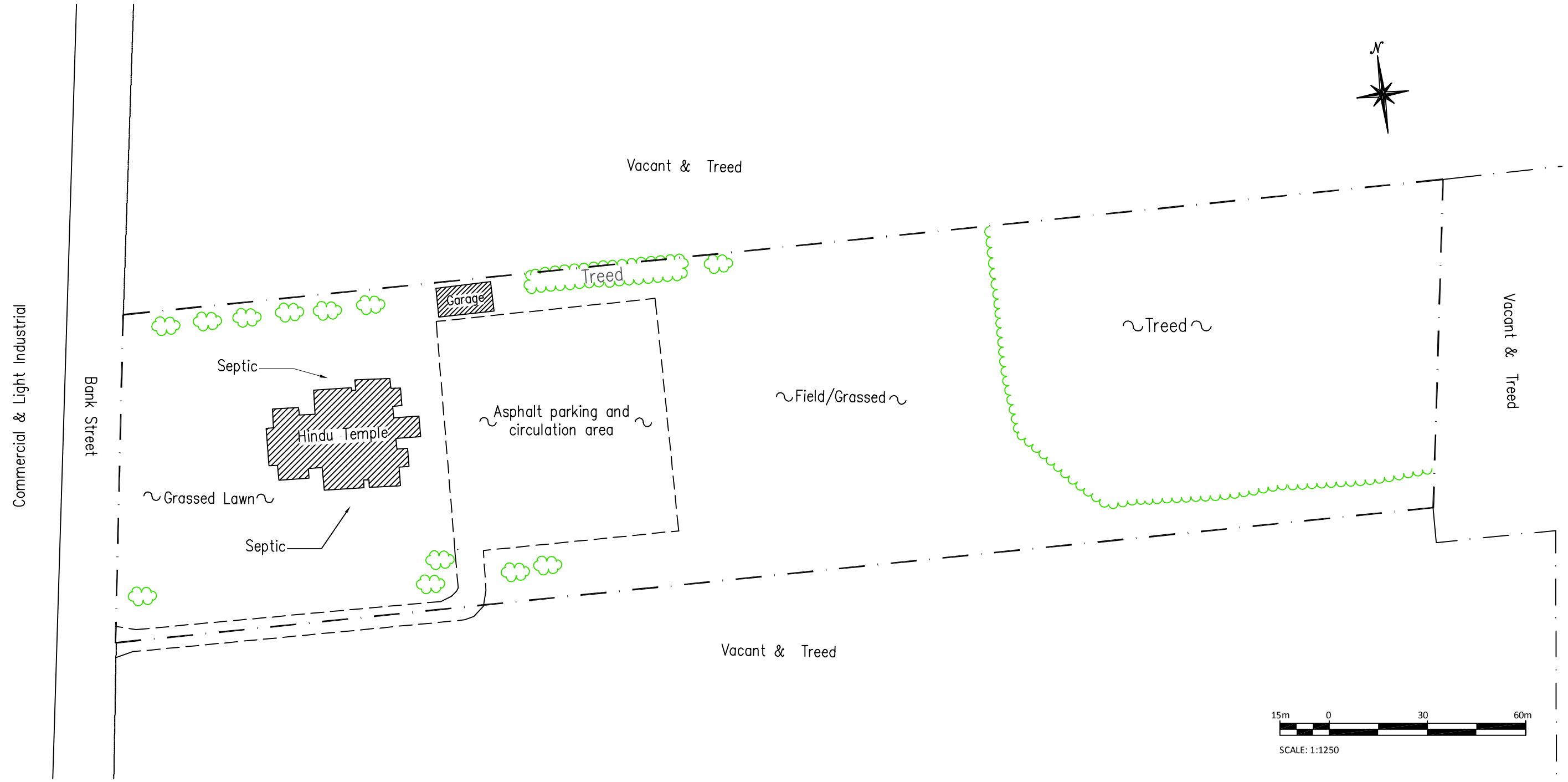
PROJECT
TERRAIN ANALYSIS AND PRIVATE SEWAGE DISPOSAL SYSTEM IMPACT STUDY
PROPOSED ASSEMBLY HALL
4835 BANK STREET, OTTAWA, ONTARIO

DRAWING TITLE
SITE LOCATION
(NOT TO SCALE)
SOURCE: GEOOTTAWA

CLIENT	DATE	PROJECT	
THE HINDU TEMPLE OF OTTAWA CARLTON	JANUARY 2018	170132	FIGURE1





LEGEND

- Existing Building
- Division between various surface materials
- Property Line
- Tree Line
- Tree

No.	REVISIONS	BY	DATE
01	ISSUED FOR REVIEW	A.S	05/18/17

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CLIENT
THE HINDU TEMPLE OF OTTAWA CARLTON

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	A.S	M.W

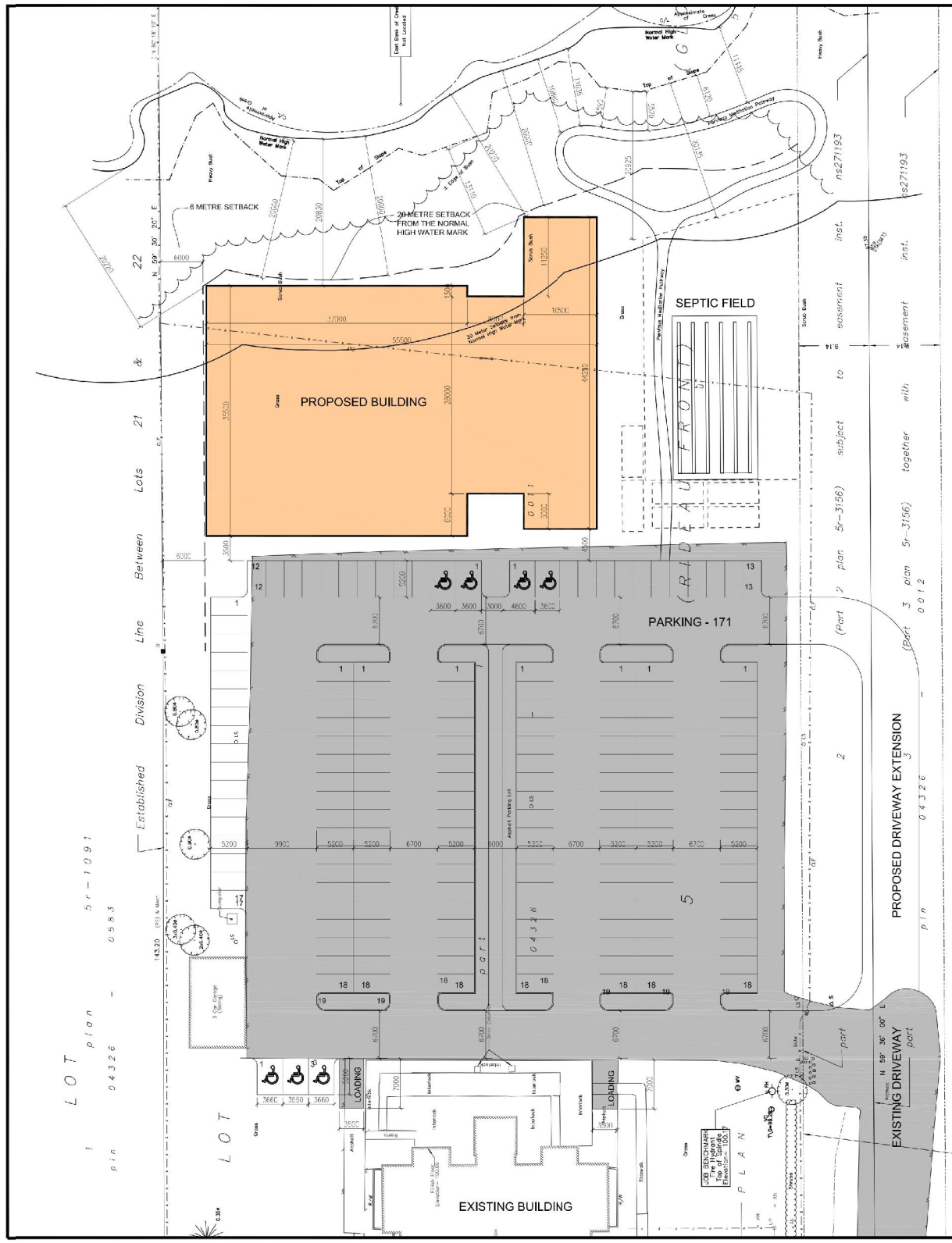
PROJECT
TERRAIN ANALYSIS AND PRIVATE SEWAGE DISPOSAL SYSTEM IMPACT STUDY - PROPOSED ASSEMBLY HALL
4835 BANK STREET, OTTAWA, ONTARIO

DRAWING TITLE
SITE PLAN

PROJECT NO.
170132

DATE
JANUARY 2018

FIGURE2



2 ENLARGED SITE PLAN
SCALE 1:300

Site Information
Address: 4835 Bark Street-Ottawa
Legal Description: Part of Lot 22
Concession 5 (Rideau Front)
Ottawa ON
Owners: Hindu Temple of Ottawa-Carleton

Current Zoning: RI5, Rural Institutional Subzone 5
Proposed Zoning: RI5 (xxxr)

Site Area: 4.048 ha
Existing Building Footprint: ± 1,168 m2
Proposed Building Footprint: ± 2,000 m2
Proposed Assembly GFA: ± 1200 m2
Total Building Area: ± 3,168 m2

Site Area = 4.048 Hectares (40480 m2)
Total Lot Coverage: 7.82%

Landscaped Area = 1649.53 m2
Paved Area = 489€.17 m2

Hatched area shows extent of existing paving

Hatched area shows extent of new building

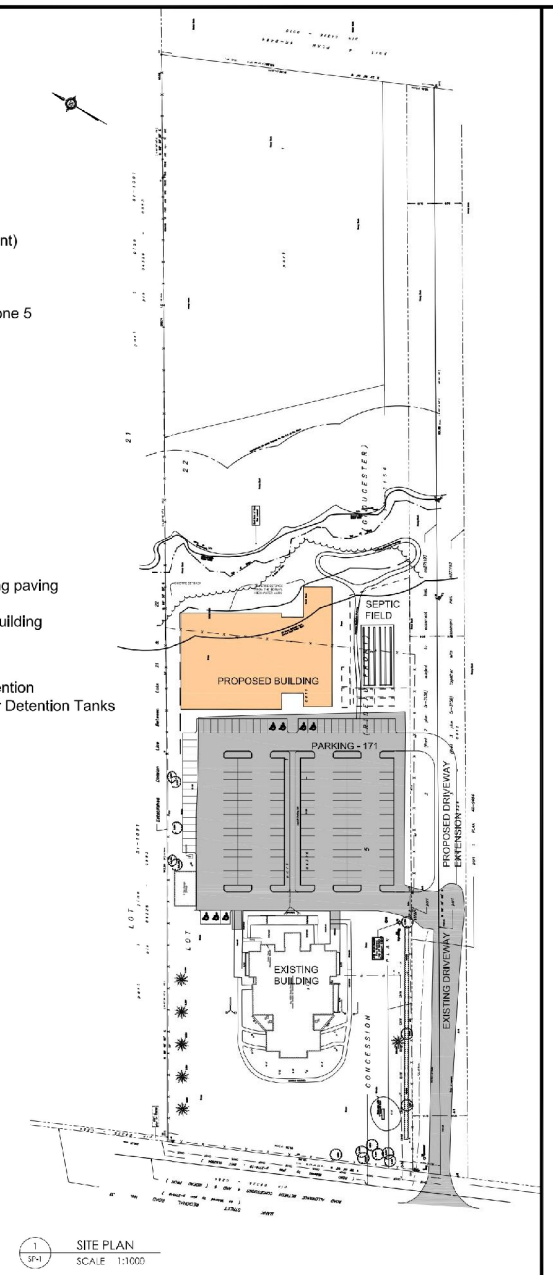
Proposed Stormwater Management:
- Proposec Rooftop Stormwater Detention
- Proposec Underground Stormwater Detention Tanks Beneath the Parking lot

Existing Required Parking:
42 vehicle spaces,
2 accessory residential spaces,
1 loading space,
0 bicycle spaces,
0 barrier-free spaces

Proposed Requirec Parking:
120 vehicle spaces,
0 accessory residential spaces,
1 loading spaces,
0 bicycle spaces,
2 barrier-free spaces

TOTAL Required Parking:
162 vehicle spaces,
2 accessory residential spaces,
2 loading spaces,
0 bicycle spaces,
2 barrier-free spaces

TOTAL Provided and Proposed Parking:
162 vehicle spaces,
2 accessory residential spaces,
2 loading spaces,
0 bicycle spaces,
7 barrier-free spaces



1 SITE PLAN
SCALE 1:1000

GENERAL NOTES

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

No.	Revision/Issue	Date
5	ISSUED FOR REVISION/ZONING APPLICATION	JAN/31/2018
4	ISSUED FOR REVIEW	DEC/04/2017
3	ISSUED FOR ZONING CHANGE APPLICATION	OCT/26/2017
2	ISSUED FOR CLIENT REVIEW	OCT 03
1	ISSUED FOR CLIENT REVIEW	SEPT 19

NOTE:
FOR LANDSCAPE REFER TO LANDSCAPE DRAWING

OWNER

ARCHITECT
VECTOR DESIGN ARCHITECTS
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TELEPHONE: (613) 421-9806
EMAIL: vecarch@gmail.com

