

May 16, 2023



PH4600-LET.01.REV.01

Premier Bus Lines Inc.
135 Cardevco Road
Ottawa, Ontario
K0A 1L0

Attention: Eric Hochgeschurz

Subject: **Hydrogeological Assessment and Terrain Analysis**
135 Cardevco Road
Ottawa (Carp), Ontario

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INTRODUCTION

Further to your request, Paterson has conducted a Hydrogeological Assessment and Terrain Analysis in support of a Site Plan Control Application for the proposed commercial building renovation located at 135 Cardevco Road in Ottawa (Carp), Ontario.

The purpose of this work has been to determine the suitability of the water supply aquifer underlying the site to support the Site Plan Application for a proposed renovation.

The Subject Site consists of a 0.20 ha lot and is currently occupied by a commercial building with associated private infrastructure. The ground surface generally slopes towards the north-east while the general groundwater flow is likely towards the south towards the local watercourse.

The Subject Site is bordered on all sides by commercial properties and fronts onto Cardevco Road to the northeast. The subject site itself and the surrounding commercial areas are zoned RG4 for Rural General Industrial Subzone 4 (GeoOttawa).

A Hydrogeological pre-consultation was completed with a City of Ottawa Hydrogeologist on August 31, 2022. The City Hydrogeologist suggested that additional sampling be completed during the 8-hour pumping test for Petroleum Hydrocarbons (PHC's) in addition to the standard Subdivision Package suite of parameters, trace metals and Volatile Organic Compounds (VOC's) required by the City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).





DESCRIPTION OF SUBJECT SITE

The subject site is an approximately 0.20 ha lot and is currently occupied by a one story commercial building. The Site Plan application is for a proposed renovation. A portion of the existing building is to be demolished and replaced with a new addition which will be smaller than the existing building. Please refer to Figure-1 Key Plan and Arbaum Architects Drawing A-010, Demolition / New Site Plan dated Jan 21, 2022 attached for the proposed site location and site layout.

The subject site is currently serviced by an onsite sewage system and a private drilled well. A new sewage system is proposed to be located in the same location as the old sewage system. Paterson has completed a replacement sewage system design for the proposed development, due to the nitrate reduction required a part of the Nitrate Impact Assessment (NIA). A septic flow calculation was completed and resulted in a total daily water demand calculation of 1,026 L/day. Please refer to Paterson Drawing PH4600-1(rev.01) – Sewage System Layout Plan dated October 2022 attached for specific details of the new sewage system.

The existing well, hereafter referred to as Test Well 1 (TW1) is the well which is currently servicing the existing building and will continue to service the building following the completion of the proposed renovation.

The suitability of the aquifer to supply the subject site was assessed using the methodology provided in City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).

FIELDWORK PROGRAM

Well Inspection

A visual inspection of TW1 was performed by Paterson personnel which confirmed that the well casing and cap are in good condition. The final grading around the well will be sufficiently graded to direct surface water away from the wellhead (as required by O.Reg 903) at the time of the new sewage system installation. The stickup was measured to be 0.51 m above ground surface. Based on a visual inspection by Paterson personnel, the well was deemed to be in good condition.

Well Testing

As a means to demonstrate the adequacy of the aquifer underlying the subject lands, with respect to water quality and quantity, the existing drilled well (TW1) on the subject site was tested. TW1 has a Water Well Record (WWR) Well ID of A134668. TW1 has a 152.4 mm diameter steel casing that extends to 6.7 m below ground surface (bgs) with a 0.51 m stick up. The well itself extends to a depth of 30.5 m bgs. Based on available geological mapping, the drift thickness at TW1 varies from 5 to 10 m. Refer to Paterson



Drawing PH4600-1(rev.1) – Sewage System Layout Plan, attached, for the approximate location of TW1.

As a means to evaluate the water supply aquifer intercepted by the well, the well was subjected to an 8-hour constant rate pumping test. The pumping test was conducted on September 22, 2022 under the full-time supervision of Paterson personnel. Prior to the pumping test the well was disinfected as per the MECP Disinfection Instruction Sheet (attached), and a data-logger was installed to monitor the background groundwater levels.

The existing submersible pump was used for the 8-hour pumping test. A licensed water well technician (Air Rock) completed the necessary plumbing related activities. The discharge line was placed at a sufficient distance to ensure that the discharge water was being directed away from the well as well as any septic systems in the area. Upon completion of the test, the system was returned to its normal configuration.

The pumping test was carried out at a pumping rate of 27 L/min for a duration of 8 hours. During the pumping test, the pumping rate was periodically measured using the timed volume correlation method. The pump rate was maintained within 5% of the selected pump rate. The static water level was recorded manually and an electric datalogger (VanEssen TD-Diver) was installed in the test well prior to the start of the pumping test. The selected rate of 27 L/min provides approximately 8.5 times the maximum total daily design volume for the septic system during the 8 hour pumping test. The rate was determined to be representative of a flow rate which would be in excess of what the development would require.

The data logger recorded water levels at 30 second intervals. In addition, manual water level readings were taken at periodic intervals during the test.

Recovery data was collected from the well following the completion of the pumping. The well was noted to have achieved 95% recovery approximately 21 minutes after the completion of pumping.

Groundwater samples were collected at 4 hours and 8 hours after the start of pumping. Prior to collection of the groundwater samples, the free chlorine residual was verified as non-detectable. The water samples were submitted for comprehensive testing of bacteriological, chemical, and physical water quality parameters consistent with the standard “Subdivision Supply” suite of parameters plus trace metals, VOCs, and PHCs.

All samples were collected unfiltered and unchlorinated and were placed directly into clean bottles supplied by the analytical laboratory. Samples were placed immediately into a cooler with ice and were transported directly to Environmental Testing Canada Inc.(Eurofins) laboratory in Ottawa. All samples were received by the laboratory within 24 hours of collection.



A series of field tests of the pumped water were carried out at the well head during the 8 hour pumping test. The parameters tested at the well head included: pH, total dissolved solids, conductivity, turbidity, true colour, and temperature.

Aquifer Analysis

Water Quantity

Pumping test data was analyzed using AQTESOLV Pro Version 4 aquifer analysis software package by HydroSOLVE Inc. Drawdown data was measured using an electronic water level tape and an electronic datalogger unit.

AQUIFER PARAMETER	RESULT OF ANALYSIS
Transmissivity (m ² /day)	17.2
Pumping Rate (L/min)	27
Pre-test Static Water Level (m)	2.3
Post-test Static Water Level (m)	Max – 4.3, End – 3.7
Available Drawdown (m)	28.2
% Drawdown During Pump Test (%)	7
Specific Capacity (L/min/m drawdown)	13.5

The drawdown data was analyzed using the Theis and Cooper Jacob methods of analysis. Aquifer transmissivity is estimated to be 17.2 m²/day. Refer to the Theis and Cooper Jacob methods of analysis data sheets attached to this report.

As demonstrated by the measured values, the water level in the well was increasing variably as the pumping test was performed. As the water level increased variably during the constant pumping portion of the test, it is expected that the aquifer which TW1 accesses is connected with other wells in the area. The water level variations occurred within the expected commercial operating hours in the immediate surrounding vicinity of the subject site.

The pumping test results show that TW1 has a high yield to support the water demands that may be required. Overall maximum drawdown at a constant pumping rate for a period of 8 hours was approximately 4.3 m at approximately 2 hours into the pumping test (7% of the available drawdown). The final drawdown at the end of the 8 hour pumping test was 3.7 m (5 % of the available drawdown) 95% recovery was achieved approximately 21 minutes after the end of pumping.

The total volume of water pumped during the 8 hour pumping event was approximately 12,960 L. This is approximately 8.5 times the maximum total daily design volume of water required to support the Site Plan Control Application.



The suitability of the aquifer to supply the proposed Site Plan Application for the proposed commercial modification was assessed using the methodology provided in the City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).

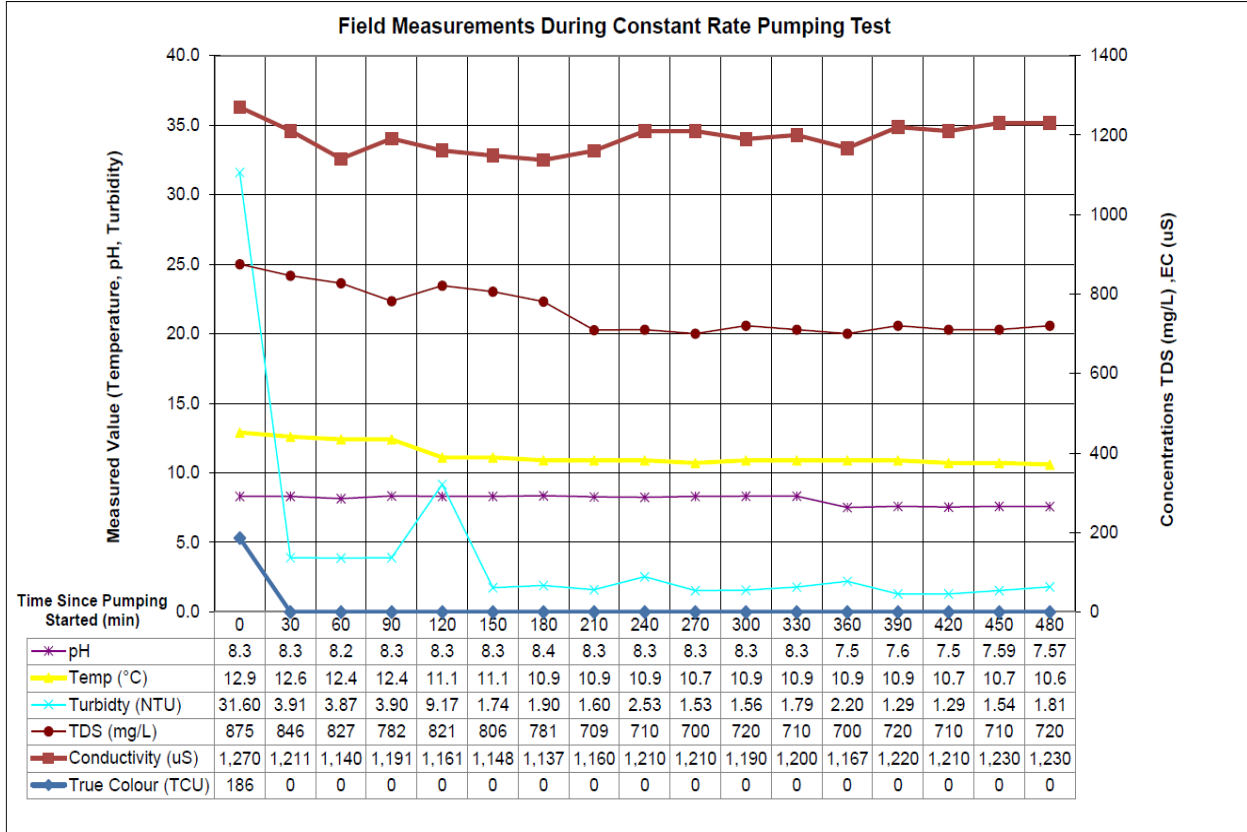
Based on the information summarized in Table 1, it is readily apparent that the water supply well has intercepted an adequately strong water supply aquifer which has sufficient quantity to service the proposed Site Plan Control Application.

Given the analyses presented and summarized above, it is our opinion that there is an adequate supply of water to support the proposed Site Plan Control Application. Available water well records (WWR) of the neighboring properties on the MECP Well Record mapping website indicated that the wells were screened in limestone. Surrounding WWR's are attached to this report.

Water Quality

Field Data

Turbidity, electrical conductivity, total dissolved solids (TDS), pH, true color and temperature were measured at the wellhead during the pumping test. The measurements and time intervals for each of these parameters are summarized on the graphical representation below. In addition, a HACH Pocket Colorimeter II chlorine reader was used to measure the free chlorine residual level. No chlorine residual was detected in the discharge water prior to the collection of the water samples.



Laboratory Data

The Subdivision Package suite of parameters and trace metals laboratory water quality obtained from the pumping test of TW1 is provided in Table 2a and 2b below and the laboratory analyses reports can be found attached. VOC and PHC laboratory analytical testing were completed and measured to be non-detect in the sample results. All laboratory test results can be found attached to this report.