PROJECT AND LOCATION
PROPOSED ASSEMBLY HALL - HINDU TEMPLE,
4835 BANK STREET,
OTTAWA, ONTARIO

TITLE OF DRAWING
CONCEPT SITE PLAN

JOB NUMBER
17033

DATE 2017 09	DWG NUMBER SP-1 R2
SCALE AS NOTED	
DRAWN BY SJK	

No.	REVISIONS	BY	DATE
01	ISSUED FOR REVIEW	J.A.	01/31/18

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CLIENT
THE HINDU TEMPLE OF OTTAWA CARLETON

DESIGNED BY:	DRAWN BY:	APPROVED BY:
VDC	VDC	

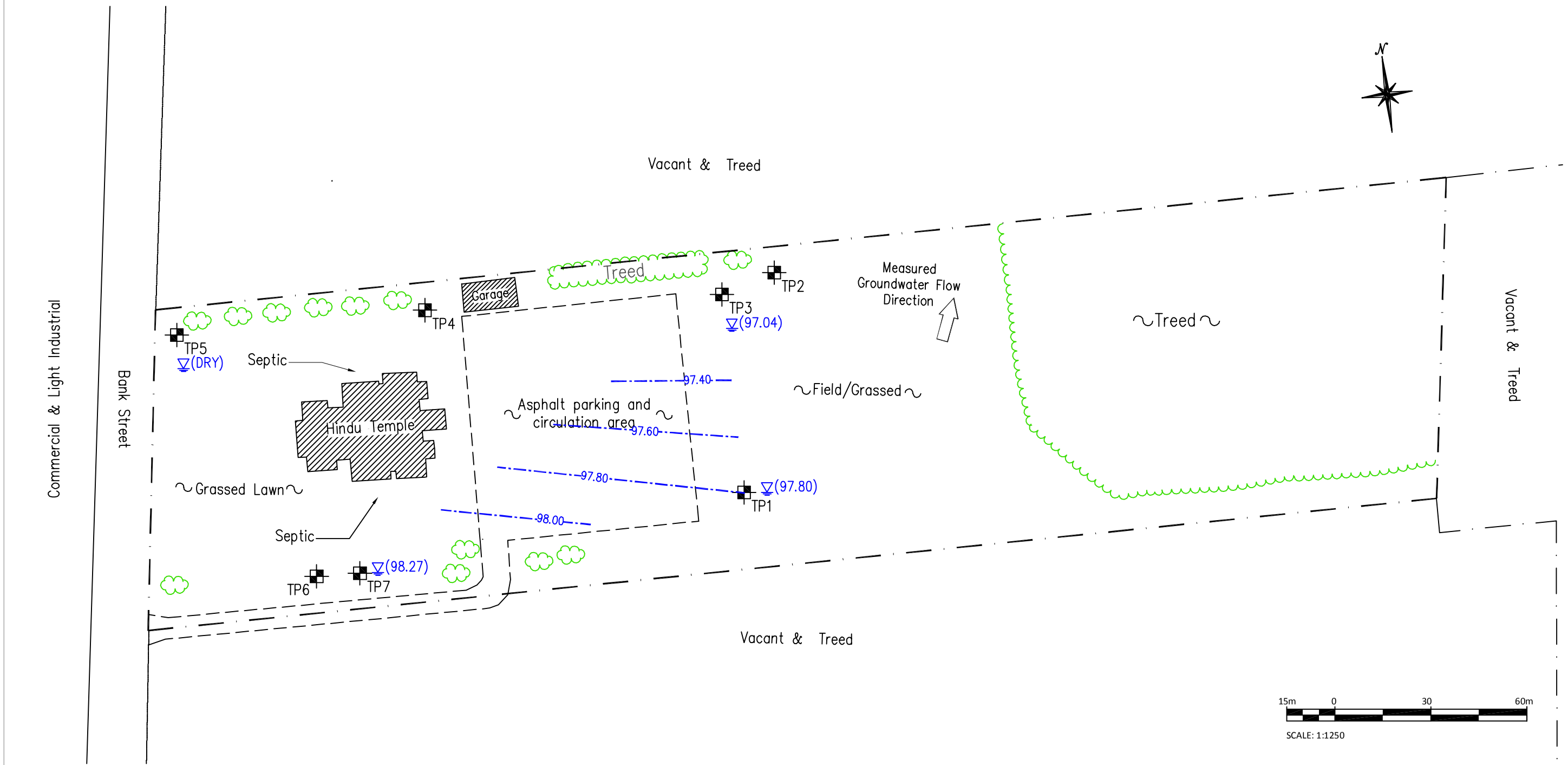
PROJECT
TERRAIN ANALYSIS AND PRIVATE SEWAGE DISPOSAL SYSTEM STUDY - PROPOSED ASSEMBLY HALL
4835 BANK STREET, OTTAWA, ONTARIO

DRAWING TITLE
PROPOSED SITE LAYOUT

PROJECT NO.
170132

DATE
JANUARY 2018

FIGURE3



LEGEND

- Existing Building
- Division between various surface materials
- Property Line
- Tree Line
- Tree
- TP99 Test Pit (May 2017)
- (99.99) Groundwater Elevation (May 8, 2017)
- Groundwater Contour Line

No.	REVISIONS	BY	DATE
01	ISSUED FOR REVIEW	A.S	05/18/17

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CLIENT
THE HINDU TEMPLE OF OTTAWA CARLTON

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	A.S	M.W

PROJECT
TERRAIN ANALYSIS AND PRIVATE SEWAGE DISPOSAL SYSTEM IMPACT STUDY - PROPOSED ASSEMBLY HALL
4835 BANK STREET, OTTAWA, ONTARIO

DRAWING TITLE
TEST PIT LOCATIONS, GROUNDWATER ELEVATIONS AND GROUNDWATER CONTOUR LINES

PROJECT NO.
170132

DATE
JANUARY 2018

FIGURE4

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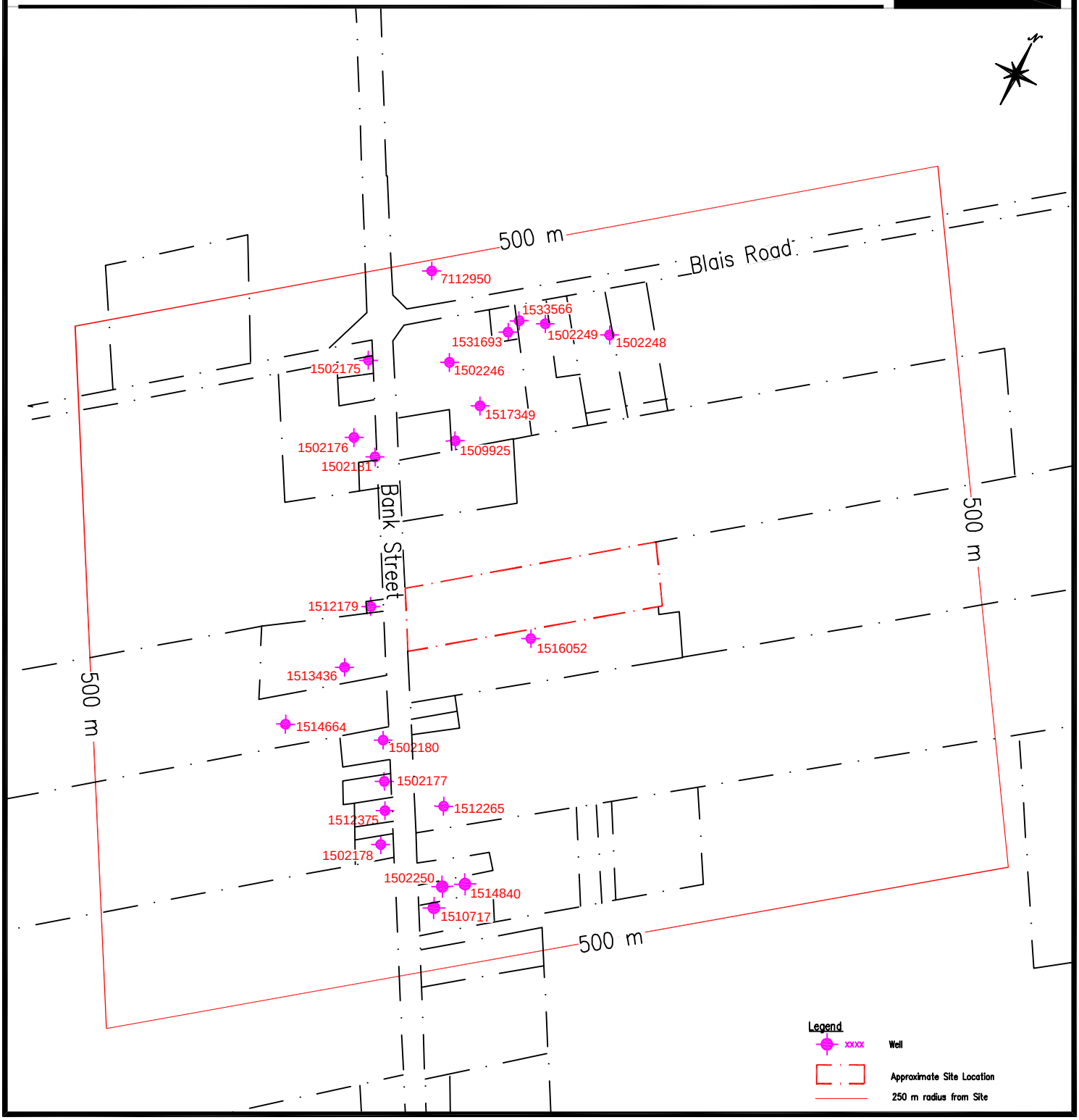
PROJECT
TERRAIN ANALYSIS AND PRIVATE SEWAGE DISPOSAL SYSTEM IMPACT STUDY
PROPOSED ASSEMBLY HALL
4835 BANK STREET, OTTAWA, ONTARIO

DRAWING TITLE
WELL LOCATIONS
ONTARIO WELL RECORDS WITHIN 500 M OF THE SITE
(NOT TO SCALE)

CLIENT	DATE	PROJECT	
THE HINDU TEMPLE OF OTTAWA CARLTON	JANUARY 2018	170132	FIGURE 5



TABLES

Table 1
Summary of Groundwater Elevations in Test Pits
Terrain Analysis and Private Sewage Disposal System Impact Study - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

Test Pit	Ground Surface Elevation[1] (m)	Reference Elevation[2] (m)	Depth To Water Table (m)		Groundwater Elevation (m)
			Reference Point	Ground Surface	
TP1	98.21	99.15	1.35	0.41	97.80
TP2	97.09	--	--	--	--
TP3	97.75	98.98	1.94	0.71	97.04
TP4	99.54	--	--	--	--
TP5	98.78	99.02	DRY	--	--
TP6	99.38	--	--	--	--
TP7	99.60	100.79	2.52	1.33	98.27

NOTES
[1] Elevations are based off of a temporary benchmark established at the top of the east arm of the fire hydrant along the southof the Site (100.00 m).
[2] Reference elevation is top of piezometer.

Table 2
Summary of Sieve & Hydrometer Analyses
Terrain Analysis and Private Sewage Disposal System Impact Study - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

		Sample Gradation[1] Percent Particles in Each Fraction						
			Sand					
		Gravel	Coarse	Medium	Fine	Silt	Clay	
Sample	Depth (m)	>4.75 mm	2.0 - 4.75 mm	425 µm - 2.0 mm	75 - 425 µm	2 - 75 µm	< 2µm	Soil Texture Classification
TP1-3	1.8 - 2.0	4.8	1.2	1.8	6.5	63.8	22.0	Silt Loam
TP3-6	1.4 - 1.6	21.3	7.0	12.7	20.1	39.0		Fine Silty Sand

NOTES:
[1] Unified Soil Classification System

Table 3
Summary of analysis of water samples collected from the test pits.
Terrain Analysis and Private Sewage Disposal System Impact Study - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

Parameter	Units	MRL	Ontario Drinking Water Standards		Sample		
			Standard	Type	TP1	TP3	TP7
Sample Date (d/m/y)					**05/08/2017**	**05/08/2017**	**05/08/2017**
Ammonia	mg/L	0.01			0.28	0.39	1.66
Total Kjeldahl Nitrogen	mg/L	0.1			78.1	65.3	131
Nitrate as N	mg/L	0.1	10	MAC	<0.1	0.5	<0.1
Nitrite as N	mg/L	0.05	1	MAC	<0.05	<0.05	<0.05

NOTES
MAC Maximum Acceptable Concentration
MRL Minimum Reportable Limit

Table 4A
Nitrate Attenuation Calculations (Standard Disposal System)
Terrain Analysis - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

1. Area Available for Infiltration

Number of Lots		n	1	
Approximate footprint of existing temple		H	1068	m^2
Approximate footprint of existing garage		H	100	m^2
Approximate footprint of propsed assembly hall		H	2000	m^2
Approximate area of paved driveways and parking (proposed and existing)		d[4]	5975	m^2
Approximate Length of Road		L	0	m
Approximate Width of Road		w	0	m
Total Area of Property			38000	m^2
Impervious Area			9143.0	m^2
Roads	l x w	0 m^2		
Driveway	n x d	5975 m^2		
Buidling	n x H	3168 m^2		
Area available Infiltration		A	28,857	m^2

2. Nitrate Diluation Calculations

Nitrate Concentration of Infiltration	C_i	0.0	mg/L[6]
Site Infiltration	$Q_i = A*PI$	7214	m^3
Daily Sewage Volume - Existing	$Q_{d,1}$	3.75	m^3
Maximum Yearly Sewage Volume - Existing (water)	$Q_{e,1}=365*n*Q_d$	1369	m^3
Nitrate Concentration in Sewage - Existing	$C_{e,1}$	40	mg/L
Daily Sewage Volume - Proposed New Development	$Q_{d,2}$	21.6	m^3
Maximum Yearly Sewage Volume (water) - Proposed New Development	$Q_{e,2}=365*n*Q_d$	7884	m^3
Nitrate Concentration in Sewage - Proposed New Development	$C_{e,2}$	40	mg/L
Maximum Allowable Nitrate Concentration at Boundary	C_m	2.5	mg/L
Increase in Nitrate Concentration at Boundaries	$C = (Q_{e,1}C_{e,1}+Q_{e,2}C_{e,2}+Q_iC_i)/(Q_{e,1}+Q_{e,2}+Q_i)$	22.5	mg/L

NOTES

1 Table 2: Infiltration Factors, *Hydrogical Technical Information Requirements for Land Development Applications*, Ministry of the Energy and Environment, April 1995.

2 Thornthwaite and Mather's (1957) Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance.

3 Moisture surplus for data for Mason Anger (Environment Canada Meteorological Service of Canada, 2010).

4 Area based on proposed development plan

5 As per *Technical Guideline for Individual On-Site Sewage Systems: Water Quality and Impact Risk Assessment*, Ministry of the Energy and Environment, August 1996.

6 Average of nitrate concentrations from test pits water sample collected on May 8, 2017

Table 4B
Nitrate Attenuation Calculations (Tertiary Disposal System)
Terrain Analysis - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

1. Area Available for Infiltration

Number of Lots		n	1	
Approximate footprint of existing temple		H	1068	m^2
Approximate footprint of existing garage		H	100	m^2
Approximate footprint of propsed assembly hall		H	2000	m^2
Approximate area of paved driveways and parking (proposed and existing)		d[4]	5975	m^2
Approximate Length of Road		L	0	m
Approximate Width of Road		w	0	m
Total Area of Property			38000	m^2
Impervious Area			9143.0	m^2
Roads	l x w	0 m^2		
Driveway	n x d	5975 m^2		
Building	n x H	3168 m^2		
Area available Infiltration		A	28,857	m^2

2. Nitrate Diluation Calculations

Nitrate Concentration of Infiltration	C_i	0.0	mg/L[6]
Site Infiltration	$Q_i = A*PI$	7214	m^3
Daily Sewage Volume - Existing	$Q_{d,1}$	3.75	m^3
Maximum Yearly Sewage Volume - Existing (water)	$Q_{e,1}=365*n*Q_d$	1369	m^3
Nitrate Concentration in Sewage - Existing	$C_{e,1}$	40	mg/L
Daily Sewage Volume - Proposed New Development	$Q_{d,2}$	21.6	m^3
Maximum Yearly Sewage Volume (water) - Proposed New Development	$Q_{e,2}=365*n*Q_d$	7884	m^3
Nitrate Concentration in Sewage - Proposed New Development	$C_{e,2}$	2.5	mg/L
Maximum Allowable Nitrate Concentration at Boundary	C_m	2.5	mg/L
Increase in Nitrate Concentration at Boundaries	$C = (Q_{e,1}C_{e,1}+Q_{e,2}C_{e,2}+Q_iC_i)/(Q_{e,1}+Q_{e,2}+Q_i)$	4.5	mg/L

NOTES

1 Table 2: Infiltration Factors, *Hydrogical Technical Information Requirements for Land Development Applications*, Ministry of the Energy and Environment, April 1995.

2 Thornthwaite and Mather's (1957) Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance.

3 Moisture surplus for data for Mason Anger (Environment Canada Meteorological Service of Canada, 2010).

4 Area based on proposed development plan

5 As per *Technical Guideline for Individual On-Site Sewage Systems: Water Quality and Impact Risk Assessment*, Ministry of the Energy and Environment, August 1996.

6 Average of nitrate concentrations from test pits water sample collected on May 8, 2017

Table 4C

Nitrate Attenuation Calculations (Advanced Tertiary System)

Terrain Analysis - Proposed Assembly Hall
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

1. Area Available for Infiltration

Number of Lots		n	1	
Approximate footprint of existing temple		H	1068	m^2
Approximate footprint of existing garage		H	100	m^2
Approximate footprint of propsed assembly hall		H	2000	m^2
Approximate area of paved driveways and parking (proposed and existing)		d[4]	5975	m^2
Approximate Length of Road		L	0	m
Approximate Width of Road		w	0	m
Total Area of Property			38000	m^2
Impervious Area			9143.0	m^2
Roads	l x w	0 m^2		
Driveway	n x d	5975 m^2		
Building	n x H	3168 m^2		
Area available Infiltration		A	28,857	m^2

2. Nitrate Diluation Calculations

Nitrate Concentration of Infiltration	C_i	0.0	mg/L[6]
Site Infiltration	$Q_i = A*PI$	7214	m^3
Daily Sewage Volume - Existing	$Q_{d,1}$	3.75	m^3
Maximum Yearly Sewage Volume - Existing (water)	$Q_{e,1}=365*n*Q_d$	1369	m^3
Nitrate Concentration in Sewage - Existing	$C_{e,1}$	12.5	mg/L
Daily Sewage Volume - Proposed New Development	$Q_{d,2}$	21.6	m^3
Maximum Yearly Sewage Volume (water) - Proposed New Development	$Q_{e,2}=365*n*Q_d$	7884	m^3
Nitrate Concentration in Sewage - Proposed New Development	$C_{e,2}$	2.5	mg/L
Maximum Allowable Nitrate Concentration at Boundary	C_m	2.5	mg/L
Increase in Nitrate Concentration at Boundaries	$C = (Q_{e,1}C_{e,1}+Q_{e,2}C_{e,2}+Q_iC_i)/(Q_{e,1}+Q_{e,2}+Q_i)$	2.2	mg/L

NOTES

1 Table 2: Infiltration Factors, *Hydrogical Technical Information Requirements for Land Development Applications* , Ministry of the Energy and Environment, April 1995.

2 Thornthwaite and Mather's (1957) Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance.

3 Moisture surplus for data for Mason Anger (Environment Canada Meteorological Service of Canada, 2010).

4 Area based on proposed development plan

5 As per *Technical Guideline for Individual On-Site Sewage Systems: Water Quality and Impact Risk Assessment* , Ministry of the Energy and Environment, August 1996.

6 Average of nitrate concentrations from test pits water sample collected on May 8, 2017

APPENDIX A

Test Pit Logs

Test Pit Log: TP1

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number
0 / 0	Ground Surface	98.21		
	TOPSOIL Sandy, dark brown, dry.	0.00 98.01		
1	**FILL** Sandy clay, dark brown, dry.	0.20		
2				
3 / 1	**Silty Sand** Trace clay, with clay seam from 1.7 to 1.8 m bgs, brown, dry. Sieve analysis completed.	97.31 0.90		1
4				
5				2
6 / 2				3
7	End of Test Pit Refusal over inferred bedrock.	96.11 2.10		
8				

Shear Strength (kPa): 50, 150

Water Content (%): 25, 50, 75

Liquid Limit (%): 25, 50, 75

Water Level (Standpipe or Open Excavation): 0.4 m bgs (08/05/17)

Easting: N/M | **Northing:** N/M

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 98.21 | **Top of Riser Elev.:** 99.15

Excavation Width: 1.2 m | **Excavation Length:** 1.5 m

NOTES:

BGS- Below Ground Surface

Test Pit Log: TP2

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

SUBSURFACE PROFILE		SAMPLE DATA					
Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number	Shear Strength (kPa) 50 150	Water Content (%) 25 50 75 / Liquid Limit (%) 25 50 75	Water Level (Standpipe or Open Excavation)
0 / 0	Ground Surface	97.09					
	FILL Silty sand with some clay, brown, saturated with water infiltration at 0.4 m bgs. Buried metal structure/waste at approximately 0.9 m bgs.	0.00					
		96.19		4			
3 / 1	End of Test Pit	0.90					
6 / 2							
8							

Easting: N/M | **Northing:** N/M

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 97.09 | **Top of Riser Elev.:** --

Excavation Width: 1.2 m | **Excavation Length:** 1.5 m

NOTES:

Test pit terminated at 0.9 meters due to volume of water in pit.
BGS- Below Ground Surface

Test Pit Log: TP3

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number	Shear Strength (kPa) 50 150	Water Content (%) 25 50 75 / Liquid Limit (%) 25 50 75	Water Level (Standpipe or Open Excavation)
0 / 0	Ground Surface	97.75					
	TOPSOIL Sandy loam, dark brown, dry. Brick debris found in top 0.2 m bgs.	0.00					
		97.55 0.20					
1	**FILL** Sandy silt, trace boulders, brown, dry. Tire debris found at approximately 0.8 m bgs.			5			
2							
		96.95 0.80					
3 / 1	**TILL** Silty sand, trace gravel, cobbles and boulders, brown, dry. Sieve analysis completed.						
4							
5				6			
		96.05 1.70					
6 / 2	End of Test Pit Refusal at 1.7 m bgs over inferred bedrock.						
7							
8							

0.71 m bgs (08/05/17)

Easting: 0454091 **Northing:** 5017670

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 97.75 **Top of Riser Elev.:** 98.98

Excavation Width: 1.2 m **Excavation Length:** 1.5 m

NOTES:

BGS- Below Ground Surface

Test Pit Log: TP4

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number
0 / 0	Ground Surface	99.54		
	TOPSOIL Silty loam, trace clay,dark brown, dry.	0.00		
1		99.04		
	FILL Silty sand, trace cobbles and gravel, light brown, dry. Changing to dark brown sandy fill with trace boulders at approximately 0.8 m bgs.	0.50		7
3 / 1				8
4		98.14		
	End of Test Pit Refusal at 1.4 m bgs over inferred bedrock or large concrete structure.	1.40		
5				
6 / 2				
7				
8				

Shear Strength (kPa): 50 150

Water Content (%): 25 50 75

Liquid Limit (%): 25 50 75

Water Level (Standpipe or Open Excavation)

Easting: 0454005 **Northing:** 5017628

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 99.54 **Top of Riser Elev.:** --

Excavation Width: N/M **Excavation Length:** N/M

NOTES:

BGS- Below Ground Surface

Test Pit Log: TP5

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number	Shear Strength (kPa) 50 150	Water Content (%) 25 50 75 / Liquid Limit (%) 25 50 75	Water Level (Standpipe or Open Excavation)
0 ft / 0 m	Ground Surface	98.78					
	TOPSOIL Silty loam some sand, dark brown, dry.	0.00					
		98.63		10			
	FILL Sand, some silt, trace cobbles, brown, dry. Waste debris of metal and asphalt pieces at approximately 0.9 m bgs.	0.15					
3 ft / 1 m				9			
				11			
	End of Test Pit Refusal at 1.5 m bgs over inferred bedrock.	97.28 1.50					
5 ft / 2 m							
8 ft							Dry at 1.53 m bgs

Easting: 0453945 **Northing:** 5017595

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 98.78 **Top of Riser Elev.:** 99.02

Excavation Width: N/M **Excavation Length:** N/M

NOTES:

BGS- Below Ground Surface

Test Pit Log: TP6

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

SUBSURFACE PROFILE		SAMPLE DATA					
Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number	Shear Strength (kPa) 50 150	Water Content (%) 25 50 75 / Liquid Limit (%) 25 50 75	Water Level (Standpipe or Open Excavation)
0 ft / 0 m	Ground Surface	99.38					
	TOPSOIL Sandy loam, dark brown, dry.	0.00 99.23					
1	**FILL** Sand, some gravel, cobbles, boulders, silty seam at 0.7 m bgs, brown, dry. Refusal at 0.8 m bgs over inferred bedrock.	0.15		12 13			
2		98.58					
3 / 1	End of Test Pit	0.80					
4							
5							
6 / 2							
7							
8							

Easting: 0454003 **Northing:** 5017542

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 99.38 **Top of Riser Elev.:** --

Excavation Width: N/M **Excavation Length:** N/M

NOTES:

BGS- Below Ground Surface

Test Pit Log: TP7

Project No.: 170132 | **Project:** Terrain Analysis

Client: Hindu Temple of Ottawa Carleton | **Location:** 4835 Bank Street, Ottawa, ON

Date: May 08, 2017 | **Field Personnel:** JA

Excavation Method: Backhoe | **Excavation Contractor:** Maurice Yelle Excavation ltd.

SUBSURFACE PROFILE		SAMPLE DATA					
Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Sample Number	Shear Strength (kPa) 50 150	Water Content (%) 25 50 75 / Liquid Limit (%) 25 50 75	Water Level (Standpipe or Open Excavation)
0 / 0	Ground Surface	99.60					
	TOPSOIL Sandy loam, dark brown, dry.	0.00 99.40					
1	**FILL** Sand, brown, trace metal debris, dry.	0.20					
2		98.90					
3 / 1	**TILL** Silty sand, trace clay, boulders, grey, organics including tree stump, roots, bl[illegible] approximately 1.5 to 1.8 m bg[illegible] Refusal due to obstruction (tree stump).	0.70					
4							
5							
6 / 2	End of Test Pit	97.80 1.80					
7							
8							

▼ 1.33 m bgs (08/05/17)

Easting: 0454051 **Northing:** 5017564

Site Datum: Top east arm of hydrant at south entrance (100.00 m)

Groundsurface Elevation: 99.60 **Top of Riser Elev.:** 100.79

Excavation Width: N/M **Excavation Length:** N/M

NOTES:

BGS- Below Ground Surface

Symbols and Terms Used on Borehole and Test Pit Logs

The following explains the data presented in the borehole and test pit logs.

1. Soil Description

The soil descriptions presented in this report are based on commonly accepted methods of classification and identification employed in geotechnical practice. Classification and identification of soil involves some judgement and LRL Associates Ltd. does not guarantee descriptions as exact, but infers accuracy to the extent that is common in current geotechnical practice. Boundaries between zones on the logs are often not distinct but transitional and were interpreted.

a. Proportion

The proportion of each constituent part, as defined by the grain size distribution, is denoted by the following terms:

Term	Proportions
"trace"	1% to 10%
"some"	10% to 20%
prefix (i.e. "sandy" silt)	20% to 35%
"and" (i.e. sand "and" gravel)	35% to 50%

b. Compactness and Consistency

The state of compactness of granular soils is defined on the basis of the Standard Penetration Test. See Section 2c for more details. The consistency of clayey or cohesive soils is based on the shear strength of the soil, as determined by field vane tests and by a visual and tactile assessment of the soil strength.

The state of compactness of granular soils is defined by the following terms:

State of Compactness Granular Soils	Standard Penetration Number "N"
Very loose	0 – 4
Loose	4 – 10
Compact or medium	10 - 30
Dense	30 - 50
Very dense	over - 50

The consistency of cohesive soils is defined by the following terms:

Consistency Cohesive Soils	Undrained Shear Strength (Cu) (kPa)
Very soft	under 10
Soft	10 - 25
Medium or firm	25 - 50
Stiff	50 - 100
Very stiff	100 - 200
Hard	over - 200

2. Sample Data

a. Elevation depth

This is a reference to the geodesic elevation of the soil or to a benchmark of an arbitrary elevation at the location of the borehole or test pit. The depth of geological boundaries is measured from ground surface.

b. Type

Symbol	Type	Letter Code
	Auger	AU
	Split spoon	SS
	Shelby tube	ST
	Rock Core	RC

c. Sample Number

Each sample taken from the borehole is numbered in the field as shown in this column.

LETTER CODE (as above) – Sample Number

d. Blows (N) or RQD

This column indicates the Standard Penetration Number (N) as per ASTM D-1586. This is used to determine the state of compactness of the soil sampled. It corresponds to the number of blows

required to drive 300 mm of the split spoon sampler using a 622 kg*m/s^2 hammer falling freely from a height of 760 mm. For a 600 mm long split spoon, the blow counts are recorded for every 150 mm. The "N" index is obtained by adding the number of blows from the 2nd and 3rd count. Technical refusal indicates a number of blows greater than 50.

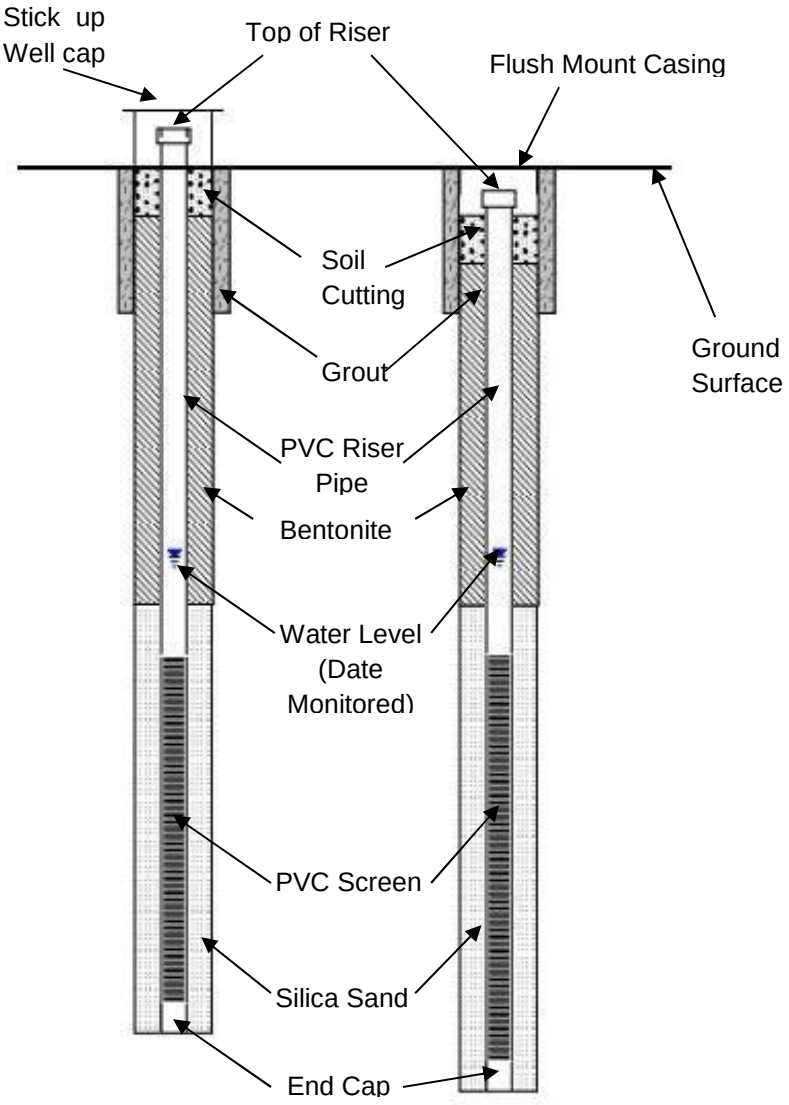
In the case of rock, this column presents the Rock Quality Designation (RQD). The RQD is calculated as the cumulative length of rock pieces recovered having lengths of 10 cm or more divided by the length of coring. The qualitative description of the bedrock based on RQD is given below.