TABLE 2a: GROUNDWATER MICROBIOLOGY & GENERAL GEOCHEMISTRY					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				2022-09-22	2022-09-22
MICROBIOLOGICAL					
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0
Total Coliforms	ct/100mL	0	MAC	0	0
GENERAL CHEMICAL - HEALTH RELATED					
Fluoride (F)	mg/L	1.5	MAC	0.41	0.42
Ammonia (N-NH ₃)	mg/L	-	-	0.14	0.13
Nitrite (N-NO ₂)	mg/L	1	MAC	<0.10	<0.10
Nitrate (N-NO ₃)	mg/L	10	MAC	<0.10	<0.10
Total Kjeldahl Nitrogen	mg/L	-	-	0.36	0.19
Turbidity (Field)	NTU	1.0 (5.0)	MAC/AO	2.53	1.81
Turbidity (Laboratory)	NTU	1.0 (5.0)	MAC/AO	13.2	11.6
GENERAL CHEMICAL - AESTHETIC RELATED					
Alkalinity (as CaCO ₃)	mg/L	30-500	OG	287	289
Chloride (Cl)	mg/L	250	AO	185	191
Colour (Apparent)	TCU	5	AO	90	86
Colour (Field - True)	TCU	5	AO	0	0
Conductivity	uS/cm	-	-	1,160	1,180
Dissolved Organic Carbon	mg/L	5	AO	3.50	3.20
Hardness (as CaCO ₃)	mg/L	100	OG	457	462
Ion Balance	unitless	-	-	1.01	1.01
pH	unitless	6.5-8.5	AO	8.15	8.15
Phenols	mg/L	-	-	<0.001	<0.001
Sulphate (SO ₄)	mg/L	500	AO	75	75
Sulphide (S ₂)	mg/L	0.05	AO	0.02	0.02
Tannin & Lignin	mg/L	-	-	1.30	1.20
Total Dissolved Solids	mg/L	500	AO	754	767

1. ODWS identifies the following types of parameters:

MAC = Maximum Allowable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective



TABLE 2b: GROUNDWATER GEOCHEMISTRY - METALS					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				2022-09-22	2022-09-22
Volatiles					
Aluminum (Al)	mg/L	0.1	OG	<0.01	<0.01
Antimony (Sb)	mg/L	0.006	IMAC	<0.0005	<0.0005
Arsenic (As)	mg/L	0.01	IMAC	<0.001	<0.001
Barium (Ba)	mg/L	1.0	MAC	0.58	0.59
Beryllium (Be)	mg/L	-	-	<0.0005	<0.0005
Boron (B)	mg/L	5.0	IMAC	0.02	0.02
Cadmium (Cd)	mg/L	0.005	MAC	<0.0001	<0.0001
Calcium (Ca)	mg/L	-	-	127	129
Chromium (Cr)	mg/L	0.05	MAC	<0.001	<0.001
Cobalt (Co)	mg/L	-	-	<0.0002	<0.0002
Copper (Cu)	mg/L	1.0	AO	<0.001	<0.001
Iron (Fe)	mg/L	0.3	AO	1.34	1.21
Lead (Pb)	mg/L	0.01	MAC	<0.001	<0.001
Magnesium (Mg)	mg/L	-	-	34	34
Manganese (Mn)	mg/L	0.05	AO	0.13	0.13
Mercury (Hg)	mg/L	0.001	MAC	<0.0001	<0.0001
Molybdenum (Mo)	mg/L	-	-	<0.005	<0.005
Nickle (Ni)	mg/L	-	-	<0.005	<0.005
Potassium (K)	mg/L	-	-	3	3
Selenium (Se)	mg/L	0.05	MAC	<0.001	<0.001
Silver (Ag)	mg/L	-	-	<0.0001	<0.0001
Sodium (Na)	mg/L	200	AO	79	82
Strontium (Sr)	mg/L	-	-	0.72	0.724
Thallium (Tl)	mg/L	-	-	<0.0001	<0.0001
Uranium (U)	mg/L	0.02	MAC	<0.001	<0.001
Vanadium (V)	mg/L	-	-	<0.001	<0.001
Zinc (Zn)	mg/L	5.0	AO	<0.01	<0.01

1. ODWS identifies the following types of parameters:

MAC = Maximum Acceptable Concentration

IMAC = Interim Maximum Acceptable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective

The bacteriological test results (Certificate of Analysis – Report No. 1986671) indicated that the test samples at the 4 and 8 hour interval were non-detect (0 ct/100 mL) for E.Coli and Total Coliforms.



The water quality of the subject water supply well meets all the Ontario Drinking Water Standards maximum acceptable concentrations (MAC). Furthermore, the water meets all of the Aesthetic Objectives (AO) and Operational Guidelines (OG) with the exception of the following.

- Hardness (as CaCO_3)
- Total Dissolved Solids (TDS)
- Iron (Fe)
- Manganese (Mn)

Exceedances of the above parameters are not uncommon of the water supply in the subject aquifer. Each of these groundwater parameters are discussed in detail below.

Hardness as CaCO_3

Hardness, expressed as calcium carbonate, is an operation guideline and does not appear in the ODWS. Rather, it appears in the Technical Support Documents for Ontario Drinking Water Standards, Objectives and Guidelines as a parameter with an operational guideline at 100 mg/L. At the measured concentrations of 457 and 462 mg/L, the water is considered to be hard, however, it is below the reasonable treatable limit of 500 mg/L specified in Table 3 of the MOECC guidance document Procedure D-5-5 (1996). The hardness concentration can be treated using conventional softening technologies.

Total Dissolved Solids (TDS)

TDS refers to the concentration of inorganic substances dissolved in water. The main constituents are typically chloride, sulphates, calcium, magnesium, and bicarbonates. There are various levels of the constituents at a low level and it is not anticipated that they will cause an issue with taste. A point of use reverse osmosis unit may be installed if the owner desires for drinking purposes. As such, no taste problems will occur when the system is used.

The Langelier calculation provided an LSI of 1.0. Based on the evaluation of the result, the water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive). Based on the range of stability in the positive direction, there are no mitigative measures needed. See Langelier Saturation Index Calculation attached for calculation details.

Iron

Concentrations of iron above 0.3 mg/L can contribute to staining of fixtures and a metallic taste at higher concentrations. Precipitation of iron can promote the growth of iron bacteria in pipes. The concentration of iron in the groundwater in TW1 was measured to be 1.21 and 1.31 mg/L. The concentration of iron in the groundwater in the test well is considered to be reasonably treatable in accordance with Procedure D-5-5. It is recommended that an iron filter be used to reduce the levels of iron and reduce the potential for excessive precipitate occurring in the water supply system, if desired.



Manganese

The manganese concentration results from the laboratory test samples yielded a value of 0.13 mg/L in the onsite well, which is above the aesthetic objectives in the ODWSOG of 0.05 mg/L. Procedure D-5-5 gives a maximum concentration considered reasonably treatable for manganese as 1.0 mg/L. A conventional water softener or manganese greensand filter can be used to reduce the levels of manganese, if desired.

Colour

Colour may occur in drinking water for several reasons. It may be due to organic substances from the decay of vegetation, or the presence of metals such as iron, manganese, and copper, which are abundant in nature. The provincial aesthetic objective for colour in drinking water is 5 True Colour Units (TCU). The federal (Health Canada) guideline aesthetic objective limit for colour is 15 TCU (Guidelines for Canadian Drinking Water Quality, Health Canada June 2019). Procedure D-5-5 gives a maximum concentration considered reasonably treatable for colour as 7 TCU. As colour is a strictly aesthetic parameter, it can be reduced from the water supply, if desired, through the use of a manganese greensand treatment.

During the field pumping test, a DR900 colorimeter was used to measure true colour in the groundwater at regular intervals. True colour in the groundwater was measured as 0 TCU which is below the aesthetic guidelines of 15 TCU. The elevated colour levels detected in the lab samples is attributed to the precipitation of iron and manganese out of the groundwater.

Turbidity

Turbidity, which is generally an aesthetic parameter, was detected in the laboratory test samples at values of 13.2 and 11.6 NTU in the 4 and 8 hours tests, respectively. Field testing detected the samples at values of 2.53 and 1.81 NTU in the 4 and 8 hour field tests, respectively. Continued pumping showed a decrease towards the end of the test. It is expected that continued use of the well would further reduce turbidity values. The elevated turbidity in the laboratory analyzed samples is attributed to the precipitation of iron and manganese.

The ODWS maximum acceptable concentration for turbidity in drinking water entering the distribution system is 1 NTU. The Aesthetic Objective for turbidity in drinking water reaching the consumer is 5 NTU. The field test parameters are below the 5 NTU objective.

Sodium

Sodium (Na), an aesthetic parameter, was detected in the laboratory test sample at concentrations of 79 and 83 mg/L, which does not exceed the ODWS aesthetic objective of 200 mg/L. Although sodium is not toxic and no maximum acceptable concentration has been set, concentrations above 20 mg/L require that the Medical Officer of Health be



notified of the water quality results, so that this information may be passed on to local physicians for use in treatment of those requiring a sodium-restricted diet.

Terrain Analysis

Surficial Geology

A series of test pits were put down on the subject parcel to delineate the subsurface soil conditions as part of the geotechnical investigation (Paterson Report PG6018-1 dated November 30, 2021). On November 12, 2021 five (5) test pits were excavated on the property for the design of the proposed renovation and its associated infrastructure. The test pits were advanced to a maximum depth of 3.5 m below ground surface (bgs). Two test pits were excavated within the vicinity of the proposed southern warehouse expansion, whereas the other three test pits were excavated adjacent to the exterior footings of the northern portion of the existing warehouse. The locations of the test pits on the property are delineated on the Test Hole Location Plan, drawing PG6018-1, attached.

The test pit locations were recorded and the subsurface conditions, including the soil morphology and depth to the groundwater table (if encountered), were carefully observed and recorded. The soils encountered were classified texturally in the field, and later reviewed in the laboratory.

Generally, the subsurface profile at the test hole locations were observed to consist of asphalt or topsoil overlying a fill layer consisting of crushed stone and brown silty sand with gravel, occasional cobbles and trace asphalt. A brown silty sand was noted to be underlying the fill layer in all test hole locations, except for TP5-21 which consisted of a brown silty sand with gravel, cobbles and boulders (glacial till). Refusal to excavation was encountered in TP5-21 at a depth of 2.2 m bgs. Groundwater was encountered at TP4-21 at 2.0 m bgs, and at TP5-21 at 1.9 m bgs.

It should be noted that groundwater levels can fluctuate both seasonally and in conjunction with precipitation events. Therefore, the groundwater levels could vary at the time of construction.

Reference should be made to the test pit logs appended to this report for the details of the soil profiles encountered at each test hole location. The client should be aware that any information pertaining to soils are furnished as a matter of general information only and borehole descriptions are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

Hydrogeological Sensitivity of the Site

The subject site currently consists of a commercial building, associated infrastructure and private servicing. The subject site is serviced by a private well and septic system. The private well is not used for drinking. The subject site is currently occupied by a one-story commercial building which fronts onto Cardevco Road. The subject site is bordered to the



north, east and west by developed commercial properties and to the south by Cardevco Road followed by additional developed commercial properties. All surrounding properties are on private services. The adjacent properties are serviced by private wells and septic systems.

The overburden at the test hole locations generally consists of a fill overlying a brown silty sand. Refusal to excavation was only encountered in TP5-21 at a depth of 2.2 m bgs. According to available geological mapping, the drift thickness within the site varies from 5 to 10 m bgs.

According to the geotechnical field investigation, the overburden thickness was observed to be greater than 2 m. As the proposed site does not have bedrock within 2 m of the ground surface, the site is not considered hydrogeologically sensitive. Separation distances are not required to be increased between the septic components and the onsite well.

To corroborate our position in this matter, the water quality of the bedrock aquifer targeted by the onsite drilled potable supply well shows no indication of surface water or surface impacts from sewage system effluent.

Conceptual Lot Development Plan

It is proposed to renovate the existing building one story commercial building. The location of the existing and proposed structures can be found on the attached Arbaum Architects Drawing A-010, Demolition / New Site Plan dated Jan 21, 2022. The proposed private servicing is outlined in Paterson drawing PH4600-1(rev.01) – Sewage System Layout Plan, attached. It illustrates that the proposed design layout is adequate to accommodate the associated private services and meet all the regulated separation criteria. Please note that the proposed design layout is not meant to restrict the location of the proposed buildings or private services. The design will be reviewed by the Ottawa Septic System Office (OSSO) and will be constructed in accordance with the required regulations. The OSSO requires inspections during construction in order to ensure compliance.

Proposed Sewage System

Paterson has completed a replacement sewage system design for the proposed development due to Site Plan requirements related to the Nitrate Impact Assessment (NIA). A septic flow value was calculated for the proposed building renovation and resulted in a total daily design sewage flow (TDDSF) of 1,026 L/day. A Design Swage flow rate of 1,500 L/day was used for design purposes. Refer to the Paterson Drawing PH4600-1(rev.1) and Paterson Drawing PH4600-2(rev.1) attached for more specific details. The approved OSSO septic permit has been included in the Site Plan application submission package. The septic flow values were calculated in accordance with the OBC and are as follows:

- Office space with an area of 90 m² x 75 L/day per 9.3 m² = 726 L/day
- Number of loading bays (2 x 150 L/day) = 300 L/day



The resulting total daily design sewage flow (TDDSF) is 1,026 L/day, however a design sewage flow rate of 1,500 L/day was used for the OSSO application.