Rock Quality Designation (RQD) (%)	Description of Rock Quality
0 –25	very poor
25 – 50	poor
50 – 75	fair
75 – 90	good
90 – 100	excellent

e. Recovery (%)

For soil samples this is the percentage of the recovered sample obtained versus the length sampled. In the case of rock, the percentage is the length of rock core recovered compared to the length of the drill run.

3. General Monitoring Well Data



APPENDIX B

Laboratory Certificates of Analysis

PARACEL LABORATORIES LTD.
TRUSTED. RESPONSIVE. RELIABLE.

300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Jessica Arthurs

Client PO:
Project: 170132
Custody: 32310

Report Date: 15-May-2017
Order Date: 11-May-2017

Order #: 1719377

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1719377-01	TP1
1719377-02	TP3
1719377-03	TP7

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 15-May-2017
Order Date: 11-May-2017
Project Description: 170132

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Ammonia, as N	EPA 351.2 - Auto Colour	12-May-17	12-May-17
Anions	EPA 300.1 - IC	12-May-17	12-May-17
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	12-May-17	15-May-17

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 15-May-2017
Order Date: 11-May-2017
Project Description: 170132

	Client ID:	TP1	TP3	TP7	-
	Sample Date:	08-May-17	08-May-17	08-May-17	-
	Sample ID:	1719377-01	1719377-02	1719377-03	-
	MDL/Units	Water	Water	Water	-
General Inorganics					
Ammonia as N	0.01 mg/L	0.28	0.39	1.66	-
Total Kjeldahl Nitrogen	0.1 mg/L	78.1	65.3	131	-
Anions					
Nitrate as N	0.1 mg/L	<0.1	0.5	<0.1	-
Nitrite as N	0.05 mg/L	<0.05	<0.05	<0.05	-

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 15-May-2017
Order Date: 11-May-2017
Project Description: 170132

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
General Inorganics									
Ammonia as N	ND	0.01	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 15-May-2017
Order Date: 11-May-2017
Project Description: 170132

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Nitrate as N	ND	0.1	mg/L	ND				20	
Nitrite as N	ND	0.05	mg/L	ND				20	
General Inorganics									
Ammonia as N	0.021	0.01	mg/L	0.022			2.4	8	
Total Kjeldahl Nitrogen	1.50	0.1	mg/L	1.52			1.8	10	

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 15-May-2017
Order Date: 11-May-2017
Project Description: 170132

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Nitrate as N	1.01	0.1	mg/L	ND	101	81-112			
Nitrite as N	1.02	0.05	mg/L	ND	102	76-117			
General Inorganics									
Ammonia as N	0.280	0.01	mg/L	0.022	103	81-124			
Total Kjeldahl Nitrogen	1.91	0.1	mg/L		95.7	81-126			

Qualifier Notes:

Login Qualifiers :

Samples received submerged in water, possibly melted ice. This condition can compromise sample integrity.
Applies to samples: TP1, TP3, TP7

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

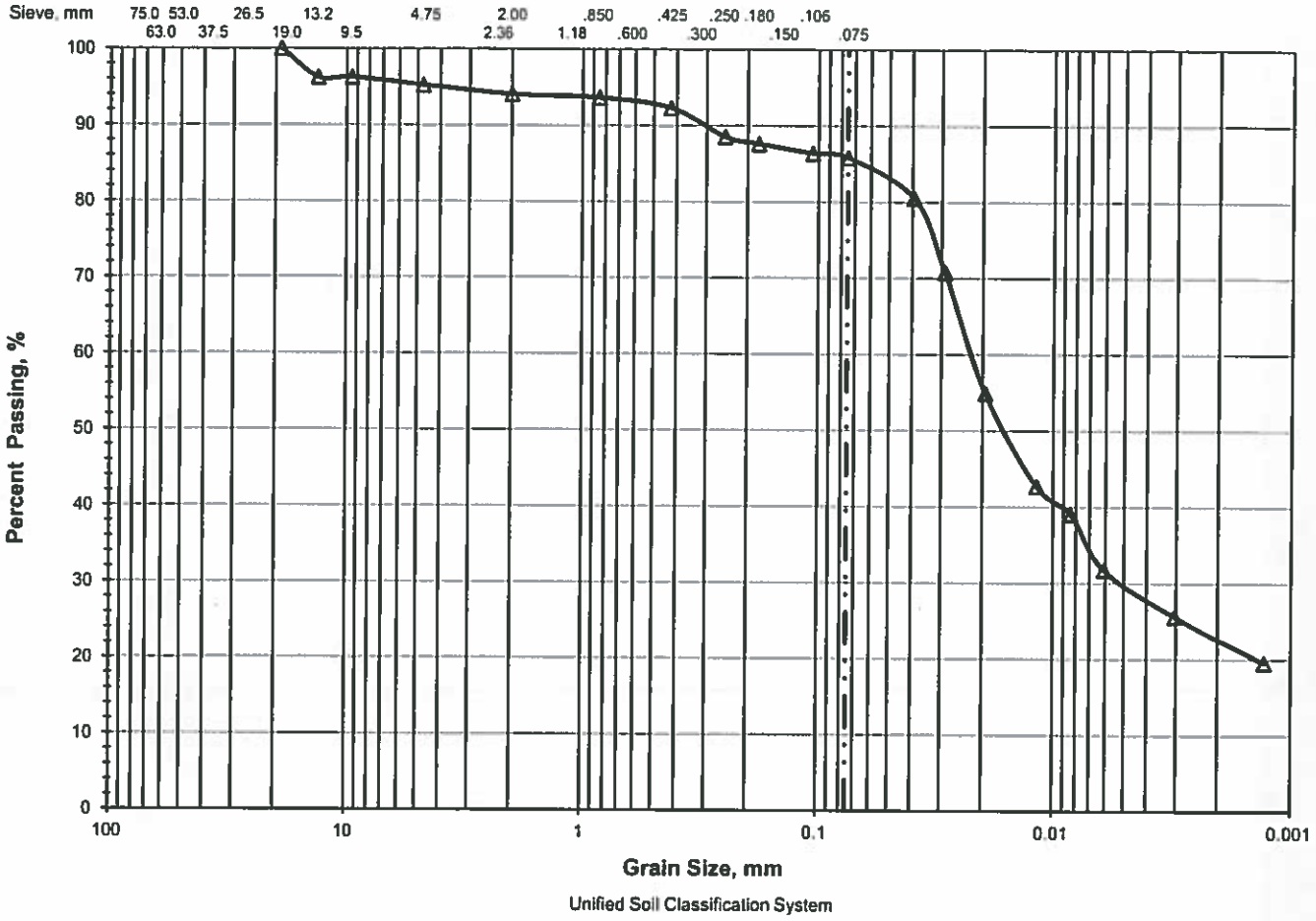
APPENDIX C

Sieve & Hydrometer Analysis

LRL Associates Ltd.

PARTICLE SIZE ANALYSIS

Client:	Lloyd Phillips & Associates Ltd.	**File No.:**	170132
Project:	Hydrogeological Assessment & Terrain Analysis	**Report No.:**	1
Location:	4835 Bank Street., Ottawa, ON.	**Date:**	May 8, 2017



	> 75 mm	% GRAVEL		% SAND			% FINES	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
△	0.0	0.0	4.8	1.2	1.8	6.5	63.8	22.0

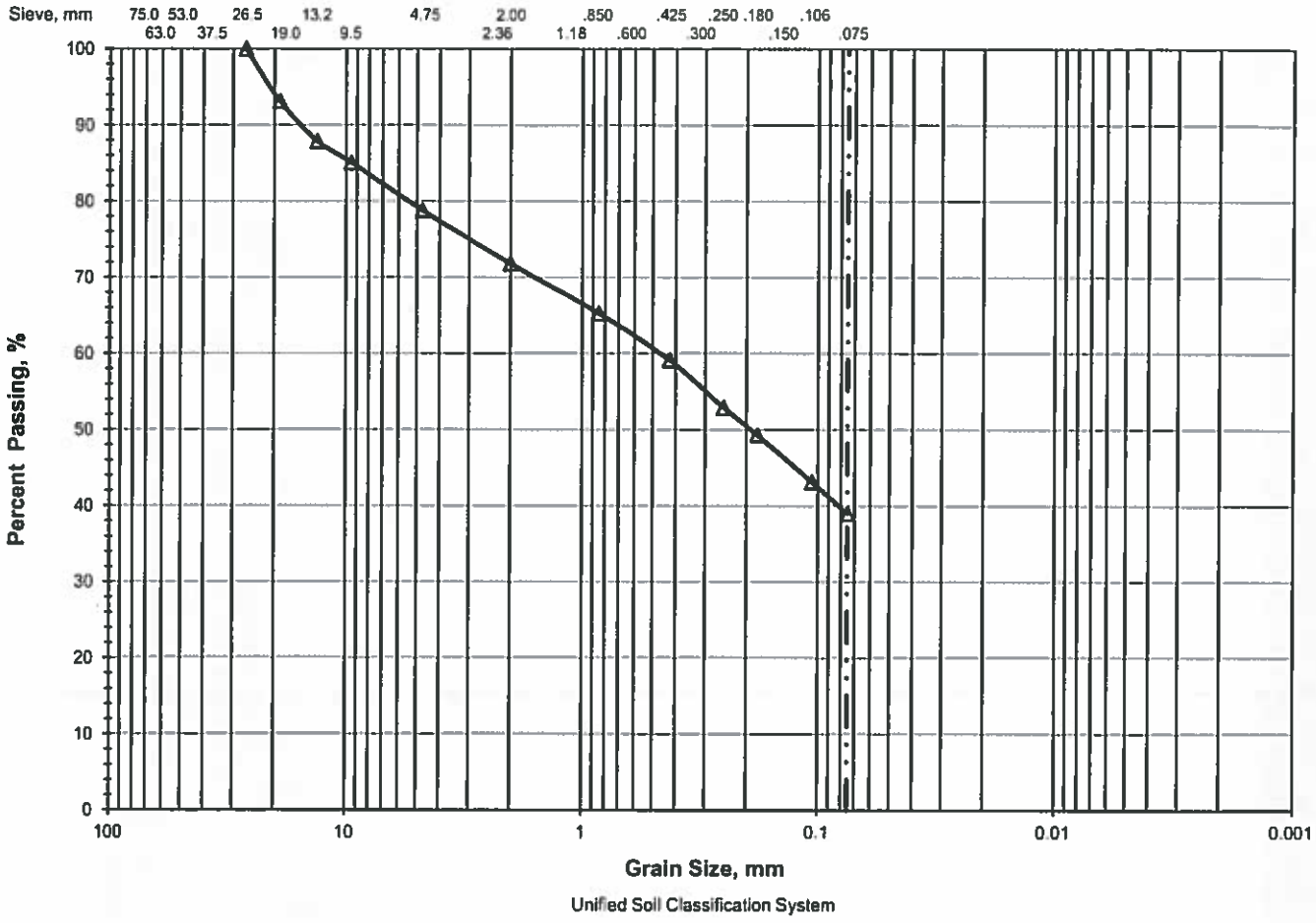
	Location	Sample	Depth, m	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
△	TP-1	3	1.80 - 2.00	0.0226	0.0164	0.0052				

LRL Associates Ltd.

PARTICLE SIZE ANALYSIS

ASTM D 422 / LS-702

Client:	Lloyd Phillips & Associates Ltd.	**File No.:**	170132
Project:	Hydrogeological Assessment & Terrain Analysis	**Report No.:**	2
Location:	4835 Bank Street., Ottawa, ON.	**Date:**	May 8, 2017



Unified Soil Classification System

	> 75 mm	% GRAVEL		% SAND			% FINES
		Coarse	Fine	Coarse	Medium	Fine	Silt & Clay
△	0.0	6.0	15.3	7.0	12.7	20.1	39.0

	Location	Sample	Depth, m	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
△	TP3	6	1.4 - 1.6	0.4855	0.1932					

APPENDIX D

Ontario Well Record Printouts

3/6/50.

UTM | 18 Z | 415317210 E
| 5 R | 5011717110 N
Elev. | 4 R | 013016
Basis Plotted from + Con IV lot 21

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH 15 N. 217
SEP - 9 1957
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Gloucester
[redacted] in Village, Town or City)
(day) (month) (year) Address Building Bridge

Pipe and Casing Record

Casing diameter(s) 2
Length(s) 20
Type of screen
Length of screen

Pumping Test

Static level 10 ft
Pumping rate 200 G.P.H.
Pumping level 30 ft
Duration of test 3 hrs

Well Log — Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
Boulders and sand	0	20	60	50	Fresh
Sand stone	20	60			

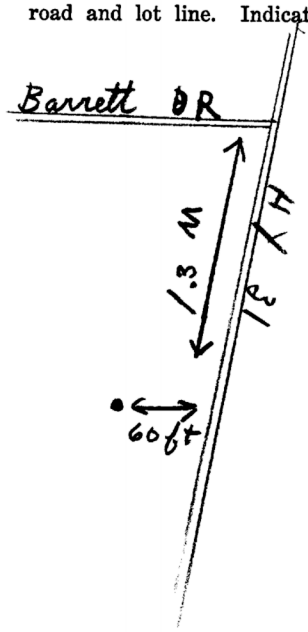
For what purpose(s) is the water to be used? Home
Is water clear or cloudy? Clear
Is well on upland, in valley, or on hillside? upland
Drilling firm L R Corvette
Address 1652 Baseline RD
city Vanier
Name of Driller L R Corvette
Address
Licence Number 395

I certify that the foregoing statements of fact are true.

Date 29 aug 57 L R Corvette
Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 5

316/52

UTM 18 Z 415317 6010 E

15 R 5061175610 N

Elev: 4 R 0315 15

Basin 215

WATER WELL RECORD

The Ontario Water Resources Commission Act

GROUND WATER BRANCH
SEP 15 1962
No 2176
ONTARIO WATER RESOURCES COMMISSION

County or District CARLETON Township, Village, Town or City GLOUCESTER

Con. 4 RF Lot 21 Date completed 20 (day) JULY (month) 62 (year)

[redacted] dress BILLINGS BRIDGE

Casing and Screen Record

Inside diameter of casing	4
Total length of casing	18
Type of screen	—
Length of screen	—
Depth to top of screen	—
Diameter of finished hole	4

Pumping Test

Static level	6
Test-pumping rate	6 G.P.M.
Pumping level	8
Duration of test pumping	1HR
Water clear or cloudy at end of test	CL
Recommended pumping rate	6 G.P.M.
with pump setting of	30 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
CLAY	0	18		
LIMESTONE	18	45	45	F

For what purpose(s) is the water to be used? Home

Is well on upland, in valley, or on hillside? U

Drilling or Boring Firm M MEDSTER & SONS

Address

Licence Number 60

Name of Driller or Borer SIMMS

Address

Date AUG 28

M Meagher

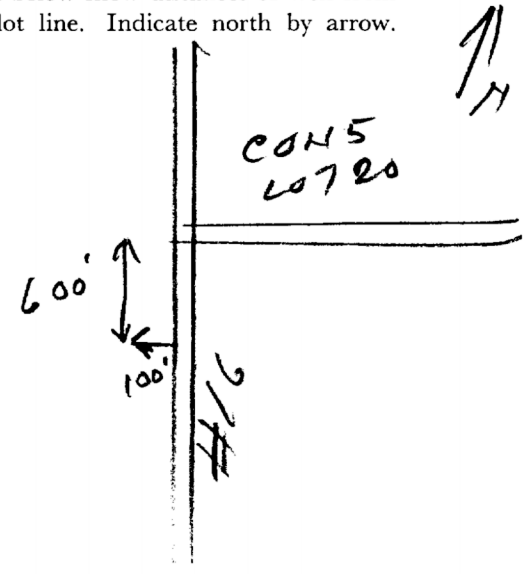
(Signature of Licensed Drilling or Boring Contractor)

Form 7 10M-62-1152

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

316/52

567

UTM |1|8|Z |4|5|3|9|7|0|E
Rideau Front
|5|R |5|0|7|7|0|8|0|N

Elev. |4|R |0|3|3|0|

Basin |2|5| |2| | |

ONTARIO

15 №. 2177

X

GROUND WATER BRANCH
MAY 20 1957
ONTARIO WATER RESOURCES COMMISSION

The Water-well Drillers Act, 1954

Department of Mines

Water-Well Record

County or Territorial District: Carleton Township, Village, Town or City: Gloucester

[redacted] in Village, Town or City)

Address: 40 Lawrance St Ottawa

(day) (month) (year)

Pipe and Casing Record		Pumping Test	
Casing diameter(s)	2"	Static level	6
Length(s)	21	Pumping rate	800 G.P.H
Type of screen		Pumping level	25 ft
Length of screen		Duration of test	2 hr

Well Log **Water Record**

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
Sand	0	7	60	54	Fresh
Bolders and Sand	7	20			
Wht Sand stone	20	60			

For what purpose(s) is the water to be used? House

Is water clear or cloudy? Clear

Is well on upland, in valley, or on hillside? Upland

Drilling firm: F. R. Cossette

Address: 22 Baseline R.D. City View

Name of Driller: F. R. Cossette

Address: —

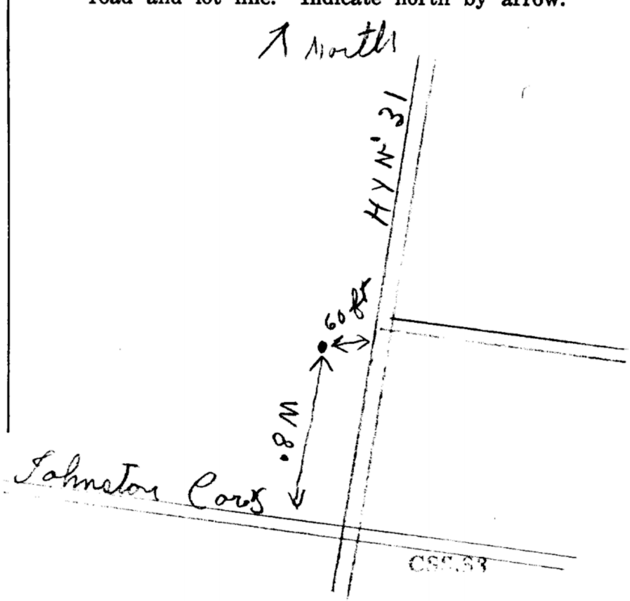
Licence Number: 395

I certify that the foregoing statements of fact are true.

Date: May 14/57 F. R. Cossette
Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 5

316/52

UTM 18 Z 415131 9910 E
9 R 5101161 9191910 N
Elev. 9 R 015 [illegible] 31
Basin 215
Con IV
lot 22

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Gloucester
[redacted] Village, Town or City)
Address Billings Bridge

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 23 feet
Type of screen 1
Length of screen

Pumping Test

Static level 13
Pumping rate 240 gal PH
Pumping level 50+ ft
Duration of test 1 hour

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
			48 feet	37'	fresh
hard gravelly					very hard
Clay & Sand	0	18			
& boulders					
Very hard limestone Rock	18	50			

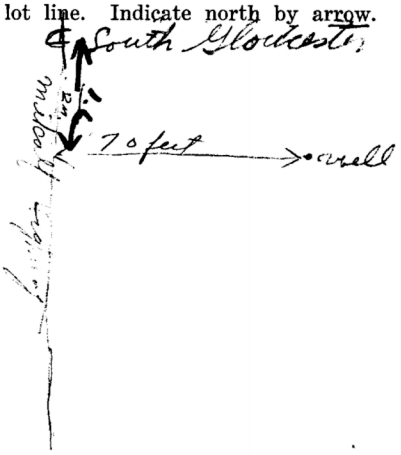
For what purpose(s) is the water to be used?
house, hot & cold supply
Is water clear or cloudy? Clear
Is well on upland, in valley, or on hillside?
uplands
Drilling firm
Address
Name of Driller James Kettle
Address Ramsayville
Licence Number 537

I certify that the foregoing statements of fact are true.

Date Augt 5 James Kettle
Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



N

Form 5

CSS.38

L.P.

31C/5-2.

UTM 18 Z 4 5 3 1 8 6 10 E
Distance from
15 R 5 0 1 7 3 3 10 N

Elev. 94 R 1 0 3 1 2 1 5

Basin 2 1 5

GROUND WATER BRANCH
NOV 14 1961
ONTARIO WATER RESOURCES COMMISSION

15 No 2170

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton

Township, Village, Town or City Gloucester

Con 4 R F Lot P.T.22

Date completed 6 (day) 10 (month) 1961 (year)

[redacted]

Address 28 Clarence St. Ottawa 2, Ont.

Casing and Screen Record

Inside diameter of casing 6 3/16

Total length of casing 21'

Type of screen

Length of screen NONE

Depth to top of screen

Diameter of finished hole 6"

Pumping Test

Static level 20'

Test-pumping rate 80 G.P.M.

Pumping level 70'

Duration of test pumping 1 hr.

Water clear or cloudy at end of test clear

Recommended pumping rate 80 G.P.M.

with pump setting of 80 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
~~Till and Boulders, rock. Grey hard lime stone~~	~~0~~	~~16~~	85	fresh
~~and sand stone.~~	~~16~~	~~25~~		
~~Sand Stone~~	~~25~~	~~89~~		
BOULDER TILL	0	16		
HARD GREY LIMESTONE	16	25		
SANDSTONE	25	89	85	FRESH

For what purpose(s) is the water to be used? Co-operative

Is well on upland, in valley, or on hillside? Valley

Drilling or Boring Firm J. B. Dufresne Co. Ltd.

Address Ottawa, Ontario.

Licence Number 194

Name of Driller or Borer W. Roy

Address Hull

Date Oct 10/60

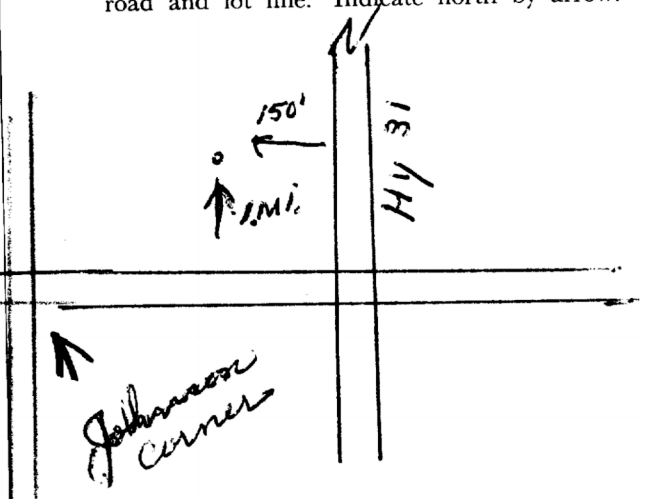
J B Dufresne
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



31G/52

GROUND WATER BRANCH
15 No 2180
AUG 15 1961
ONTARIO WATER RESOURCES COMMISSION

UTM 18 Z 415319 4710 E
15 R 5701171210 N

Elev. 4 R 93310

Basin 215

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District CARLETON Township, Village, Town or City GLOUCESTER

Con. 4 RP Lot 22 Date completed 29 (day) JUNE (month) 61 (year)

[redacted] Address BILLINGS BRIDGE

Casing and Screen Record

Inside diameter of casing	4"
Total length of casing	10'
Type of screen	—
Length of screen	—
Depth to top of screen	—
Diameter of finished hole	4"

Pumping Test

Static level	6'
Test-pumping rate	4 G.P.M.
Pumping level	8
Duration of test pumping	1 HR
Water clear or cloudy at end of test	CLEAR
Recommended pumping rate	4 G.P.M.
with pump setting of	30' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
LOAM	0	6		
GREY LIMESTONE	6	55	55	FRESH

For what purpose(s) is the water to be used? HOUSE

Is well on upland, in valley, or on hillside? ✓

Drilling or Boring Firm M MEAGHER

Address OTTAWA

Licence Number 245

Name of Driller or Borer SAME

Address

Date AUG 9/61

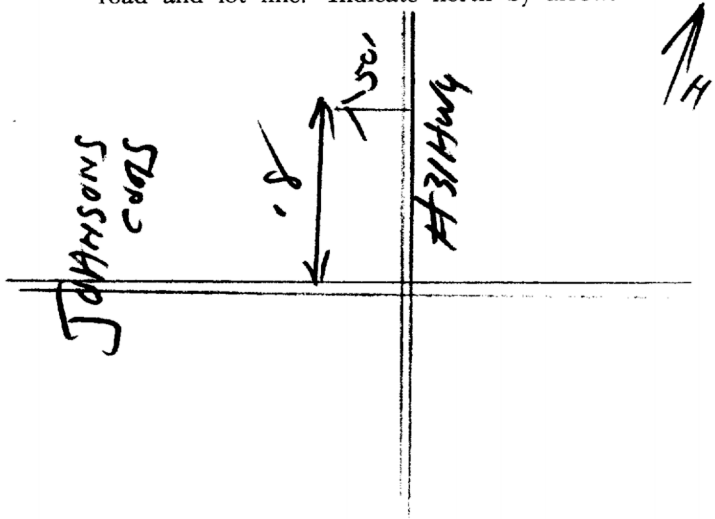
(Signature of Licensed Drilling or Boring Contractor) M Meagher

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



up 31G/5a

UTM 18 Z 415318010 E
5 R 5017515310 N

Elev. 14 R 0131/15

Basin 25

County or District CARLETON

Township, Village, Town or City GLOUCESTER

Con. 4 RF Lot 21 22

Date completed 26 (day) JULY (month) 62 (year)

[redacted]

Address BILLINGS BRIDGE

GROUND WATER BRANCH
SEP 5 1962
ONTARIO WATER RESOURCES COMMISSION
15 No 2181

The Ontario Water Resources Commission Act

WATER WELL RECORD

Casing and Screen Record

Inside diameter of casing 4

Total length of casing 21

Type of screen —

Length of screen —

Depth to top of screen

Diameter of finished hole 4

Pumping Test

Static level 8

Test-pumping rate 5 G.P.M.

Pumping level 10

Duration of test pumping 1 HR

Water clear or cloudy at end of test CC

Recommended pumping rate 5 G.P.M.

with pump setting of 30 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
CLAY	0	21		
LIMESTONE	21	46	46	F

For what purpose(s) is the water to be used? Home

Is well on upland, in valley, or on hillside? V

Drilling or Boring Firm McMEAGHER

Address OTTAWA

Licence Number 618

Name of Driller or Borer SAME

Address

Date 0CT 24

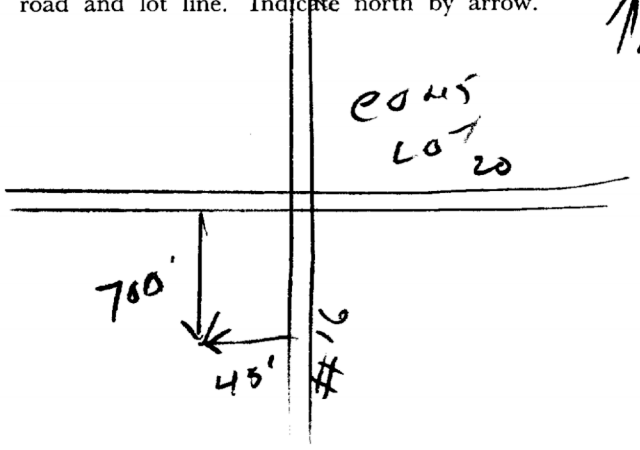
(Signature of Licensed Drilling or Boring Contractor)

Form 7 10M-62-1152

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

4 UTM 18 Z 415318 410 E
5 R 5101717 5150 N
Elev. 4 R 013016
Basin 215

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

15 No 2246

RECEIVED
DEC 6 1951
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

Water Well Record

County or Territorial District CARLETON Township, ~~Village, Town or City~~ Gloucester
[redacted] Town or City)
ss. Leitrim
Date Completed 1.0.0. (day) 2. (month) 1.2.0. (year) Cost of Well (excluding pump) $3.27.00

Pipe and Casing Record		Pumping Test	
Casing diameter(s)	5"	Date	Nov 24
Length(s) of casing(s)	0	Static level	5'
Type of screen	—	Pumping level	20'
Length of screen	—	Pumping rate	8 GPM
Distance from top of screen to ground level	—	Duration of test	30 Min
Is well a gravel-wall type?	No	Distance from cylinder or bowls to ground level	✓

Water Record

	Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
Kind (fresh or mineral) Fresh	30'	good	~~5~~ 30'
Quality (hard, soft, contains iron, sulphur, etc.) Hard	60'	"	55"
Appearance (clear, cloudy, coloured) clear	79'	"	74'
For what purpose(s) is the water to be used? Farm			
How far is well from possible source of contamination? 100' Barn			
What is the source of contamination? BARN			
Enclose a copy of any mineral analysis that has been made of water			

Well Log

Overburden and Bedrock Record	From	To
BOULDER Till	0 ft.	5 ft.
SANDSTONE	5'	80'

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.

Hwy 31 Ottawa →
75 YD
→ N.
50 yds
LCC
See OVER

Situation: Is well on upland, in valley, or on hillside? up land
Drilling Firm H.A. McKERN & SON
Address 195 JAMES ST
Name of Driller M. Renaud Address
Date Nov Dec 1, 50 Licence Number

Signature of Licensee

FORM 5

R.F

316/52

UTM Zone 18 Z | 4 5 4 1 0 1 6 1 0 E

L.S.R. 21 5 0 1 1 7 1 8 7 1 0 N

Elev. 4 R 0 3 1 1 0

15 No 2248

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District CARLETON

Township, Village, Town or City GLOUCESTER

Con. 5 RF Lot 21

Date completed 25 (day) 4 (month) 1966 (year)

[redacted] dress P.O. Box 212 R.R.#6 OTTAWA, ONT.

Casing and Screen Record

Inside diameter of casing 6 1/4"

Total length of casing 21' 3"

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 6"

Pumping Test

Static level 14'

Test-pumping rate 3 G.P.M.

Pumping level 90

Duration of test pumping 1 1/2 HRS

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 3 G.P.M.

with pump setting of 90 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
TOP SOIL	0	1		
CLAY	1	6		Fresh
SANDSTONE	6	98	80 - 97	

For what purpose(s) is the water to be used? Industry

Is well on upland, in valley, or on hillside? Upland

Drilling or Boring Firm McLEAN WATER SUPPLY LTD.