Predictive Nitrate Impact Assessment

In order to demonstrate that private services would adequately support the proposed commercial development, a predictive nitrate impact assessment for the subject site was completed. The values shown in the Predictive Nitrate Impact Assessment attached to this report are summarized below.

<input type="checkbox"/> Site area	0.20 ha
<input type="checkbox"/> Impervious area (%)	47 %
<input type="checkbox"/> Daily sewage flow	1.026 m ³ /d
<input type="checkbox"/> Concentration of nitrate in effluent (Value based on typical effluent concentration)	40 mg/L
<input type="checkbox"/> Concentration of nitrate in effluent with treatment (Value based on nitrate reduction system (WaterNOX-LS) with 70% nitrate reduction)	12 mg/L
<input type="checkbox"/> Surplus Water (The surplus water value was estimated based on Environment Canada Climate Office values with a soil type comprised of fine sandy loam (Urban Lawns) and anthropogenic sources.)	379 mm/yr
<input type="checkbox"/> Combined infiltration factor based on:	0.70
• Topography infiltration factor	0.20
• Soil texture infiltration factor	0.40
• Cover infiltration factor	0.10

The topography infiltration factor of 0.20 is based upon a rolling land with an average slope of 2.8 to 3.8 m/km. The soil texture infiltration factor was based upon an “open sandy loam” with a value of 0.4 which is a reasonable generalization based upon the site investigations and available geological mapping. The “cover infiltration factor” was calculated at 0.1 based upon the minimum value for cultivated land.

The calculation for a conventional septic system results in a predicted nitrate concentration of 22.67 mg/L nitrate for the subject site, using a value of 40 mg /L nitrate concentration within the effluent. This value was based upon a daily sewage flow of 1,026 L/day. It is expected that the actual usage should be lower.

An existing approved tertiary treatment system capable of reducing the nitrate loading in the effluent is the Waterloo Biofilter brand. The system has an available nitrate reduction of 25 to 35% based upon the standard single pass system and 50 to 65% based upon a



double pass re-circulation system. With the addition of the WaterNOx-LS system, greater than 70% total nitrogen removal can be achieved. This would reduce the nitrate concentration in the effluent from 40 mg/L down to as low as 12 mg/L. Provided the value of 22.67 mg/L of nitrates for the fully sized system, a 70% reduction would provide a value of 6.8 mg/L. A WaterNOx-LS system has been included in the new septic design for the property, as shown in the attached Paterson drawing, PH4600-1(rev.01).

Based on the results of the predicted nitrate impact assessment, it is our opinion that the property can adequately support the proposed renovation without having an adverse impact on the underlying bedrock aquifer.

CONCLUSIONS

Based on the information contained within the body of this report the following conclusions can be drawn:

1. The water supply aquifer intercepted by the existing well is considered to be adequate to support the water quantity demands for the proposed renovation.
2. Based on a visual inspection performed by Paterson personnel, the well casing, stickup, and well cap are in compliance with O.Reg 903. The final grading around the well will be sufficiently graded to direct surface water away from the wellhead at the time of the new sewage system installation.
3. As TW1 currently provides potable water to the existing building, the client is familiar with the quality of the groundwater.
4. The preferred water supply intercepted by TW1 contains a water supply that is potable, and contains only elevated concentrations of hardness, TDS, iron, and manganese. The noted parameters can be treated with current readily available water conditioning equipment.
5. A residential grade water softener is recommended to facilitate the reduction of the hardness concentration. If a water softener is used for the proposed development, the owner should be made aware that additional sodium will be added to the water to reduce hardness. If desired, a point-of-use reverse osmosis system can be used to provide a drinking tap source.
6. If desired, the client can use an iron filter to treat the potential iron values.
7. If desired, the client can use manganese greensand treatment to treat the potential colour values.



8. The sodium concentration was measured to be above the 20 mg/L reporting limit and, as such, the Medical Officer of Health for the City of Ottawa should be informed to assist area physicians in the treatment of local residents on sodium reduced diets.
9. The site is not considered hydrogeologically sensitive.
10. The predicted nitrate concentrations at the property boundary is calculated to be below the required 10 mg/L threshold when a standard denitrification system such as the Waterloo Biofilter WaterNOx-LS system is used.
11. A Sewage System Permit and Building Permit need to be issued prior to the commencement of construction on the proposed warehouse addition or the proposed septic system.
12. The results of the Hydrogeological Assessment and Terrain Analysis have provided satisfactory evidence that the subject site can support the proposed renovation with respect to water quality, quantity and sewage system placement.

We trust that the current submission satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Alexander Schopf, PhD, EIT



Erik Ardley, P.Geo

Attachments:

- Key Plan
- Arbaum Architects Drawing A-010, Demolition / New Site Plan dated Jan 21, 2022
- MECP Water Well Records
- Eurofins Certificate of Analysis
- Paterson Test Pit Logs
- AQTESOLV - Pumping Test Analysis Reports
- Nitrate Impact Assessment Calculations
- Langelier Saturation Index (LSI) Calculation
- MECP Disinfection Instruction Sheet
- Paterson Drawing PG6018-1 - Test Hole Location Plan
- Paterson Drawing PH4600-1(rev.1) - Sewage System Layout Plan
- Paterson Drawing PH4600-2(rev.1) - Sewage System Details and Notes



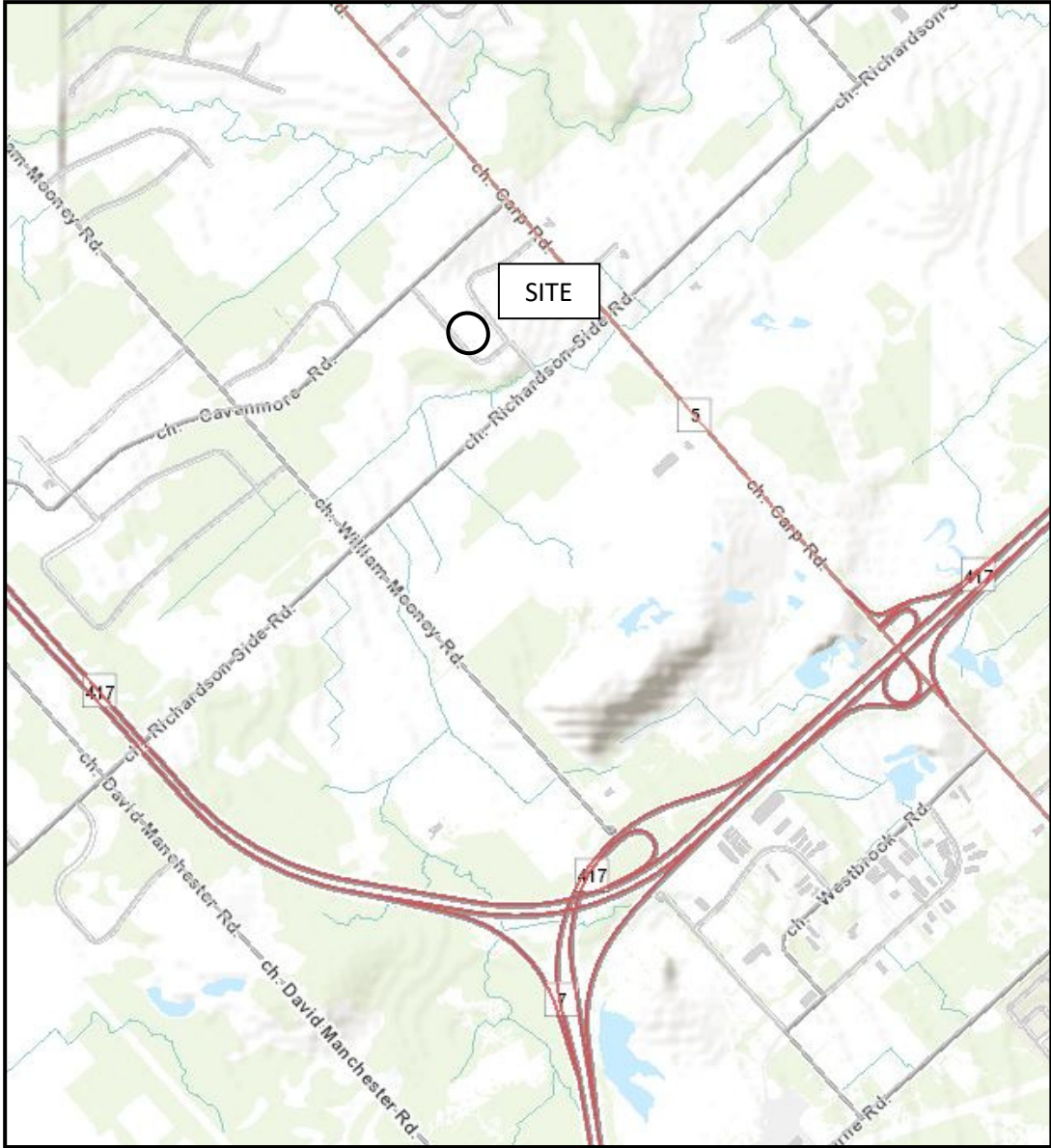


FIGURE 1
KEY PLAN

Measurements recorded in: Metric Imperial

A134668

Well Owner's Information

First Name CDL HOLDINGS	Last Name / Organization	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 145 Cardevco Road RR2	Municipality Carp	Province On	Postal Code K0A1H0
		Telephone No. (inc. area code) 613 223 7839	

Well Location

Address of Well Location (Street Number/Name) 135 Cardevco Road	Township Carp	Lot 23	Concession
County/District/Municipality Ottawa	City/Town/Village Carp	Province Ontario	Postal Code K0A1H0
UTM Coordinates Zone Easting Northing NAD 83 18 42 32 54 50 15 930	Municipal Plan and Sublot Number P14M356 + 23RP 4R8368	Other Part 7 + 10	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
	Clay/Sand/stones			0'	16'
black	Limestone			16'	100'

Annular Space		
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)
0'	22'	2 Bags cement
		4 Bags quick grout
		Volume Placed (m³/ft³) 0.044 0.088

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Public
<input checked="" type="checkbox"/> Rotary (Conventional)	<input checked="" type="checkbox"/> Domestic
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Commercial
<input type="checkbox"/> Boring	<input type="checkbox"/> Municipal
<input type="checkbox"/> Air percussion	<input type="checkbox"/> Test Hole
<input type="checkbox"/> Other, specify	<input type="checkbox"/> Cooling & Air Conditioning

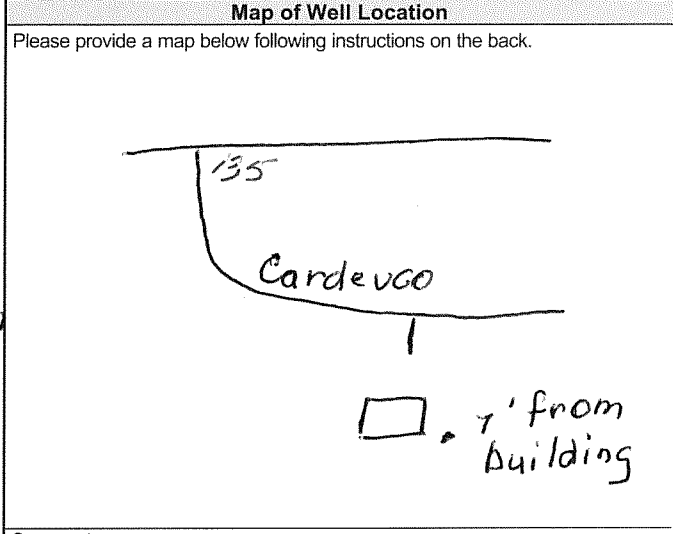
Construction Record - Casing			Status of Well		
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To	<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
6"	Steel	48cm	0'	22'	

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

Water Details		Hole Diameter	
Water found at Depth 79 (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft) From	To
Water found at Depth 82 (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	0'	22'
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested		Diameter (cm/in) 25.4cm

Well Contractor and Well Technician Information			
Business Name of Well Contractor WIFE HALL + SONS WELL DRILLING	Well Contractor's Licence No. 215 158		
Business Address (Street Number/Name) 256 Hall Shore Rd RR1 McDonald's Corners	Municipality		
Province On	Postal Code K0G1M0	Business E-mail Address wilfhalltd@bellnet.ca	
Bus. Telephone No. (inc. area code) 613 278 2933	Name of Well Technician (Last Name, First Name) Hall Mark		
Well Technician's Licence No. T22228	Signature of Technician and/or Contractor Mark Hall	Date Submitted 2012 08 09	

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input checked="" type="checkbox"/> Other, specify cloudy	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: Pump intake set at (m/ft) 75' Pumping rate (l/min / GPM) 15 gpm. Duration of pumping 1 hrs + 0 min Final water level end of pumping (m/ft) 11' If flowing give rate (l/min / GPM) 0 Recommended pump depth (m/ft) 80' Recommended pump rate (l/min / GPM) 15 gpm. Well production (l/min / GPM) 15 gpm Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Static Level			
	1	20.8'	1	45.1'
	2	25.9'	2	35.2'
	3	29.8'	3	27.8'
	4	32.9'	4	22.9'
	5	35.4'	5	19.7'
10	47.'	10	13.7'	
15	53.5'	15	12.5'	
20	56.1'	20	11.75'	
25	56.8'	25	11.65'	
30	63.'	30	11.4'	
40	67.4'	40	11.2'	
50	67.4'	50	11.1'	
60	67.4'	60	11.05'	



Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 2012 08 09 Y Y Y Y M M D D	Ministry Use Only Audit No. 2154051 SEP 11 2012
Date Work Completed 2012 08 09 Y Y Y Y M M D D	Received	

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

11 1520138 15005 CON PLAN 4/14/84 W 3 103

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: WEST CARLETON CON. BLOCK, TRACT, SURVEY, ETC: 3 LOT: 6
DATE COMPLETED: DAY 5 MO 9 YR 85
ADDRESS: HUNTLEY MANOR DRIVE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
GREY	CLAY	SAND BOWLDER'S	PACKED	0'	16'
GREY	G-RAVEL			16'	24'

31 [Scale]

32 [Scale]

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
22	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIA. INCHES	MATERIAL	WAL. THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1.88	0'	24'
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

60 SIZES OF OPENING (SLOT NO.)

SIZE	DIAMETER	LENGTH

60 MATERIAL AND TYPE

DEPTH TO TOP OF SCREEN	INCHES	FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER

PUMPING RATE: 6 GPM

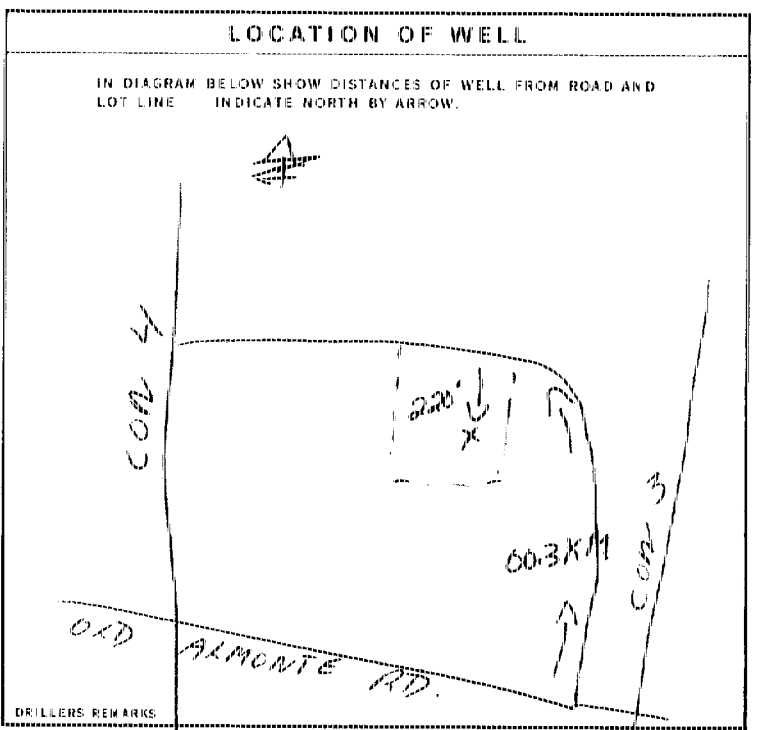
DURATION OF PUMPING: 15-16 HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
7 FEET	15 FEET	15 FEET	15 FEET	15 FEET	15 FEET	15 FEET	15 FEET

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 15 FEET

RECOMMENDED PUMPING RATE: 5 GPM



FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR: M. KAVANAGH & SON WELL DRILLING 3142
ADDRESS: R.R. #2 CARLETON PLACE
NAME OF DRILLER OR BORER: HENRY MAINS
SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY 6 NO 9 YR 85

LICENCE NUMBER: 3644

OFFICE USE ONLY

DATE RECEIVED: 01 10 85

DATE OF INSPECTION: [] INSPECTOR: []

REMARKS: []

WDE

CSS.S3

HUNTLEY MANOR?

The Ontario Water Resources Act WATER WELL RECORD

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1520279

MUNICIP

CON.

COUNTY OR DISTRICT Ottawa-Carleton	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE West Carleton-Huntley	CON. BLOCK, TRACT, SURVEY, ETC. Conc. 3	LOT 25-27 6
OWNER (SURNAME FIRST) Pri-Tec Construction Ltd.	ADDRESS Box 13090; Kanata, Ontario. K2K 1X3	DATE COMPLETED DAY 16 MO 10 YR 85	

21

U ZONE EASTING NORTHING RC ELEVATION RC BASIN CODE II III IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Sand	Boulders		0	10
Gray	Limestone		Medium Soft	10	200
Gray				200	230

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
30'	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
220'	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIA INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/88	0	22
6 1/8	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		22	200
5 7/8	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		200	230

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	31-33	DIAMETER	34-38	LENGTH	39-40
MATERIAL AND TYPE		INCHES		FEET	
		DEPTH TO TOP OF SCREEN		41-44	
				FEET	

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE 7 GPM	DURATION OF PUMPING 1 HOURS 17-18 MINS
STATIC LEVEL 8 FEET	WATER LEVEL END OF PUMPING 150 FEET	WATER LEVELS DURING 1 <input checked="" type="checkbox"/> PUMPING 2 <input type="checkbox"/> RECOVERY
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT 175 FEET	WATER AT END OF TEST 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE 5 GPM

LOCATION OF WELL

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

Carp Rd. (ac#5)

Old Almonte Rd. 0.05 mi

76 1/2" 30'

DRILLERS REMARKS:

74 FINAL STATUS OF WELL

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

75-76 WATER USE

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

77 METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR
Capital Water Supply Ltd.

LICENCE NUMBER
1558

ADDRESS
Box 490; Stittsville, Ont. KOA 3G0

NAME OF DRILLER OR BORER
S. Miller / B. Moore

LICENCE NUMBER

SIGNATURE OF CONTRACTOR
[Signature]

SUBMISSION DATE
DAY **16** MO **10** YR **85**

OFFICE USE ONLY

DATA SOURCE 58 CONTRACTOR 59-62 DATE RECEIVED
210186

DATE OF INSPECTION INSPECTOR

REMARKS

CC. ES

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1522376

MUNICIPALITY: 10 14 15 22 23 24
CONTRACTOR: 3

COUNTY OR DISTRICT: **BRITAIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **WEST CARLETON** CON. BLOCK, TRACT, SURVEY, ETC: **3**
DATE COMPLETED: 48-53
DAY: **6** MO: **6** YR: **88**
BOX 1300 KANATA DNT. K2K 1H3

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	SAND	STONE'S	PACKED	0'	9'
GREY	LIMESTONE			9'	70'
GREY BLACK	LIMESTONE			70'	130'

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
128-13	1 <input type="checkbox"/> FRESH 3 <input checked="" type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	1.88	0'	22'
6"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		22'	130'

SCREEN

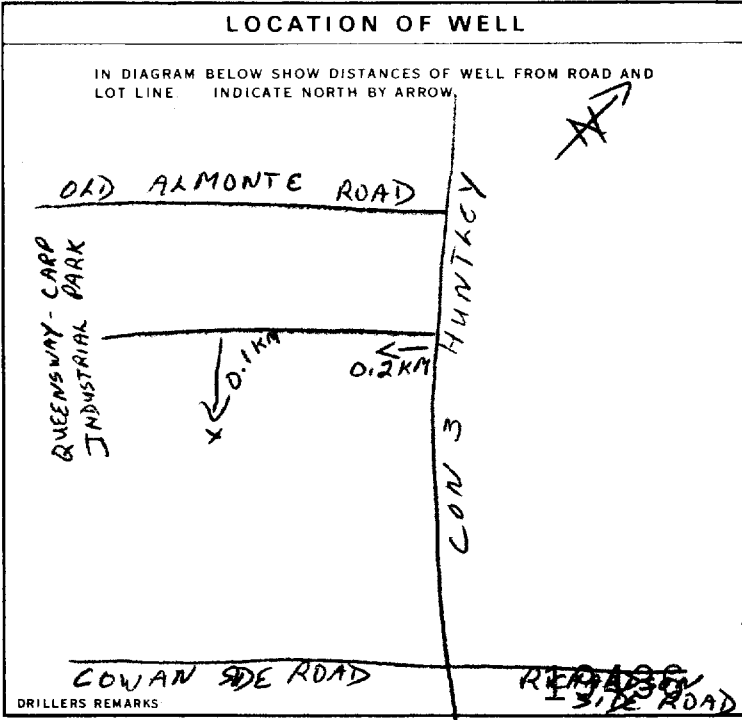
SIZE - S1 OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	12 GPM	2 HOURS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
8 FEET	80 FEET	15 MINUTES: 80 FEET, 30 MINUTES: 80 FEET, 45 MINUTES: 80 FEET, 60 MINUTES: 80 FEET
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	100 FEET	1 <input type="checkbox"/> CLEAR 2 <input checked="" type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	100 FEET	9 GPM



FINAL STATUS OF WELL

1 <input checked="" type="checkbox"/> WATER SUPPLY	8 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
2 <input type="checkbox"/> OBSERVATION WELL	9 <input type="checkbox"/> ABANDONED POOR QUALITY
3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
4 <input type="checkbox"/> RECHARGE WELL	9 <input type="checkbox"/> DEWATERING

WATER USE

1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
9 <input type="checkbox"/> NOT USED	

METHOD OF CONSTRUCTION

1 <input checked="" type="checkbox"/> CABLE TOOL	6 <input type="checkbox"/> BORING
2 <input type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING
4 <input type="checkbox"/> ROTARY (AIR)	9 <input type="checkbox"/> DRIVING
5 <input type="checkbox"/> AIR PERCUSSION	<input type="checkbox"/> DIGGING <input type="checkbox"/> OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: **M. KAVANAGH & SON WELL DRILLING** WELL CONTRACTOR'S LICENCE NUMBER: **3142**
ADDRESS: **RR2 CARLETON PLACE**
NAME OF WELL TECHNICIAN: **MIKE KAVANAGH** WELL TECHNICIAN'S LICENCE NUMBER: **T-0194**
SIGNATURE OF TECHNICIAN/CONTRACTOR: **Michael Kavanagh** SUBMISSION DATE: DAY **7** NO. **06** YR. **88**

OFFICE USE ONLY

DATA SOURCE: **3142** CONTRACTOR: **3142** DATE RECEIVED: **JUN 13 1988**
DATE OF INSPECTION: _____ INSPECTOR: _____
REMARKS: _____

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
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1522596

MUNICIPALITY 15005

CON. 15 22 23 24

COUNTY OR DISTRICT: Ottawa-Carleton TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: West Carleton - Huntley CON. BLOCK, TRACT, SURVEY, ETC: Conc. 3 LOT: 25-27 6

DATE COMPLETED: DAY 04 MO 07 YR 88

ADDRESS: 017 Route 117; St. Janvier, Mirabel, P.Q.

WELL NO: JON 110

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Clay		Packed	0	6
Gray	Clay	Boulders	Packed	6	9
Gray	Clay	Sand & Gravel	Packed	9	16
Gray	Limestone	Brown layers	Medium	16	125

31 32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
92	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
118	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	.188	0	22
6	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		22	125
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			27-30

SCREEN

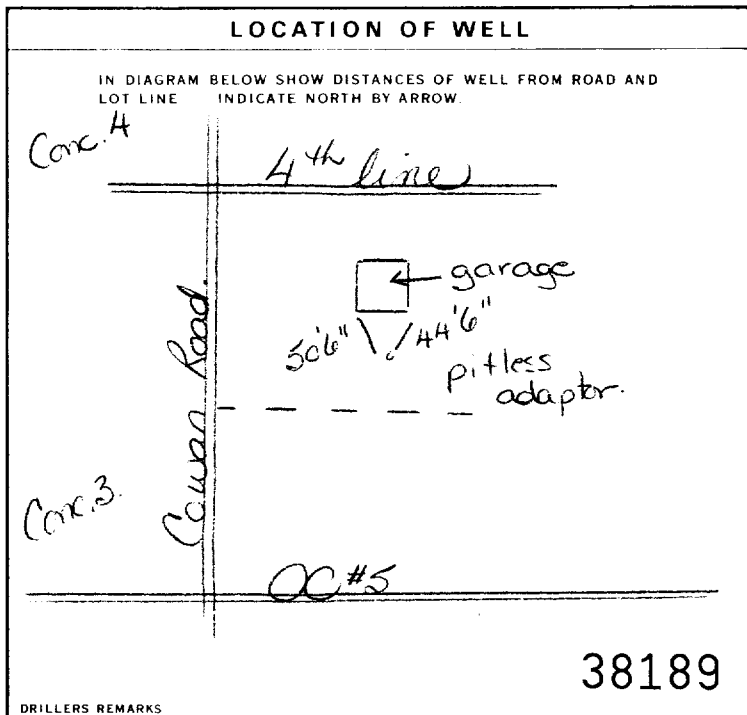
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN	41-44
		FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	20 GPM	2 15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
3 FEET	20 FEET	15 MINUTES 20 FEET 20 FEET 20 FEET 20 FEET 20 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	60 FEET	5 GPM