Address 1532 RAVEN AVE OTTAWA, ONT.

Licence Number 2154

Name of Driller or Borer Louis Burrows

Address

Date APR. 26 - 1966

A. L. Schaf

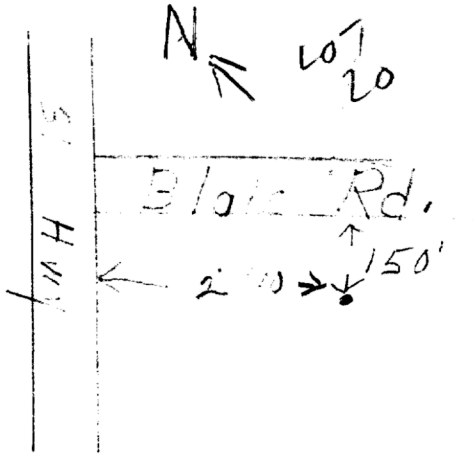
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



C55..58

UTM |18|Z |415|319|610|E
|5|R |5101|7|8|6|0|N

Elev. |4|R |0|3|0|0|

Basin |2|5|

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
DEC 14 1966
ONTARIO WATER RESOURCES COMMISSION

15 No 2249

County or District Carl

Township, Village, Town or City Gloucester

Con. 5 1/2 Lot 21

Date completed 19 (day) Nov. (month) 1966 (year)

[redacted]

Address RR#3 Metcalfe Ont

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 20'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 15

Test-pumping rate 5 G.P.M.

Pumping level 45

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 75' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
sand fill	0	4	83	fresh
sandstone	4	85		

For what purpose(s) is the water to be used?
old house

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm Capital Water Supplies

Address 14 Ashford Dr Ottawa 6

Licence Number 2158

Name of Driller or Borer H Scott

Address

Date Nov 19, 1966

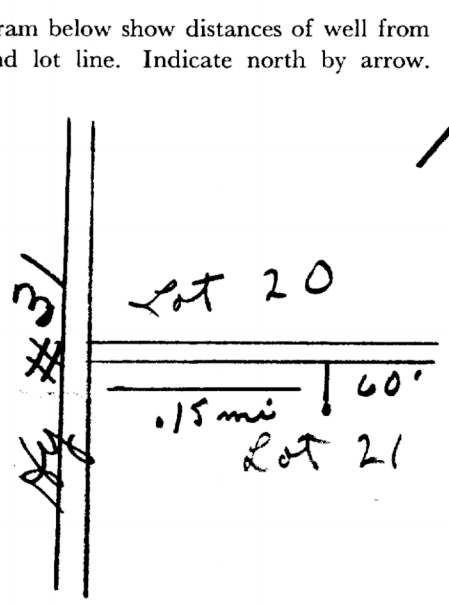
Walter Lavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



31G/5a

UTM | 18 | Z | 4 5 4 1 1 1 0 | E
| 5 | R | 5 0 1 6 9 2 0 | N

Eley. | 4 | R | 0 3 1 4 3 |

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
No. 2250
JAN 19 1965
ONTARIO WATER RESOURCES COMMISSION

Basin | 2 | 5 | County or District Carleton | Township, Village, Town or City Gloucester

Con. V KF | Lot 23 | Date completed 14 (day) Dec (month) 1964 (year)

[redacted] Address Box 254 RR6, Ottawa

Casing and Screen Record

Inside diameter of casing	5"
Total length of casing	10'
Type of screen	none
Length of screen	—
Depth to top of screen	—
Diameter of finished hole	5"

Pumping Test

Static level	20'
Test-pumping rate	4 G.P.M.
Pumping level	65'
Duration of test pumping	1½ hrs
Water clear or cloudy at end of test	cloudy
Recommended pumping rate	4 G.P.M.
with pump setting of	75 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
loam	0	2		
Hard sandstone	2	65		
Red Granite	65	79	60-79	fresh

For what purpose(s) is the water to be used?
house

Is well on upland, in valley, or on hillside? hillside

Drilling or Boring Firm
McLean Water Supply Ltd

Address 1532 Raven Ave
Ottawa

Licence Number 1328

Name of Driller or Borer H. Sally

Address

Date Dec 17, 1964

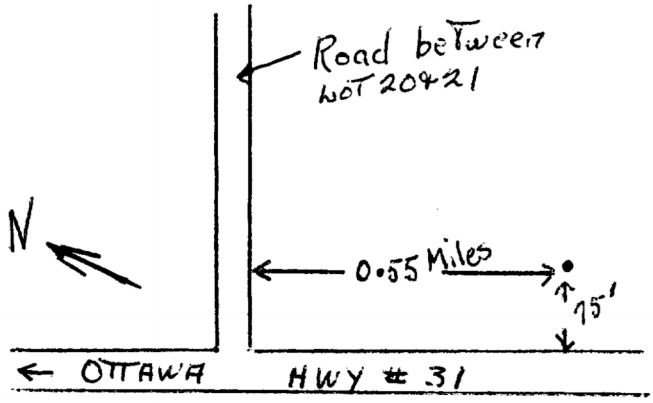
D. McLean
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



UTM 18 453890 RF Con V Lot 21
5054 5017640
Elev. 4 0308
Zone 25

CODED

009925

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton — Township, Village, Town or City Gloucester

Con. RF 5 — Lot 2021 — Date completed 6 December 1968 (day month year)

[redacted] — Address Long Sault, Ontario

Casing and Screen Record

Inside diameter of casing 6"

Total length of casing 15'

Type of screen nil

Length of screen n/a

Depth to top of screen n/a

Diameter of finished hole 6"

Pumping Test

Static level 2'

Test-pumping rate 10 G.P.M.

Pumping level 5'

Duration of test pumping 1 Hour

Water clear or cloudy at end of test cloudy

Recommended pumping rate 10 G.P.M.

with pump setting of 25' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Closely packed Boulders	0'	13'		
Very Abrassive Sandstone	13'	63'	60'	fresh

For what purpose(s) is the water to be used?

Trailer Sales Depot

Is well on upland, in valley, or on hillside? Valley

Drilling or Boring Firm

Blair Phillips Drilling Co. Ltd.,

Address 1119 Balaise Road, Ottawa 5, Ontario.

Licence Number 2779

Name of Driller or Borer J. Moore

Address Kars, Ontario

Date 6 December 1968

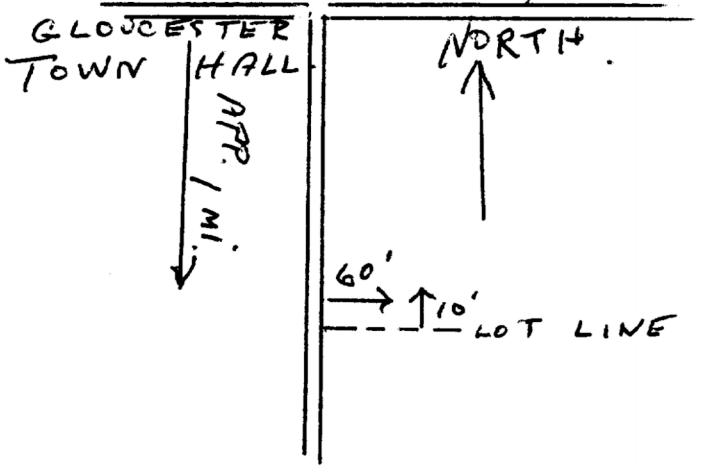
(Signature of Licensed Drilling or Boring Contractor)

Form 7

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



31 G/5a

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 1510717 | MUNICIP. 15001 | CON. RF | LOT 023

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
CARLETON	GLOUCESTER	RF	023

[redacted] 31 HIGHWAY LEITRUM

DATE COMPLETED: DAY 15 MO. [illegible] YR. 70

UTM ZONE | RC. | ELEVATION 0342 | RC. | BASIN CODE 25T

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BROWN	RUBBLE	(FILLED IN LOT TO HIGHWAY GRADE)		0	6
GREY	LIMESTONE			6	52

31 0000612 0052215

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0050	1 ☒ FRESH 3 ☐ SULPHUR / 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR / 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR / 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR / 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR / 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
06	1 ☒ STEEL / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE	188	0	0020 ~~20~~
~~04~~	1 ☐ STEEL / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☒ OPEN HOLE			0052
	1 ☐ STEEL / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT – FEET FROM	DEPTH SET AT – FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0006 GPM.	~~02~~ HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		1 [redacted] / 2 ☒ RECOVERY				
007 FEET	015 FEET		007 FEET	007 FEET	007 FEET	007 FEET

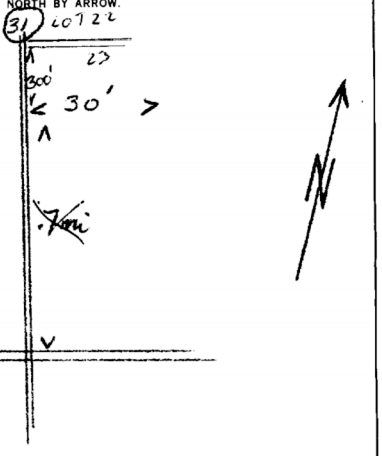
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM.	30 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	040 FEET	0005 GPM.

000.8 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY
2 ☐ OBSERVATION WELL
3 ☐ TEST HOLE
4 ☐ RECHARGE WELL
5 ☐ ABANDONED, INSUFFICIENT SUPPLY
6 ☐ ABANDONED, POOR QUALITY
7 ☐ UNFINISHED

WATER USE 05

1 ☐ DOMESTIC
2 ☐ STOCK
3 ☐ IRRIGATION
4 ☐ INDUSTRIAL
5 ☒ COMMERCIAL
6 ☐ MUNICIPAL
7 ☐ PUBLIC SUPPLY
8 ☐ COOLING OR AIR CONDITIONING
9 ☐ NOT USED
☐ OTHER

METHOD OF DRILLING

1 ☒ CABLE TOOL
2 ☐ ROTARY (CONVENTIONAL)
3 ☐ ROTARY (REVERSE)
4 ☐ ROTARY (AIR)
5 ☐ AIR PERCUSSION
6 ☐ BORING
7 ☐ DIAMOND
8 ☐ JETTING
9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: W. MOLOUGHNEY — LICENCE NUMBER: 3701

ADDRESS: 1110 FISHER

NAME OF DRILLER OR BORER: W. MOLOUGHNEY — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: W. Moloughney — SUBMISSION DATE: DAY 11 MO. FEB YR. 71

OWRC COPY

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3701 | DATE RECEIVED 230271

DATE OF INSPECTION | INSPECTOR

REMARKS: P Kmi. WI

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 1512265 | MUNICIP. 150012 | CON. RF | 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	5 RF	~~S Half~~ 022

OWNER (SURNAME FIRST) [redacted] ADDRESS

DATE COMPLETED: DAY 24 MO. ~~Nov.~~ 11 YR. 72

MINING | RC. 4 | ELEVATION 03316 | RC. ✓ | BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
Brown	Clay	Sand & Stones	Sandy Clay & Stones	0	3
			Med. gray limestone	3	48

31 | 00036 05 28 12 | 00482 15

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0008	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0021	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0034	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.250	0+6"	0012 ~~12+6"~~
6"	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0048
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT – FEET FROM	DEPTH SET AT – FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0008 GPM	01 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
004 FEET	048 FEET	1 ☐ PUMPING 2 ☒ RECOVERY	~~004~~ FEET	004 FEET	~~004~~ FEET	004 FEET

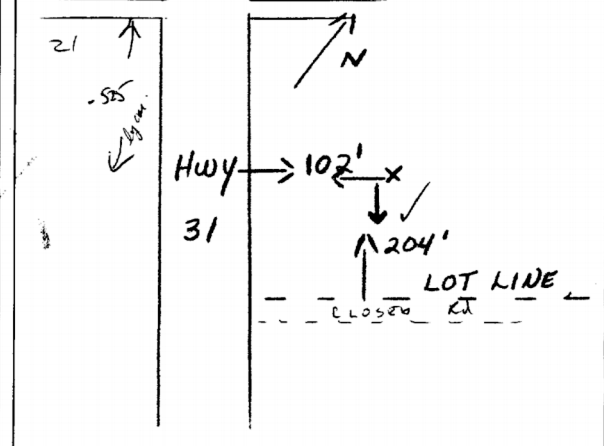
IF FLOWING, GIVE RATE ____ GPM. | PUMP INTAKE SET AT 48 FEET | WATER AT END OF TEST: ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP | RECOMMENDED PUMP SETTING 030 FEET | RECOMMENDED PUMPING RATE 0008 GPM.

000.2 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 01

1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING ☐ OTHER 9 ☐ NOT USED

METHOD OF DRILLING

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☒ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

NAME OF WELL CONTRACTOR: F.E. Johnston Drilling Co. | LICENCE NUMBER: 3002

ADDRESS: P.O. Box 4134 Stn "E" Ottawa, Ont.

NAME OF DRILLER OR BORER: [illegible] Ramsay | LICENCE NUMBER

SIGNATURE OF CONTRACTOR | SUBMISSION DATE DAY ____ MO. ____ YR. ____

RC COPY

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3002 | DATE RECEIVED 150173

DATE OF INSPECTION | INSPECTOR K

REMARKS: P K WI

Well ID Number: 1512375
Well Audit Number:
Well Tag Number:

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location	
Township	GLOUCESTER TOWNSHIP
Lot	022
Concession	RF 04
County/District/Municipality	OTTAWA-CARLETON
City/Town/Village	
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 18 Easting: 454020.70 Northing: 5017262.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BRWN	OBDN	SAND		0 ft	9 ft
WHIT	SNDS			9 ft	74 ft

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed

Method of Construction & Well Use

Method of Construction	Well Use
Diamond	
	Domestic

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
2 inch	GALVANIZED		20 ft
	OPEN HOLE		74 ft

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 1703

Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	
Pumping Rate	8 GPM
Duration of Pumping	2 h:0 m
Final water level	12 ft
If flowing give rate	
Recommended pump depth	35 ft
Recommended pump rate	8 GPM
Well Production	PUMP
Disinfected?	

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	6 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15	12 ft	15	
20		20	
25		25	
30	12 ft	30	
40		40	
45	12 ft	45	
50		50	
60	12 ft	60	

Water Details

Water Found at Depth	Kind
74 ft	Fresh

Hole Diameter

Depth From	Depth To	Diameter

Audit Number:

Date Well Completed: November 27, 1972

Date Well Record Received by MOE: March 07, 1973

Updated: February 2, 2018
Rate Rate
Share facebook twitter Print
Tags

- Environment and energy,

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

Ontario

31 G/5a

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 1513436 | MUNICIP. 15004 | CON. RF 04

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
LETRIM Ottawa-Carleton	GLOUCESTER	IV RFC	022

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
UNITED CO - OP OF ~~ONTARIO~~ ONT	R. R. #6 OTTAWA, ONTARIO.	DAY 16 MO. 08 YR. 73

21 | ZONE 18 | EASTING 453850 | NORTHING 5017215 | RC. 6 | ELEVATION 0323 | RC. 4 | BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
Brown	Top Soil		Soft	0	4
Brown	Soil	Boulder	Hard	4	12
Grey	Limestone	Clay	Soft Porous	12	16
White	Limestone	Limestone Grey	Medium Hard	16	50

31 | 0004692 | 0026213 | 0016215051 | 00501115

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0048	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	~~22~~ 0022
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN: SIZE(S) OF OPENING (SLOT NO.) | DIAMETER INCHES | LENGTH FEET | MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER | PUMPING RATE 0005 GPM | DURATION OF PUMPING 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
014 FEET	025 FEET	030 FEET	030 FEET	030 FEET	030 FEET

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

IF FLOWING, GIVE RATE: GPM | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP | RECOMMENDED PUMP SETTING 030 FEET | RECOMMENDED PUMPING RATE 0005 GPM

50-53: 000.3

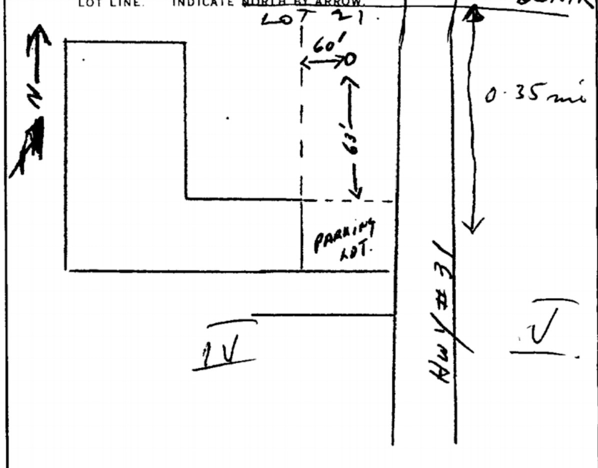
FINAL STATUS OF WELL: 1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 01: 1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING: 1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☒ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

CONTRACTOR	
NAME OF WELL CONTRACTOR: HAWTHORNE DRILLING LIMITED	LICENCE NUMBER: 2557
ADDRESS: Box 4218 STATION "E" OTTAWA ONTARIO	
NAME OF DRILLER OR BORER: YVON AUBIN	LICENCE NUMBER: 2557
SIGNATURE OF CONTRACTOR: per [signature]	SUBMISSION DATE: DAY 25 MO 9 YR 73

OFFICE USE ONLY: DATA SOURCE 1 | CONTRACTOR 2557 | DATE RECEIVED 28 09 73 | DATE OF INSPECTION | INSPECTOR | REMARKS: P-R

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FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

Ontario

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11 — 1514664 — MUNICIP. 15002 — CON. RF — 04

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	~~IV~~ RF ~~III~~	022

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
CDN Canadian Industries Ltd.	Hwy #31 Ottawa Ont	DAY 20 MO 02 YR 25

21 — UTM ZONE 18 — EASTING 453793 — NORTHING 5017090 — PC 4 — ELEVATION 0340 — RC 4 — BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Sand Gravel	Boulders.	Dense	0	13
Black	Shale		Loose.	13	30
Grey	Limestone		Sound.	30	111
White	Sandstone		Sound	111	125

31 — 00136281113 00308117 01111215 01251118

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0032	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
0111	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 5/8 06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	EC. 0022
5 1/4 06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		22	0125
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING HOURS	MINS
1 ☒ PUMP 2 ☐ BAILER	0012	01	15

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	020 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	020 FEET	020 FEET	020 FEET	020 FEET

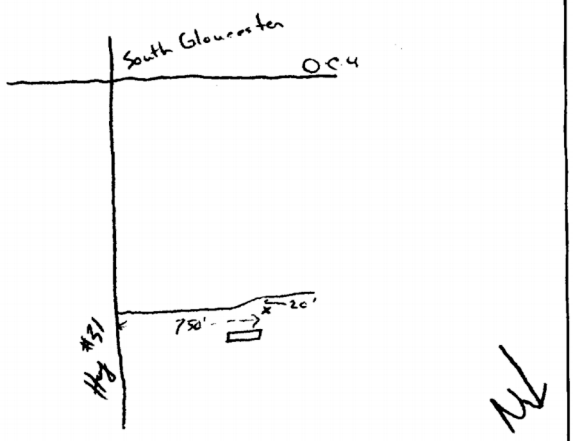
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
— GPM	80 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	080 FEET	0008 GPM

50-53 0240 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 5317

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 1

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 04

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☒ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING 5

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Hawthorne Drilling Ltd	2558

ADDRESS	LICENCE NUMBER
PO Box 4218 Stat E.	

NAME OF DRILLER OR BORER	LICENCE NUMBER
A. Emond	2558

SIGNATURE OF CONTRACTOR — SUBMISSION DATE DAY 24 MO. 2 YR. 25

OFFICE USE ONLY

DATA SOURCE 1 — CONTRACTOR 2558 — DATE RECEIVED 25 02 75

DATE OF INSPECTION — INSPECTOR

REMARKS: CSS.58

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Carleton	Gloucester	III	22

OWNER (SURNAME FIRST) 28-47	ADDRESS	DATE COMPLETED 48-53
Canadian Industries Ltd.	Hwy # 31 Ottawa Ont	DAY 20 MO. 2 YR. 25

21 — ZONE — EASTING — NORTHING — RC — ELEVATION — RC — BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Sand Gravel	Boulders.	Dense	0	13
Black.	Shale		Loose.	13	30
Grey	Limestone		Sound.	30	111
White	Sandstone		Sound	111	125

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
32	1 ☑ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
111	1 ☑ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6¼	1 ☑ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE	.188	0	22.
5⅞	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☑ OPEN HOLE		22	125
	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.) 31-33	DIAMETER 34-38 INCHES	LENGTH 39 FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN 41-44 FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	80

71 PUMPING TEST

PUMPING TEST METHOD 10	PUMPING RATE 11-14	DURATION OF PUMPING 15-16 HOURS 17-18 MINS
1 ☑ PUMP 2 ☐ BAILER	12 GPM	1 HOURS 15 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	25 WATER LEVELS DURING	1 ☐ PUMPING 2 ☐ RECOVERY
19-21 20 FEET	22-24 20 FEET	15 MINUTES 26-28 20 FEET	30 MINUTES 29-31 20 FEET
		45 MINUTES 32-34 20 FEET	60 MINUTES 35-37 20 FEET

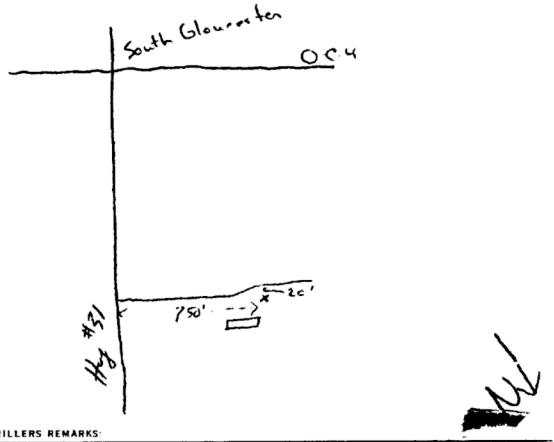
IF FLOWING GIVE RATE 38-41	PUMP INTAKE SET AT	WATER AT END OF TEST 42
— GPM	80 FEET	1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING 43-45	RECOMMENDED PUMPING RATE 46-49
☐ SHALLOW ☑ DEEP	80 FEET	8 GPM

50-53 — GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

54 FINAL STATUS OF WELL

1 ☑ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

55-56 WATER USE

1 ☐ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☑ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

57 METHOD OF DRILLING

1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☑ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Hawthorne Drilling Ltd	2558.

ADDRESS: PO Box 4218 Stat. E.

NAME OF DRILLER OR BORER	LICENCE NUMBER
A. Emond	2558

SIGNATURE OF CONTRACTOR — SUBMISSION DATE: DAY 24 MO. 2 YR. 25

OFFICE USE ONLY

DATA SOURCE 58	CONTRACTOR 59-62	DATE RECEIVED 63-68

DATE OF INSPECTION — INSPECTOR

REMARKS

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The Ontario Water Resources Act

WATER WELL RECORD

Ontario

316/5a

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11 | 1514840 | MUNICIP. 15002 | CON. RF | 05

COUNTY OR DISTRICT: Ottawa Carleton | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester | CON., BLOCK, TRACT, SURVEY, ETC.: ~~Pt 23~~ RE Conc 5 | LOT: 023

OWNER (SURNAME FIRST): Hume Trading Co Ltd | ADDRESS: PO Box 254 RR #6. | DATE COMPLETED: DAY 11 MO 07 YR 75

21 | ZONE: 18 | EASTING: 454143 | NORTHING: 5016952 | RC: 4 | ELEVATION: 0345 | RC: 4 | BASIN CODE: 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Top Soil		Top Soil	0	3
Grey	Limestone		Med	3	135

31 | 00036102 | 01352116

32

WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
010 5	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	20 0020
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		20	0135
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER | PUMPING RATE: 0009 GPM | DURATION OF PUMPING: 01 HOURS 10 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	090 FEET	090 FEET	090 FEET	090 FEET	090 FEET

1 ☒ PUMPING 2 ☐ RECOVERY

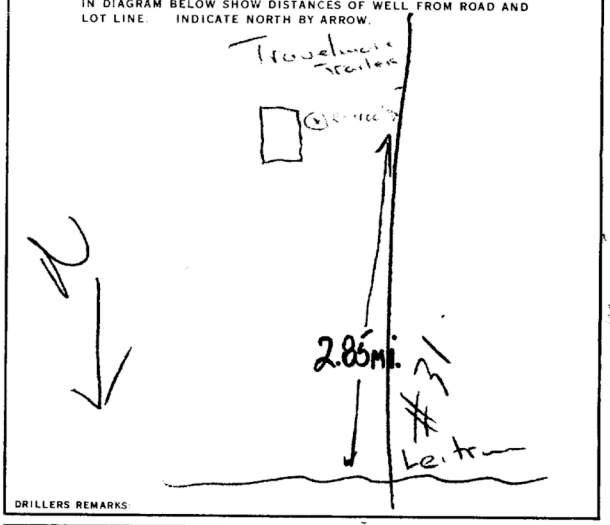
IF FLOWING, GIVE RATE: GPM | PUMP INTAKE SET AT: 90 FEET | WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 090 FEET | RECOMMENDED PUMP RATE: 0006 GPM

50-53: 000.1 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 1654

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL

54 | 1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE

55-56 | 01 | 1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING

57 | 5 | 1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Hawthorne Drilling Ltd | LICENCE NUMBER: 2557

ADDRESS: PO Box 9218 Stn E. Ottawa

NAME OF DRILLER OR BORER: A Emond. | LICENCE NUMBER: 2557

SIGNATURE OF CONTRACTOR | SUBMISSION DATE: DAY 15 MO 7 YR 75

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DATA SOURCE: 1 | CONTRACTOR: 2557 | DATE RECEIVED: 08 08 75

DATE OF INSPECTION | INSPECTOR

REMARKS: P ✓ WI

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The Ontario Water Resources Act

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WATER WELL RECORD

Ontario

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(11) 1516052 | MUNICIP 15002 | CON RF | LOT 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	RF IV	022 (22)

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Melco Investors Corp.	934 Sealer Cres. Ottawa, Ont. K2B 5H7	DAY 13 07 YR 77

(21) UTM ZONE 18 | EASTING 454099 | NORTHING 5017399 | RC 4 | ELEVATION 0330 | RC 4 | BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
brown	sand	clay & boulders	fill	0	7
black	muck		soft	7	9
grey	hardpan	boulders	packed	9	26
grey	limestone		medium	26	43
grey	sandstone		hard	43	178

(31) 0007628051B | 0009803B5 | 0026214137B | 0043215782 | 0178218732

(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0175	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6¼	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE	188	0	0028
06	4 ☒ OPEN HOLE		28	178
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0178
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☑ BAILER	0015 GPM	01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING (1 ☒ PUMPING 2 ☐ RECOVERY)	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
030 FEET	065 FEET		065 FEET	065 FEET	065 FEET	065 FEET

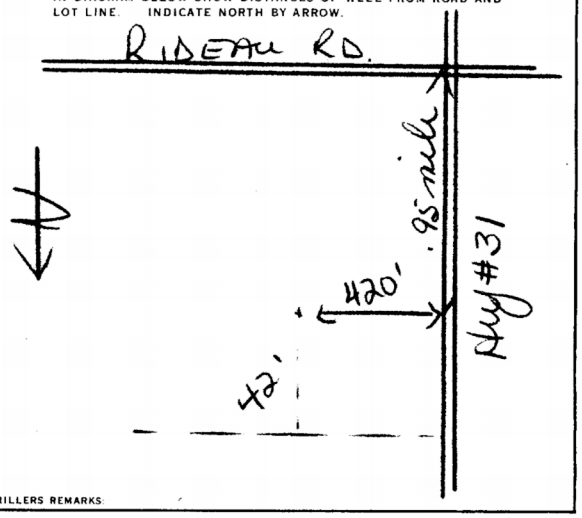
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☐ DEEP	075 FEET	0005 GPM

50-53 ——— GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 1	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE 01	1 ☐ DOMESTIC 2 ☒ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF DRILLING 5	1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd. | LICENCE NUMBER: 1558

ADDRESS: Box 490 Stittsville, Ontario

NAME OF DRILLER OR BORER: P. Kavanagh | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Kavanagh | SUBMISSION DATE: DAY 15 MO. 7 YR. 77

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
1	1558	080877

DATE OF INSPECTION | INSPECTOR: Kn.

REMARKS: P WI

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Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1517349

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2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

(11) MUNICIP. 15002 CON. ... 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Ottawa C. [redacted]	Gloucester	5 R.F.	021

[redacted] #6 Ottawa Ont.

DATE COMPLETED: DAY 09 MO. 06 YR. 80

NORTHING 17699 | RC. 4 | ELEVATION 0305 | RC. 4 | BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
Brown	sandy soil	stone		0	8
Brown	hard	granite rock.		8	27

(31) 0008602128 1 | 0027621273

32

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0027	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
06 6¼	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	.188	0	0020
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN — FEET

(61) PLUGGING & SEALING RECORD

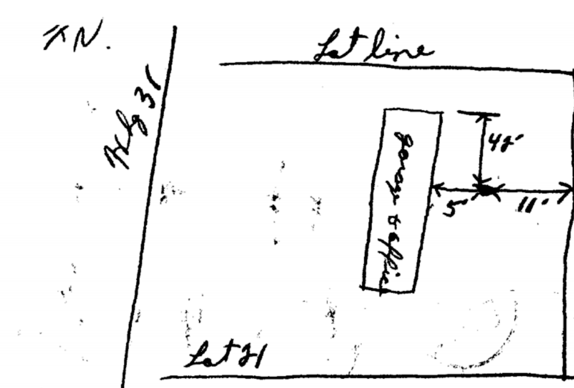
DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD	☐ PUMP ☒ BAILER
PUMPING RATE	0015 GPM
DURATION OF PUMPING	01 HOURS 00 MINS
STATIC LEVEL	005 FEET
WATER LEVEL END OF PUMPING	014 FEET
WATER LEVELS DURING	☒ PUMPING ☐ RECOVERY
15 MINUTES	012 FEET
30 MINUTES	012 FEET
45 MINUTES	014 FEET
60 MINUTES	014 FEET
IF FLOWING, GIVE RATE	GPM
PUMP INTAKE SET AT	27 FEET
WATER AT END OF TEST	☐ CLEAR ☒ CLOUDY
RECOMMENDED PUMP TYPE	☒ SHALLOW ☐ DEEP
RECOMMENDED PUMP SETTING	023 FEET
RECOMMENDED PUMPING RATE	0007 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL 1

☒ WATER SUPPLY ☐ OBSERVATION WELL ☐ TEST HOLE ☐ RECHARGE WELL ☐ ABANDONED, INSUFFICIENT SUPPLY ☐ ABANDONED, POOR QUALITY ☐ UNFINISHED

WATER USE 05

☐ DOMESTIC ☐ STOCK ☐ IRRIGATION ☐ INDUSTRIAL ☐ OTHER ☒ COMMERCIAL ☐ MUNICIPAL ☐ PUBLIC SUPPLY ☐ COOLING OR AIR CONDITIONING ☐ NOT USED

METHOD OF DRILLING 1

☒ CABLE TOOL ☐ ROTARY (CONVENTIONAL) ☐ ROTARY (REVERSE) ☐ ROTARY (AIR) ☐ AIR PERCUSSION ☐ BORING ☐ DIAMOND ☐ JETTING ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Maurice Cayer Ltd. — LICENCE NUMBER: 1517

ADDRESS: Casselman Ont.