FINAL STATUS OF WELL

1 <input checked="" type="checkbox"/> WATER SUPPLY	5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
2 <input type="checkbox"/> OBSERVATION WELL	6 <input type="checkbox"/> ABANDONED POOR QUALITY
3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
4 <input type="checkbox"/> RECHARGE WELL	8 <input type="checkbox"/> DEWATERING

WATER USE

1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
<input type="checkbox"/> OTHER	9 <input type="checkbox"/> NOT USED

METHOD OF CONSTRUCTION

1 <input type="checkbox"/> CABLE TOOL	5 <input type="checkbox"/> BORING
2 <input type="checkbox"/> ROTARY (CONVENTIONAL)	6 <input type="checkbox"/> DIAMOND
3 <input type="checkbox"/> ROTARY (REVERSE)	7 <input type="checkbox"/> JETTING
4 <input type="checkbox"/> ROTARY (AIR)	8 <input type="checkbox"/> DRIVING
5 <input checked="" type="checkbox"/> AIR PERCUSSION	9 <input type="checkbox"/> DIGGING <input type="checkbox"/> OTHER

CONTRACTOR

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

ADDRESS: Box 490; Stittsville, Ont. K0A 3G0

NAME OF WELL TECHNICIAN: S. Miller WELL TECHNICIAN'S LICENCE NUMBER:

SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature] SUBMISSION DATE: DAY 04 MO 07 YR 88

OFFICE USE ONLY

DATA SOURCE: 1558 CONTRACTOR: 1558 DATE RECEIVED: SEP 01 1988

DATE OF INSPECTION: INSPECTOR:

REMARKS:



WATER WELL RECORD

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

11

1523221

MUNICIP 15005

CON. CON.

03

COUNTY OR DISTRICT: Ontario Carleton Place TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: WEST CARLETON CON. BLOCK, TRACT, SURVEY ETC: #3 LOT: 6

DATE COMPLETED: DAY 9 MO 9 YR 88

ING RC ELEVATION RC BASIN CODE II III IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	Topsoil		PACKED	0	1'
BROWN	SAND		FINE	1	10'
BROWN	SAND	Boulders GRAVEL	LOOSE	10'	16'
GREY	LIMESTONE	Black limestone & Quartz	MED, HARD	16'	45'

31

32

41 WATER RECORD			
WATER FOUND AT - FEET	KIND OF WATER		
26	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS
41	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERALS	6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD				
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4"	1 <input checked="" type="checkbox"/> STEEL	188	0	19'
6"	1 <input type="checkbox"/> STEEL		19	45'

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

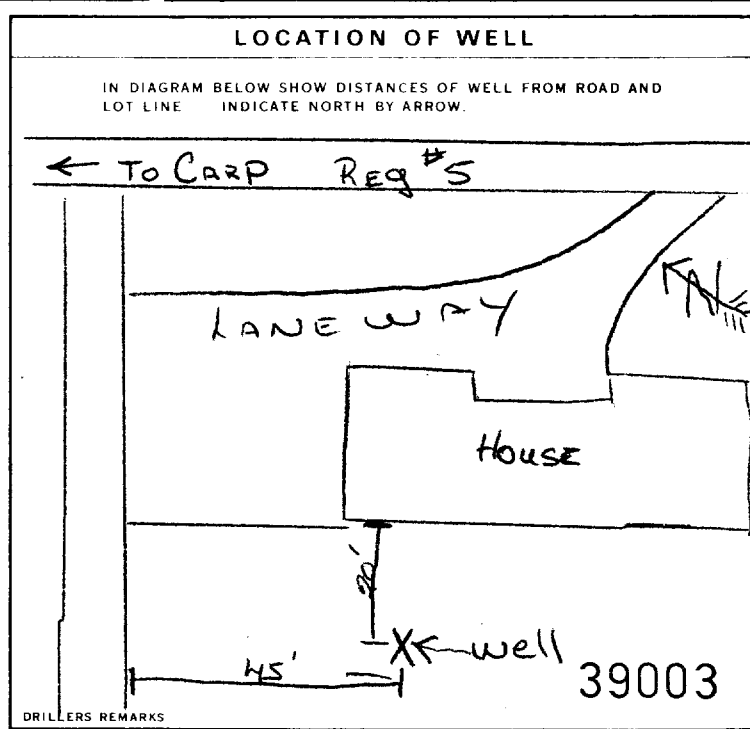
61 PLUGGING & SEALING RECORD			
DEPTH SET AT - FEET		MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER ETC)	
0	19'	CEMENT GROUT	

71 PUMPING TEST METHOD		PUMPING RATE	DURATION OF PUMPING	
1 <input checked="" type="checkbox"/> PUMP	2 <input type="checkbox"/> BAILER	20 GPM	6	15-18 HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
10 FEET	20 FEET	20 FEET	20 FEET	20 FEET	20 FEET

IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	20 FEET	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
1 <input checked="" type="checkbox"/> SHALLOW 2 <input type="checkbox"/> DEEP	30 FEET	15 GPM



54 FINAL STATUS OF WELL	
1 <input checked="" type="checkbox"/> WATER SUPPLY	8 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
2 <input type="checkbox"/> OBSERVATION WELL	6 <input type="checkbox"/> ABANDONED POOR QUALITY
3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
4 <input type="checkbox"/> RECHARGE WELL	9 <input type="checkbox"/> DEWATERING

55-56 WATER USE	
1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
<input type="checkbox"/> OTHER	9 <input type="checkbox"/> NOT USED

57 METHOD OF CONSTRUCTION	
1 <input type="checkbox"/> CABLE TOOL	6 <input type="checkbox"/> BORING
2 <input type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING
4 <input type="checkbox"/> ROTARY (AIR)	9 <input type="checkbox"/> DRIVING
5 <input checked="" type="checkbox"/> AIR PERCUSSION	<input type="checkbox"/> DIGGING <input type="checkbox"/> OTHER

NAME OF WELL CONTRACTOR: <u>Valley Drilling Co Ltd</u>	WELL CONTRACTOR'S LICENCE NUMBER: <u>5222</u>
ADDRESS: <u>PO Box 437 CARP, ONT</u>	
NAME OF WELL TECHNICIAN: <u>Bill Bisson</u>	WELL TECHNICIAN'S LICENCE NUMBER: <u>7-0190</u>
SIGNATURE OF TECHNICIAN/CONTRACTOR: <u>[Signature]</u>	SUBMISSION DATE: DAY _____ MO _____ YR _____

DATE SOURCE: <u>5222</u>	CONTRACTOR: <u>5222</u>	DATE RECEIVED: <u>JAN 09 1989</u>
DATE OF INSPECTION: _____	INSPECTOR: _____	
REMARKS: <u>WDE</u>		

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

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1523820

MUNICIP 15005

CON. CON.

103

COUNTY OR DISTRICT: [Redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: West Carleton CON. BLOCK, TRACT, SURVEY ETC: 3 LOT: 25-27: 6

DATE COMPLETED: DAY 11 MO 08 YR 89

#3 Carp, Ontario KOA 110

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Sand	Stones	Loose	0	6
Gray	Sand	Boulders	Packed	6	20
Gray	Limestone	Black Layers	Medium Soft	20	260

31 [Scale]

32 [Scale]

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
22	1 FRESH 3 <input type="checkbox"/> SULPHUR 2 SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
110	1 FRESH 3 <input type="checkbox"/> SULPHUR 2 SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 5 PLASTIC	.188	0	22
5 7/8	1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 5 PLASTIC		22	260

SCREEN

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

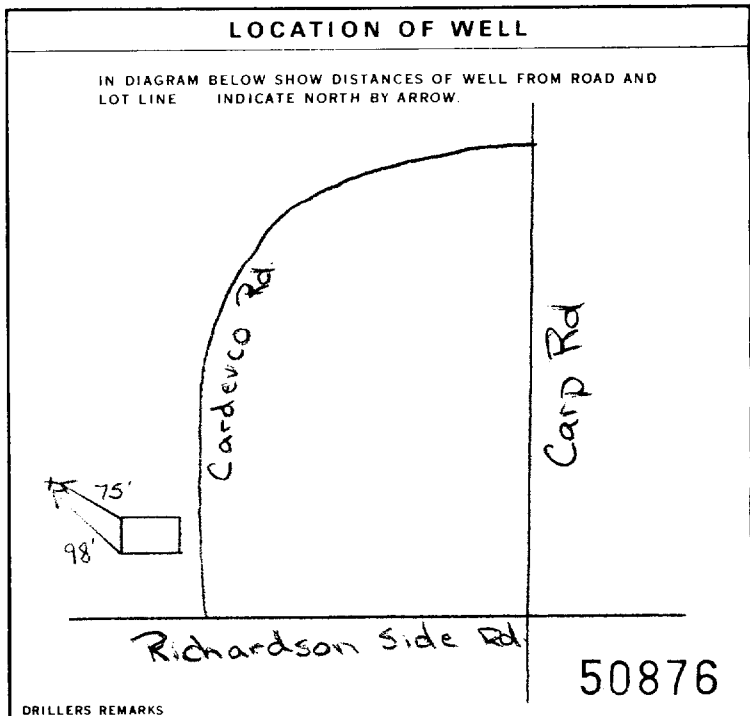
61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
10-13	Grouted
14-17	Cement

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	2 GPM	1 15-16 HOURS 17-18 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	PUMPING RECOVERY
8 FEET	125 FEET	15 MINUTES: 120 FEET 30 MINUTES: 125 FEET 45 MINUTES: 125 FEET 60 MINUTES: 125 FEET	



FINAL STATUS OF WELL

1 WATER SUPPLY 5 ABANDONED, INSUFFICIENT SUPPLY
2 OBSERVATION WELL 6 ABANDONED POOR QUALITY
3 TEST HOLE 7 UNFINISHED
4 RECHARGE WELL 8 DEWATERING

WATER USE

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

METHOD OF CONSTRUCTION

1 CABLE TOOL 6 BORING
2 ROTARY (CONVENTIONAL) 7 DIAMOND
3 ROTARY (REVERSE) 8 JETTING
4 ROTARY (AIR) 9 DRIVING
5 AIR PERCUSSION 10 DIGGING 11 OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd.
ADDRESS: Box 490 Stittsville, Ontario K2S 1A6
NAME OF WELL TECHNICIAN: J. Moore
SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]
SUBMISSION DATE: DAY 11 MO 08 YR 89

WELL CONTRACTOR'S LICENCE NUMBER: 1558
WELL TECHNICIAN'S LICENCE NUMBER: T0096

OFFICE USE ONLY

DATA SOURCE: 1558
DATE RECEIVED: SEP 12 1989
DATE OF INSPECTION: [Blank]
INSPECTOR: [Blank]
REMARKS: [Blank]

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

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1527799

MUNICIPALITY 15905

CON. 103

22 23 24

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: WEST CARLETON (HUNTLEY) CON #3
 DATE COMPLETED: DAY 29 MO 10 YR 92
 LOT 25-27: 6
 S. 164 CARDEUCO

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	Fill		PACKED	0	3'
BROWN	SAND	Boulders	loose	3'	8'
BROWN	GRAVEL	Boulders	loose	8'	13'
GREY	LIMESTONE		MEID	13'	50'

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER					
35	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> SALTY	7 <input type="checkbox"/> OTHER
42	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> SALTY	7 <input type="checkbox"/> OTHER

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4	1 <input checked="" type="checkbox"/> STEEL	.188	0	22
6 1/2	1 <input type="checkbox"/> STEEL		22	50

SCREEN

SIZE OF OPENING (SLOT NO.)	DIAMETER	LENGTH

61 PLUGGING & SEALING RECORD

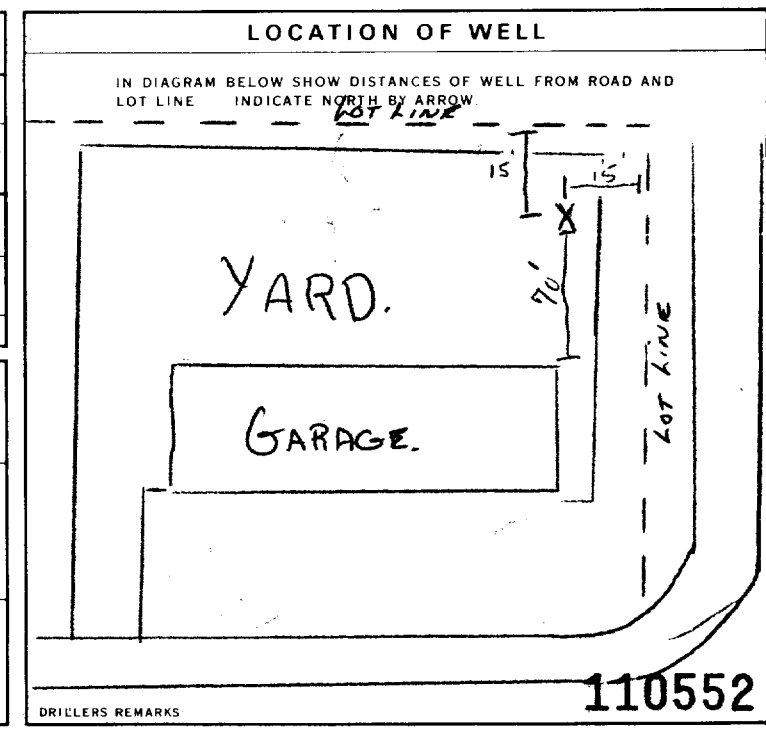
DEPTH SET AT - FEET	MATERIAL AND TYPE
0 - 20	CEMENT GROUT

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP	15 GPM	2 HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
0 FEET	20 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES

IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	20 GPM	



FINAL STATUS OF WELL

1 WATER SUPPLY
 2 OBSERVATION WELL
 3 TEST HOLE
 4 RECHARGE WELL

WATER USE

1 DOMESTIC
 2 STOCK
 3 IRRIGATION
 4 INDUSTRIAL
 5 OTHER

METHOD OF CONSTRUCTION

1 CABLE TOOL
 2 ROTARY (CONVENTIONAL)
 3 ROTARY (REVERSE)
 4 ROTARY (AIR)
 5 AIR PERCUSSION

CONTRACTOR

NAME OF WELL CONTRACTOR: VALLEY DRILLING INC.
 ADDRESS: PO Box 437 GARR, Ont
 NAME OF WELL TECHNICIAN: Bill Bisson
 SIGNATURE OF TECHNICIAN: [Signature]

WELL CONTRACTOR'S LICENCE NUMBER: 5222
 WELL TECHNICIAN'S LICENCE NUMBER: T-0140

SUBMISSION DATE: DAY ____ MO ____ YR ____

OFFICE USE ONLY

DATA SOURCE: 58
 CONTRACTOR: 59-62 5222
 DATE RECEIVED: 63-68 APR 05 1994
 DATE OF INSPECTION: INSPECTOR:
 REMARKS:

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

1529797

Municipality 15005 Con. CON 03

County or District: [Redacted] Township/Borough/City/Town/Village: **West Carleton - Huntley** Con block tract survey, etc.: **3** Lot: **6**

Address: [Redacted] Date completed: **15** day **12** month **97** year

R.R. #3, 1-247 Westbrook Rd. Carp, Ontario

NOA 1L) Northing RC Elevation RC Basin Code ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	Sandy Soil	Stones	Dry	0	4
Brown	Sandy Clay		Wet	4	9
Gray	Sand & Gravel		Wet	9	12
Gray	Limestone		Medium	12	75

31

32

41 WATER RECORD

Water found at - feet	Kind of water			
10-13	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	14 <input type="checkbox"/> Gas
24	2 <input type="checkbox"/> Salty	6 <input type="checkbox"/> Gas		
15-18	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	19 <input type="checkbox"/> Gas
62	2 <input type="checkbox"/> Salty	6 <input type="checkbox"/> Gas		
20-23	NOT TESTED			
25-28	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	24 <input type="checkbox"/> Gas
29	2 <input type="checkbox"/> Salty	6 <input type="checkbox"/> Gas		
30-33	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	34 <input type="checkbox"/> Gas
35	2 <input type="checkbox"/> Salty	6 <input type="checkbox"/> Gas		

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 1/4	1 <input checked="" type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	.188	0	22.5
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		22.5	75
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			

SCREEN

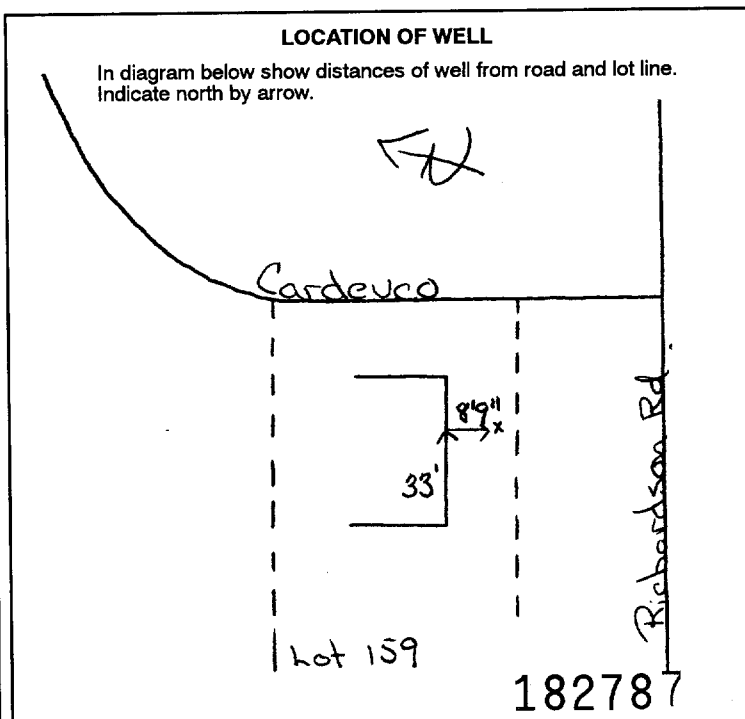
Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type		Depth at top of screen feet

61 PLUGGING & SEALING RECORD

Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
20.5	5	Grouting - Cement (3)
5	0	Rock cuttings

71 PUMPING TEST

Pumping test method	Pumping rate	Duration of pumping
1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	25 GPM	Hours: 1 Mins: 15
Static level	Water level end of pumping	Water levels during
19-21	22-24	15 minutes 26-28
4'10"	30 feet	30 minutes 29-31
		45 minutes 32-34
		60 minutes 35-37
		4'11" feet
		4'10" feet
		4'10" feet
If flowing give rate	Pump intake set at	Water at end of test
GPM	feet	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Cloudy
Recommended pump type	Recommended pump setting	Recommended pump rate
<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	30 feet	5 GPM



FINAL STATUS OF WELL

1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

WATER USE

1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not used
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

METHOD OF CONSTRUCTION

1 <input type="checkbox"/> Cable tool	5 <input checked="" type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor	Well Contractor's Licence No.	Data source	Contractor	Date received
Capital Water Supply Ltd.	1558	1558	1558	JAN 0 8 1998
Address		Date of inspection	Inspector	
P.O. Box 490 Stittsville, Ontario K2S 1A6				
Name of Well Technician	Well Technician's Licence No.	Remarks		
S. Miller	T0097	[Signature]		
Signature of Technician/Contractor	Submission date			
[Signature]	day 16 mo 12 yr 97			

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Mark correct box with a checkmark, where applicable.

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1530340

Municipality 15005 Con. CON 03
10 14 15 22 23 24

County or District: [Redacted] Township/Borough/City/Town/Village: **West Carleton - Huntley** Con block tract survey, etc.: **3** Lot: **6**
Address: **154 Colonnade Road Nepean, Ontario K2E 7J5** Date completed: **21** day **10** month **99** year

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	Sand	Boulders & Gravel		0	11'6"

31 [Scale] 32 [Scale]

41 WATER RECORD

Water found at - feet	Kind of water					
10-13	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	5 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Sulphur	7 <input type="checkbox"/> Minerals
15-18	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	5 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Sulphur	7 <input type="checkbox"/> Minerals
20-23	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	5 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Sulphur	7 <input type="checkbox"/> Minerals
23-28	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	5 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Sulphur	7 <input type="checkbox"/> Minerals
30-33	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	4 <input type="checkbox"/> Minerals	5 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Sulphur	7 <input type="checkbox"/> Minerals

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input checked="" type="checkbox"/> Plastic		0	11'6"
17-18	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			
24-25	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			

SCREEN

Sizes of opening (Slot No.)	Diameter 2 inches	Length 6'6" feet
Material and type	Gravel Packed	
Depth at top of screen	5 feet	

61 PLUGGING & SEALING RECORD

<input type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From 10-13	To 14-17	Gravel Packed	
11'6"	0	Hole Plug	
3	0		

71 PUMPING TEST

Pumping test method 1 <input type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	Pumping rate GPM	Duration of pumping Hours Mins
Static level feet	Water level end of pumping feet	Water levels during 1 <input type="checkbox"/> Pumping 2 <input type="checkbox"/> Recovery
15 minutes feet	30 minutes feet	45 minutes feet
60 minutes feet	Water at end of test <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
Recommended pump type <input type="checkbox"/> Shallow <input type="checkbox"/> Deep	Recommended pump setting feet	Recommended pump rate GPM

LOCATION OF WELL

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

194767

FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF CONSTRUCTION

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

Name of Well Contractor: **Capital Water Supply Ltd.** Well Contractor's Licence No.: **1558**
Address: **P.O. Box 490 Stittsville, Ontario K2S 1A6**
Name of Well Technician: **S. Miller** Well Technician's Licence No.: **T0097**
Signature of Technician/Contractor: *[Signature]* Submission date: **day 23 mo 10 yr 98**

MINISTRY USE ONLY

Data source: **1558** Contractor: **1558** Date received: **DEC 08 1998**
Date of inspection: _____ Inspector: _____
Remarks: _____

CSS. ES9

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Mark correct box with a checkmark, where applicable.

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1530341

Municipality 15005 Con. CON 03
10 14 15 22 23 24

County or District: **West Carleton** Township/Borough/City/Town/Village: **West Carleton - Huntley** Con block tract survey, etc.: **3** Lot: **6**
Address: **154 Colonnade Rd Nepean, Ontario K2E 7J5** Date completed: **21 day 10 month 98 year**

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	Sand	Boulders & Gravel		0	11'6"

31 _____
32 _____

41 WATER RECORD

Water found at - feet	Kind of water
10-13	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 14 2 <input type="checkbox"/> Salty 6 <input type="checkbox"/> Gas
15-18	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 19 2 <input type="checkbox"/> Salty 6 <input type="checkbox"/> Gas
20-23	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 24 2 <input type="checkbox"/> Salty 6 <input type="checkbox"/> Gas
23-28	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 29 2 <input type="checkbox"/> Salty 6 <input type="checkbox"/> Gas
30-33	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 34 2 <input type="checkbox"/> Salty 6 <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11	1 <input type="checkbox"/> Steel 12 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input checked="" type="checkbox"/> Plastic		0	11'6"
17-18	1 <input type="checkbox"/> Steel 19 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			20-23
24-25	1 <input type="checkbox"/> Steel 26 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

SCREEN

Sizes of opening (Slot No.)	Diameter	Length
	2 inches	6'6" feet
Material and type	Gravel Packed	
		5 feet

61 PLUGGING & SEALING RECORD

Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
11'6"	3	Gravel Packed
3	0	Hole Plug

71 PUMPING TEST

Pumping test method	Pumping rate	Duration of pumping
1 <input type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	GPM	Hours Mins
Static level	Water level end of pumping	Water levels during
19-21	22-24	1 <input type="checkbox"/> Pumping 2 <input type="checkbox"/> Recovery
feet	feet	15 minutes 28-28 30 minutes 29-31 45 minutes 32-34 60 minutes 35-37
feet	feet	feet
If flowing give rate	Pump intake set at	Water at end of test
GPM	feet	<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump type	Recommended pump setting	Recommended pump rate
<input type="checkbox"/> Shallow <input type="checkbox"/> Deep	feet	GPM

LOCATION OF WELL

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

194770

FINAL STATUS OF WELL

1 <input type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input checked="" type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

WATER USE

1 <input type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not used
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

METHOD OF CONSTRUCTION

1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input checked="" type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor: **Capital Water Supply Ltd.** Well Contractor's Licence No.: **1558**
Address: **P.O. Box 490 Stittsville, Ontario K2S 1A6**
Name of Well Technician: **S. Miller** Well Technician's Licence No.: **T0097**
Signature of Technician/Contractor: *[Signature]* Submission date: **day 23 mo 10 yr 98**

MINISTRY USE ONLY

Data source	Contractor	Date received
	1558	DEC 0 8 1998
Date of inspection	Inspector	
Remarks		

CSS. ES9

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

11

1532398

Municipality
15005

Con.
CON

County or District Ottawa Carleton	Township/Borough/City/Town/Village West Carleton Huntley	Con block tract survey, etc. 3	Lot 6
Address 357 William Mooney Rd., Carp ON. K0A 1L0		Date completed 01 10 01 day month year	
Northing		RC	Elevation
RC		Basin Code	ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	sand			0	8
Brown	sandy clay	stones		8	16
Grey	limestone			16	125
Note: Casing was left 12" above ground level at time of drilling.					