NAME OF DRILLER OR BORER — LICENCE NUMBER

SIGNATURE OF CONTRACTOR: Maurice Cayer — SUBMISSION DATE: DAY ___ MO ___ YR ___

OFFICE USE ONLY

DATA SOURCE: 1 — CONTRACTOR: 1517 — DATE RECEIVED: 020980

DATE OF INSPECTION — INSPECTOR: Km

REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1517349

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11

COUNTY OR DISTRICT: Ottawa Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester
CON., BLOCK, TRACT, SURVEY, ETC.: 5
LOT: 21
ADDRESS: [redacted] RR #6 Ottawa Ont.
DATE COMPLETED: DAY 9 MO Jun YR 80

21 — UTM ZONE / EASTING / NORTHING / RC / ELEVATION / RC / BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	sandy soil	stone		0	8
Brown	hard	granite rock.		8	22

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
17	1 ☐ FRESH 2 ☒ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	20
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.) | DIAMETER (INCHES) | LENGTH (FEET)
MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN (FEET)

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
3		

71 PUMPING TEST

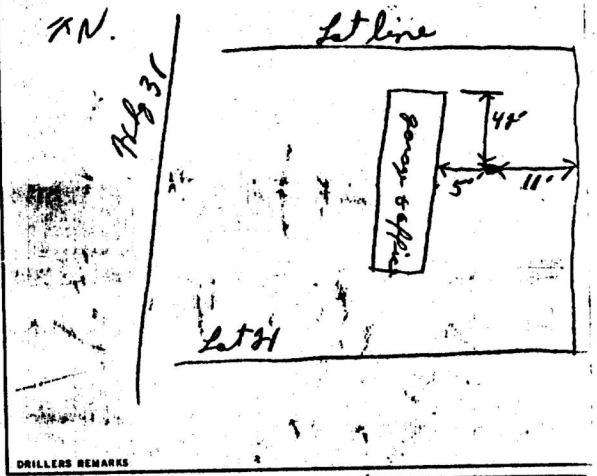
PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER
PUMPING RATE: 15 GPM
DURATION OF PUMPING: 1 HOURS ___ MINS
WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
5 FEET	14 FEET	12 FEET	12 FEET	14 FEET	14 FEET

IF FLOWING GIVE RATE: ___ GPM
PUMP INTAKE SET AT: 22 FEET
WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY
RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP
RECOMMENDED PUMP SETTING: 23 FEET
RECOMMENDED PUMPING RATE: 7 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL
1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED POOR QUALITY 7 ☐ UNFINISHED

WATER USE
1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☒ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED ☐ OTHER

METHOD OF DRILLING
1 ☒ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Maurice Cyr Ltd. | LICENCE NUMBER: 1517
ADDRESS: Casselman Ont.
NAME OF DRILLER OR BORER | LICENCE NUMBER
SIGNATURE OF CONTRACTOR: Maurice Cyr | SUBMISSION DATE: DAY ___ MO ___ YR ___

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR | 020980
DATE OF INSPECTION | INSPECTOR
REMARKS

Ontario **Ministry of the Environment**

The Ontario Water Resources Act

WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 **1531693** Municipality 15002 Con. CON 05

County or District: Ottawa Carleton

[redacted]

Township/Borough/City/Town/Village: Gloucester

Address: Greely Dr

Con block tract survey, etc.: 5

Lot: 6

Date completed: 25 day 10 month 00 year

21 UTM Northing RC Elevation RC Basin Code

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Gravel			0	3
Grey	Sandstone			3	220

31

32

41 WATER RECORD

Water found at - feet	Kind of water			
206	1 ☑ Fresh	3 ☐ Sulphur	14	
	2 ☐ Salty	4 ☐ Minerals		
		6 ☐ Gas		
214	1 ☑ Fresh	3 ☐ Sulphur	19	
	2 ☐ Salty	4 ☑ Minerals		
		6 ☐ Gas		
	1 ☐ Fresh	3 ☐ Sulphur	24	
	2 ☐ Salty	4 ☐ Minerals		
		6 ☐ Gas		
	1 ☐ Fresh	3 ☐ Sulphur	29	
	2 ☐ Salty	4 ☐ Minerals		
		6 ☐ Gas		
	1 ☐ Fresh	3 ☐ Sulphur	34	60
	2 ☐ Salty	4 ☐ Minerals		
		6 ☐ Gas		

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	0	22
8 3/4	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	20
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		20	220

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type	Depth at top of screen feet	

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	To	Material and type (Cement grout, bentonite, etc.)
2	22	Cement grout

71 PUMPING TEST

Pumping test method: 1 ☑ Pump 2 ☐ Bailer

Pumping rate: 10 GPM

Duration of pumping: 1 Hours Mins

Water levels during: 1 ☐ Pumping 2 ☑ Recovery

Static level	Water level end of pumping	15 minutes	30 minutes	45 minutes	60 minutes
30 feet	120 feet	30 feet	30 feet	30 feet	30 feet

If flowing give rate: GPM

Pump intake set at: feet

Water at end of test: ☐ Clear ☑ Cloudy

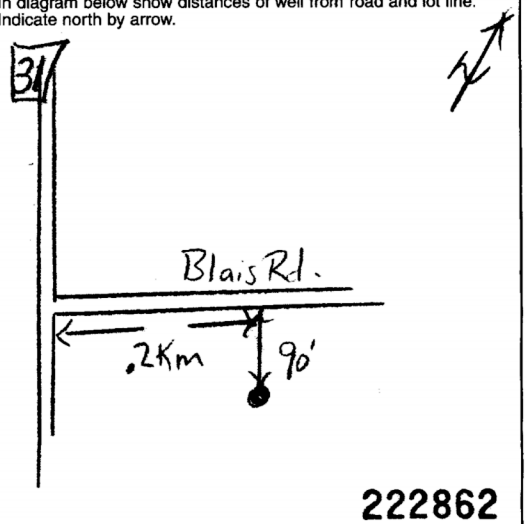
Recommended pump type: ☐ Shallow ☑ Deep

Recommended pump setting: 120 feet

Recommended pump rate: 10 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



222862

FINAL STATUS OF WELL 54

1 ☑ Water supply
2 ☐ Observation well
3 ☐ Test hole
4 ☐ Recharge well
5 ☐ Abandoned, insufficient supply
6 ☐ Abandoned, poor quality
7 ☐ Abandoned (Other)
8 ☐ Dewatering
9 ☐ Unfinished
10 ☐ Replacement well

WATER USE 55-56

1 ☑ Domestic
2 ☐ Stock
3 ☐ Irrigation
4 ☐ Industrial
5 ☐ Commercial
6 ☐ Municipal
7 ☐ Public supply
8 ☐ Cooling & air conditioning
9 ☐ Not use
10 ☐ Other

METHOD OF CONSTRUCTION 57

1 ☐ Cable tool
2 ☐ Rotary (conventional)
3 ☐ Rotary (reverse)
4 ☐ Rotary (air)
5 ☑ Air percussion
6 ☐ Boring
7 ☐ Diamond
8 ☐ Jetting
9 ☐ Driving
10 ☐ Digging
11 ☐ Other

Name of Well Contractor: Air-Rock Drilling Co Ltd
Well Contractor's Licence No.: 1119

Address: RR# 2 Jasper Ont

Name of Well Technician: Shannon Purcell
Well Technician's Licence No.: T2122

Signature of Technician/Contractor:
Submission date: 02 day 11 mo 00

MINISTRY USE ONLY

Data source 58
Contractor: 1119 59-62
Date received: JAN 03 2001 63-68 80
Date of inspection
Inspector
Remarks

CSS.ES1

0506 (11/98) Front Form 9

2 - MINISTRY OF THE ENVIRONMENT COPY

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 1533566 Municipality 15002 Con. RF 05

County or District: Ottawa Carleton
Township/Borough/City/Town/Village: Gloucester
Con block tract survey, etc.: 5
Lot: 21
Address: Gloucester, Ont
Date completed: 07 day 02 month 03 year
21 UTM Northing RC Elevation RC Basin Code i ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Sand			0	7
grey	Sandstone			7	98
"	Limestone			98	127
"	Sandstone			127	220

31
32

41 WATER RECORD

Water found at - feet	Kind of water
216	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	0	22
8 3/4	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		0	20
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		20	220

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet

Material and type: | Depth at top of screen feet:

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From	To	Material and type (Cement grout, bentonite, etc.)
2	22	Cement grout

71 PUMPING TEST

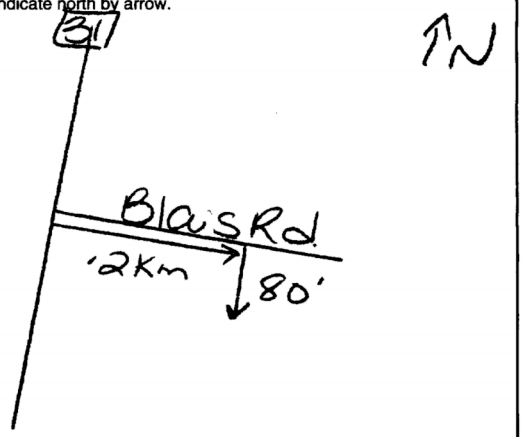
Pumping test method: 1 ☒ Pump 2 ☐ Bailer
Pumping rate: 9 GPM
Duration of pumping: 1 Hours Mins

Static level	Water level end of pumping	Water levels during: 1 ☐ Pumping 2 ☒ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
16 feet	120 feet	16 feet	16 feet	16 feet	16 feet

If flowing give rate: GPM
Pump intake set at: feet
Water at end of test: ☐ Clear ☒ Cloudy
Recommended pump type: ☐ Shallow ☒ Deep
Recommended pump setting: 120 feet
Recommended pump rate: 9 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



248869

FINAL STATUS OF WELL

1 ☒ Water supply 2 ☐ Observation well 3 ☐ Test hole 4 ☐ Recharge well 5 ☐ Abandoned, insufficient supply 6 ☐ Abandoned, poor quality 7 ☐ Abandoned (Other) 8 ☐ Dewatering 9 ☐ Unfinished 10 ☐ Replacement well

WATER USE

1 ☒ Domestic 2 ☐ Stock 3 ☐ Irrigation 4 ☐ Industrial 5 ☐ Commercial 6 ☐ Municipal 7 ☐ Public supply 8 ☐ Cooling & air conditioning 9 ☐ Not use 10 ☐ Other

METHOD OF CONSTRUCTION

1 ☐ Cable tool 2 ☐ Rotary (conventional) 3 ☐ Rotary (reverse) 4 ☐ Rotary (air) 5 ☒ Air percussion 6 ☐ Boring 7 ☐ Diamond 8 ☐ Jetting 9 ☐ Driving 10 ☐ Digging 11 ☐ Other

Name of Well Contractor	Well Contractor's Licence No.
A. Rock Drilling Ltd	1119
Address: RR#1 Richmond, Ont	
Name of Well Technician: Shannon Purcell	Well Technician's Licence No.: T2122
Signature of Technician/Contractor	Submission date: 28 day 02 mo 03 yr

MINISTRY USE ONLY

Data source 58 | Contractor 1119 59-62 | Date received MAR 31 2003 63-68 80
Date of inspection | Inspector
Remarks: CSS.ES3

0506 (07/00) Front Form 9

2 - MINISTRY OF THE ENVIRONMENT COPY

Ontario Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A051569 A 051569

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name	E-mail Address	Well Constructed by Well Owner
Airport Golfland			☐

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
6357 Emerald Links	Greely	Ontario	K4P 1M4	613 850 5468

Part A Construction and/or Major Alteration of a Well

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
Hwy 31	Gloucester	20	5

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa Carleton	Gloucester	Ontario	

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	453794	5018088		Garmin	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
Brown	Clay	Stones	Packed	0	3.35
Grey	Limestone		Broken	3.35	4.57
Grey	Limestone		Medium Hard	4.57	42.66
Grey	Limestone	Sandstone Layers	Hard	42.66	52.72

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
6.40	0	Grouted Bentonite Slurry	.132m3

Method of Construction

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

Water Use

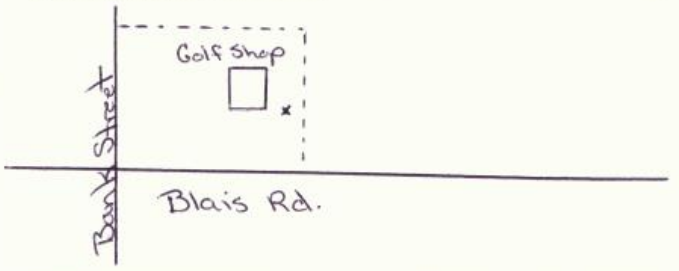
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points,
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2008/07/14	☒ Yes ☐ No	2008/07/15

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

Business Address (Street No./Name, number, RR)	Municipality
Box 490	Stittsville

Province	Postal Code	Business E-mail Address
Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
613 836 1766	Miller, Stephen

Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
0097		2008/07/16

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: Submersible

Pump intake set at (Metres): 45.71

Pumping rate (Litres/min): 54.6

Duration of pumping: 3 hrs + _____ min

Final water level end of pumping (Metres): 21.37

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 30.47 Metres

Recommended pump rate (Litres/min): 45.5

If flowing give rate (Litres/min):

Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level	4.75	Static Level	
1	6.42	1	18.19
2	8.55	2	17.26
3	9.96	3	15.67
4	11.18	4	14.50
5	12.29	5	13.32
10	16.10	10	9.44
15	18.20	15	7.38
20	19.51	20	6.24
25	20.36	25	5.61
30	20.94	30	5.18
40	21.64	40	4.75
50	22.01	50	
60	22.14	60	

Water Details

Water found at Depth		Kind of Water	
51.50 Metres	☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	Not Tested
Metres	☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	
Metres	☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☒ Yes ☐ No

Casing and Well Details

Diameter of the Hole (Centimetres): 15.39

Depth of the Hole (Metres): 52.72

Wall Thickness (Metres): .48

Inside Diameter of the Casing (Metres): 15.86

Depth of the Casing (Metres): +.45 to 6.40

Ministry Use Only

Audit No. z 77392

Well Contractor No.

Date Received (yyyy/mm/dd) OCT 14 2008

Date of Inspection (yyyy/mm/dd)

Remarks

0506E (11/2006)

Ministry's Copy