41 WATER RECORD

Water found at - feet	Kind of water
69	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
117	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
20-23	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
25-28	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
30-33	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 1/4	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	.188	0	21'6"
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic		21'6"	125
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			27-30

SCREEN

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

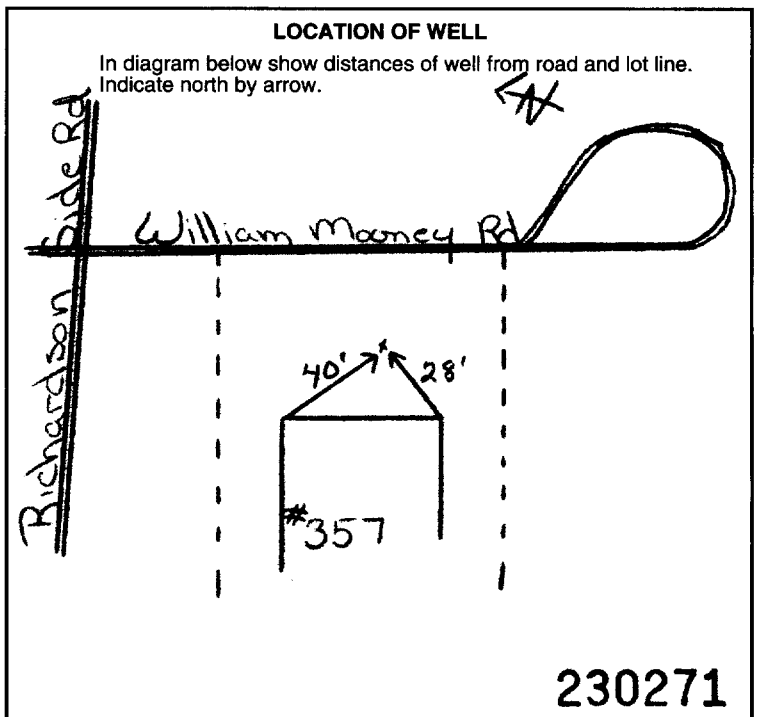
61 PLUGGING & SEALING RECORD

Annular space Abandonment

Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
21'6"	0	Grouted cement (3)
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate 5 GPM	Duration of pumping 15-16 Hours 17-18 Mins
Static level 28'4" feet	Water level end of pumping 60 feet	Water levels during
		<input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Recovery
		15 minutes 115 feet 30 minutes 90 feet 45 minutes 75 feet 60 minutes 60 feet
If flowing give rate GPM	Pump intake set at feet	Water at end of test <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Cloudy
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting 100 feet	Recommended pump rate 5 GPM



FINAL STATUS OF WELL

<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)	
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering	

WATER USE

<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not use
<input type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning	

METHOD OF CONSTRUCTION

<input type="checkbox"/> Cable tool	<input checked="" type="checkbox"/> Air percussion	<input type="checkbox"/> Driving
<input type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting	

Name of Well Contractor Capital Water Supply Ltd.	Well Contractor's Licence No. 1558
Address Box 490, Stittsville, ON/ K2S 1A6	
Name of Well Technician S. Miller	Well Technician's Licence No. T0097
Signature of Technician/Contractor	Submission date day 05 mo 10 yr 01

MINISTRY USE ONLY

Data source	Contractor 1558	Date received NOV 27 2001
Date of inspection	Inspector	
Remarks QSS.ES1		

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

11

1532757

Municipality
15005

Con.
CAN 03

County or District Ottawa Carleton		Township/Borough/City/Town/Village West Carleton - Huntley		Con block tract survey, etc. 3	Lot 6
Owner's surname Gracey Construction	First Name	Address 111 Manion Rd. R.R. #2 Car, Ontario K0A 1L0		Date completed 29 day 4 month 02 year	

21

Zone Easting Northing RC Elevation RC Basin Code ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown & red	Sand			0	13
Gray	Sand & gravel			13	16
Gray	Limestone			16	60
Note; Casing was left 1 foot above ground level at time of drilling					

31

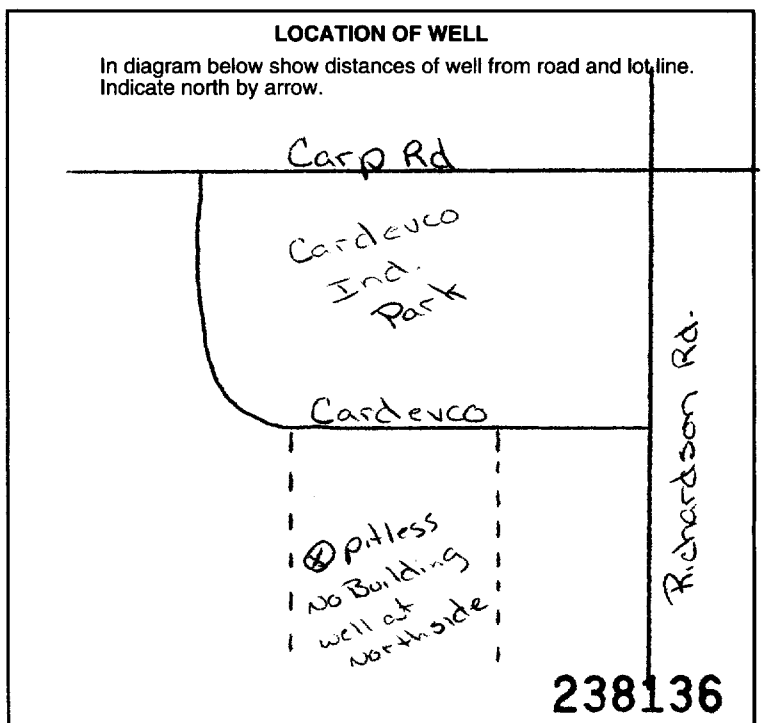
32

41 WATER RECORD			
Water found at - feet	Kind of water		
10-13 27	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	14
15-18 51	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	19
20-23	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	24
25-28	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	29
30-33	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
5 1/4	1 <input checked="" type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	.188	0	22.5
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		22.5	60
24-25	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

61 PLUGGING & SEALING RECORD			
Sizes of opening (Slot No.)		Diameter	Length
		inches	feet
Material and type		Depth at top of screen	
		feet	
<input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment			
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
10-13 21.5	14-17 0	Grouted - Cement (4)	
18-21	22-25		
26-29	30-33	80	

71	Pumping test method 1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	Pumping rate 15 GPM	Duration of pumping 15-16 Hours 17-18 Mins 1 Hours
PUMPING TEST	Static level 19-21 4'3"	Water level end of pumping 22-24 25 feet	Water levels during 25 <input checked="" type="checkbox"/> Pumping 2 <input type="checkbox"/> Recovery
		15 minutes 26-28 55 feet	30 minutes 29-31 40 feet
		45 minutes 32-34 40 feet	60 minutes 35-37 25 feet
	If flowing give rate 38-41 GPM	Pump intake set at 42 feet	Water at end of test 43 <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Cloudy
	Recommended pump type 44-45 <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting 46-49 40 feet	Recommended pump rate 46-49 5 GPM



54		
1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	
55-56		
1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	
57		
1 <input type="checkbox"/> Cable tool	5 <input checked="" type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input checked="" type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor Capital Water Supply Ltd.	Well Contractor's Licence No. 1558
Address P.O. Box 490 Stittsville, Ontario K2S1A6	
Name of Well Technician S. Miller	Well Technician's Licence No. T0097
Signature of Technician/Contractor <i>[Signature]</i>	Submission date day 30 mo 4 yr 02

MINISTRY USE ONLY	Data source 1558	Contractor 1558	Date received MAY 06 2002
	Date of inspection	Inspector	
	Remarks CSS.ES2		

Instructions for Completing Form

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- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Well Owner's Information and Location of Well Information

First Name Gold Haven Construction		Last Name		Mailing Address (Street Number/Name, RR, Lot, Concession) Box 72059			
County/District/Municipality Ottawa Carleton		Township/City/Town/Village Kanata		Province Ontario	Postal Code K2K 2P4	Telephone Number (include area code) 613 724 8627	
Address of Well Location (County/District/Municipality) Ottawa Carleton				Township West Carleton - Huntley		Lot 6	Concession 3
RR#/Street Number/Name Wescar Lane				City/Town/Village Carp		Site/Compartment/Block/Tract etc.	
GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model Garmin	Mode of Operation: <input type="checkbox"/> Undifferentiated <input checked="" type="checkbox"/> Averaged <input type="checkbox"/> Differentiated, specify	

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth Metres	
				From	To
Brown	Sand		Dry	0	1.21
Brown	Sand & Gravel		Wet	1.21	1.82
Brown	Clay		Loose	1.82	9.14
Gray	Sand & Boulders			9.14	10.66
Gray	Limestone			10.66	19.81

Hole Diameter		
Depth From	Metres To	Diameter Centimetres
0	11.27	22.75
11.27	19.81	15.39
Water Record		
Water found at Metres	Kind of Water	
13.71	<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals	
18.28	<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals	
	Other: NOT TESTED	
	<input type="checkbox"/> m <input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals	
After test of well yield, water was <input checked="" type="checkbox"/> Clear and sediment free <input type="checkbox"/> Other, specify		
Chlorinated <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Construction Record				
Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To
15.86	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	.48	+ .45	11.27
Casing				
	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized			
Screen				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
No Casing or Screen				
15.39	<input checked="" type="checkbox"/> Open hole		11.27	19.81

Test of Well Yield				
Pumping test method submersible	Draw Down	Recovery		
	Time min	Water Level Metres	Time min	Water Level Metres
Pump intake set at - (metres) 12.19	Static Level			
Pumping rate - (litres/min) 54.6	1	1.39	1	1.35
Duration of pumping 2 hrs + min	2	1.46	2	1.32
Final water level end of pumping 1.87 metres	3	1.52	3	1.22
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	1.56	4	1.23
Recommended pump depth. 12.19 metres	5	1.60	5	1.20
Recommended pump rate. 45.5 (litres/min)	10	1.70	10	1.10
If flowing give rate - (litres/min)	15	1.79	15	1.03
	20	1.82	20	.97
	25	1.84	25	.96
	30	1.86	30	.94
	40	1.86	40	.93
	50	1.88	50	.92
	60	1.88	60	.92

Plugging and Sealing Record			<input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment
Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
11.27	0	Grouted - Bentonite Slurry	.42m3

Method of Construction			
<input type="checkbox"/> Cable Tool	<input checked="" type="checkbox"/> Rotary (air)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (conventional)	<input checked="" type="checkbox"/> Air percussion	<input type="checkbox"/> Jetting	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Boring	<input type="checkbox"/> Driving	
Water Use			
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Industrial	<input type="checkbox"/> Public Supply	<input type="checkbox"/> Other
<input type="checkbox"/> Stock	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used	
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Municipal	<input type="checkbox"/> Cooling & air conditioning	
Final Status of Well			
<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Recharge well	<input type="checkbox"/> Unfinished	<input type="checkbox"/> Abandoned, (Other)
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Dewatering	
<input type="checkbox"/> Test Hole	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well	

Well Contractor/Technician Information	
Name of Well Contractor Capital Water Supply Ltd.	Well Contractor's Licence No. 1558
Business Address (street name, number, city etc.) Box 490 Stittsville, Ontario K2s 1A6	
Name of Well Technician (last name, first name) Miller: Stephen	Well Technician's Licence No. T0097
Signature of Technician/Contractor <i>Stephen Miller</i>	Date Submitted YYYY MM DD 2006 6 1

Location of Well	
In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.	
Audit No. Z 46974	Date Well Completed YYYY MM DD 2006 5 30
Was the well owner's information package delivered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Delivered YYYY MM DD 2006 6 1

Ministry Use Only	
Data Source	Contractor: 1558
Date Received YYYY DD JUL 11 2006	Date of Inspection YYYY MM DD
Remarks	Well Record Number

Instructions for Completing Form

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- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

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Well Owner's Information and Location of Well Information

First Name: **Mortgage Edge** Last Name: **Ottawa Carleton** Mailing Address (Street Number/Name, RR, Lot, Concession): **144 Wescar Lane**

County/District/Municipality: **Ottawa Carleton** Township/City/Town/Village: **Carp** Province: **Ontario** Postal Code: **K0A 1L0** Telephone Number (include area code): **613 836 1751**

Address of Well Location (County/District/Municipality): **Ottawa Carleton** Township: **West Carleton - Huntley** Lot: **6** Concession: **3**

RR#/Street Number/Name: **132 Wescar Lane** City/Town/Village: **Carp** Site/Compartment/Block/Tract etc.:

GPS Reading: NAD **83** Zone **18** Easting **42 32 09** Northing **501 59 21** Unit Make/Model: **Garmin** Mode of Operation: Undifferentiated Averaged Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth Metres	
				From	To
Brown	Sandy Clay	Stones		0	3.65
Gray	Sandy Clay	Stones		3.65	7.31
Gray	Limestone	Dark Layers	Medium	7.31	52.72

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	8.22	22.75
8.22	52.72	15.23

Water Record

Water found at **50.59** Metres / Kind of Water: Fresh Sulphur Gas Salty Minerals Other: **not tested**

After test of well yield, water was Clear and sediment free Other, specify

Chlorinated Yes No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres	
			From	To
15.86	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	.48	.45	8.22
Screen				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
No Casing or Screen				
15.23	<input checked="" type="checkbox"/> Open hole		8.22	52.72

Test of Well Yield

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
submersible				
Pump intake set at - (metres) 45.71	Static Level	4.49		
Pumping rate - (litres/min) 40.95	1	6.69	1	15.19
Duration of pumping 3 hrs + min	2	8.11	2	13.06
Final water level end of pumping 10.01 metres	3	9.27	3	11.41
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	10.30	4	10.37
Recommended pump depth 30.47 metres	5	11.21	5	9.56
Recommended pump rate 40.95 (litres/min)	10	14.50	10	6.88
If flowing give rate - (litres/min)	15	15.72	15	5.83
If pumping discontinued, give reason.	20	16.33	20	5.47
	25	16.57	25	5.34
	30	16.72	30	5.25
	40	16.88	40	5.19
	50	17.50	50	5.17
	60	17.63	60	5.17

Plugging and Sealing Record Annular space Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
8.22	0	Grouted - Bentonite Slurry	.42m³

Method of Construction

Cable Tool Rotary (air) Diamond Digging Rotary (conventional) Air percussion Jetting Other Rotary (reverse) Boring Driving

Water Use

Domestic Industrial Public Supply Other Stock Commercial Not used Irrigation Municipal Cooling & air conditioning

Final Status of Well

Water Supply Recharge well Unfinished Abandoned, (Other) Observation well Abandoned, insufficient supply Dewatering Test Hole Abandoned, poor quality Replacement well

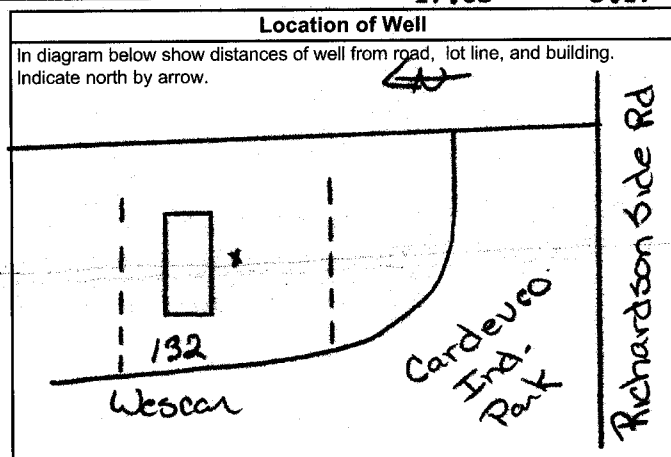
Well Contractor/Technician Information

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

Business Address (street name, number, city etc.): **Box 490 Stittsville, Ontario K2S 1A6**

Name of Well Technician (last name, first name): **Miller, Stephen** Well Technician's Licence No.: **T0097**

Signature of Technician/Contractor: *[Signature]* Date Submitted: **2006 8 31**



Audit No. **Z 47066** Date Well Completed: **2006 8 30**

Was the well owner's information package delivered? Yes No Date Delivered: **2006 8 31**

Ministry Use Only

Data Source: Contractor **1558**

Date Received: **NOV 17 2006** Date of Inspection: **2006 8 31**

Remarks: Well Record Number

Instructions for Completing Form

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- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Help Desk (Toll Free) at 1-888-396-9355.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

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Well Owner's Information and Location of Well Information

OTTAWA - City *West-Carleton 10-11-12 24-30*
 RR#/Street Number/Name: *126 WESCAR-LANE* City/Town/Village: *OTTAWA* Site/Compartment/Block/Tract etc.: *4M-356-4R-7616*
 GPS Reading: NAD *83* Zone *18* Easting *423356* Northing *5015890* Unit Make/Model: *Magellan* Mode of Operation: Undifferentiated Averaged Differentiated, specify _____

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth / Metres	
				From	To
<i>Brown</i>	<i>Sand.</i>	<i>Crave /-Boulders</i>	<i>loose</i>	<i>0</i>	<i>11.51</i>
<i>Grey</i>	<i>limestone.</i>		<i>Hard.</i>	<i>11.51</i>	<i>22.72</i>

Hole Diameter

Depth From	Metres To	Diameter Centimetres
<i>0</i>	<i>6.06</i>	<i>20.32</i>

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth / Metres	
			From	To
<i>15.55</i>	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	<i>0.48</i>	<i>0</i>	<i>11.51</i>
Screen				
<i>15.55</i>	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized		<i>11.51</i>	<i>22.72</i>
No Casing or Screen				
<i>15.55</i>	<input type="checkbox"/> Open hole		<i>11.51</i>	<i>22.72</i>

Test of Well Yield

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
<i>Submersible</i>				
Pump intake set at - (metres)		<i>3.40</i>		<i>17.80</i>
Pumping rate - (litres/min)	<i>1</i>	<i>5.24</i>	<i>1</i>	<i>14.10</i>
Duration of pumping	<i>2</i>	<i>6.51</i>	<i>2</i>	<i>11.79</i>
Final water level end of pumping	<i>3</i>	<i>7.15</i>	<i>3</i>	<i>9.26</i>
Recommended pump type	<i>4</i>	<i>7.28</i>	<i>4</i>	<i>7.56</i>
Recommended pump depth	<i>5</i>	<i>8.22</i>	<i>5</i>	<i>6.24</i>
Recommended pump rate	<i>10</i>	<i>10.16</i>	<i>10</i>	<i>4.07</i>
	<i>15</i>	<i>12.31</i>	<i>15</i>	<i>3.40</i>
If flowing give rate - (litres/min)	<i>20</i>	<i>14.41</i>	<i>20</i>	<i>1</i>
	<i>25</i>	<i>16.20</i>	<i>25</i>	<i>1</i>
	<i>30</i>	<i>17.77</i>	<i>30</i>	<i>1</i>
	<i>40</i>	<i>17.79</i>	<i>40</i>	<i>1</i>
	<i>50</i>	<i>17.80</i>	<i>50</i>	<i>1</i>
	<i>60</i>	<i>17.80</i>	<i>60</i>	<i>1</i>

Water Record

Water found at *10.60* Metres / Kind of Water: Fresh Sulphur Gas Salty Minerals Other: _____

After test of well yield, water was Clear and sediment free Other, specify _____

Chlorinated Yes No

Plugging and Sealing Record Annular space Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
<i>0</i>	<i>6.06</i>	<i>Cement Grout</i>	<i>120kg</i>

Method of Construction

Cable Tool Rotary (air) Diamond Digging
 Rotary (conventional) Air percussion Jetting Other
 Rotary (reverse) Boring Driving

Water Use

Domestic Industrial Public Supply Other
 Stock Commercial Not used
 Irrigation Municipal Cooling & air conditioning

Final Status of Well

Water Supply Recharge well Unfinished Abandoned, (Other)
 Observation well Abandoned, insufficient supply Dewatering
 Test Hole Abandoned, poor quality Replacement well

Well Contractor/Technician Information

Name of Well Contractor: *DAR-WATER-Well-Drilling* Well Contractor's Licence No.: *6006*
 Business Address (street name, number, city etc.): *CP 98 - St-Albert ON*
 Name of Well Technician (last name, first name): *Desnoyers Louis* Well Technician's Licence No.: *7-625*
 Signature of Technician/Contractor: *Louis Desnoyers* Date Submitted: *2006 11 24*

Location of Well

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

Audit No. *z 71634* Date Well Completed: *2006 11 20*
 Was the well owner's information package delivered? Yes No Date Delivered: *2006 11 20*

Ministry Use Only

Data Source: _____ Contractor: *6006*
 Date Received: *DEC 18 2006* Date of Inspection: _____
 Remarks: _____ Well Record Number: _____

A082584

Address of Well Location (Street Number/Name) **#153 Cardevco Road** Township **West Carleton** Lot **6** Concession **3**
 County/District/Municipality **Ottawa-Carleton** City/Town/Village **Carp** Province **Ontario** Postal Code _____
 UTM Coordinates Zone Easting Northing **18423156** **5016047** Municipal Plan and Sublot Number **PLAN 4M-356 Block 9x12** Other _____

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
	Sand			0	15
	Grey limestone			15	60

PLAN 4R-8368 Part 3 + 6

Annular Space

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
19' 0"	Neat Cement Slurry	7.8

Method of Construction

Cable Tool Diamond Public Commercial Not used
 Rotary (Conventional) Jetting Domestic Municipal Dewatering
 Rotary (Reverse) Driving Livestock Test Hole Monitoring
 Boring Digging Irrigation Cooling & Air Conditioning
 Air percussion Industrial Other, specify _____
 Other, specify _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
6"	Steel	.188"	19'	19'	<input checked="" type="checkbox"/> Water Supply
6"	open hole		19'	60'	<input type="checkbox"/> Replacement Well

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		Status of Well
			From	To	
					<input type="checkbox"/> Test Hole

Water Details

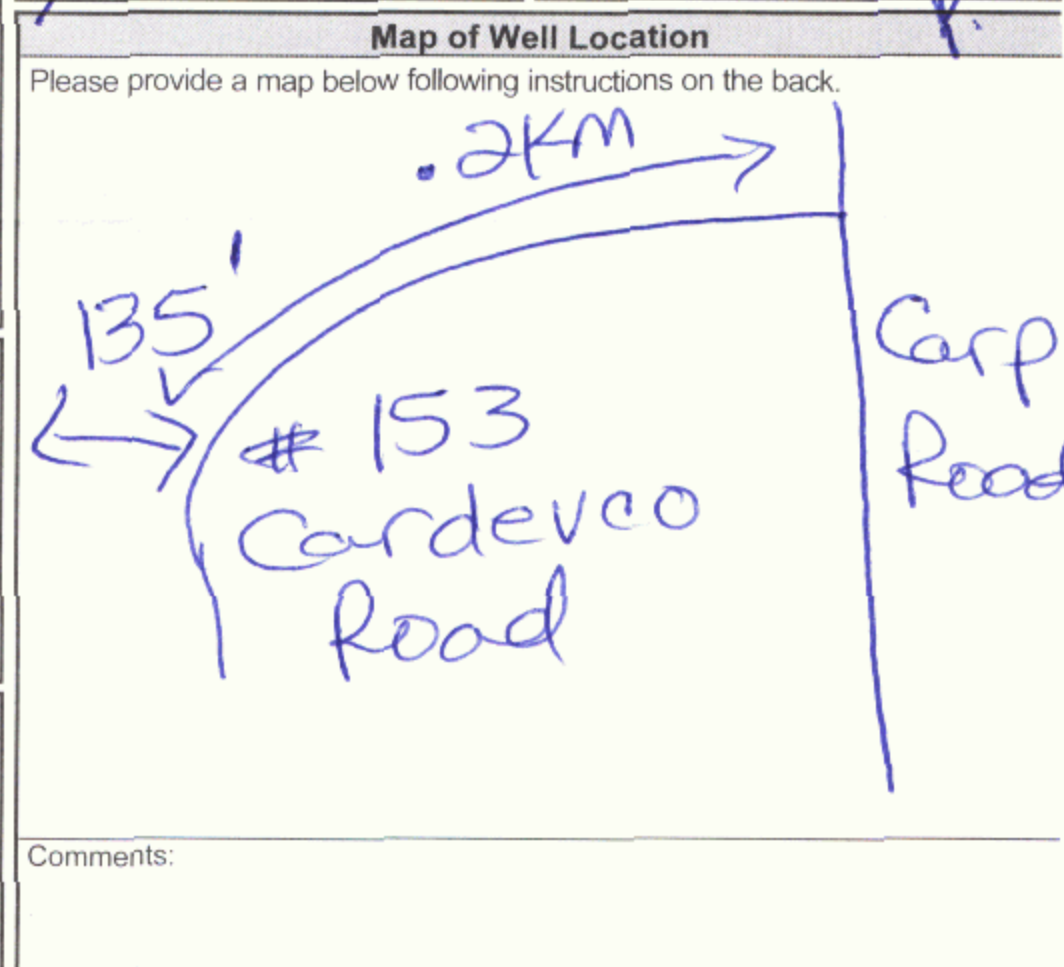
Water found at Depth (m/ft)	Kind of Water:	Untested
30	<input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Gas	<input checked="" type="checkbox"/>
48	<input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Gas	<input checked="" type="checkbox"/>
51	<input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Gas	<input checked="" type="checkbox"/>

Well Contractor and Well Technician Information

Business Name of Well Contractor **AIR ROCK DRILLING CO LTD** Well Contractor's Licence No. **1119**
 Business Address (Street Number/Name) **RR#1** Municipality **RICHMOND**
 Province **ONT** Postal Code **K0A2Z0** Business E-mail Address _____
 Bus. Telephone No. (inc. area code) **613 838 2170** Name of Well Technician (Last Name, First Name) **PURCELL STANNAN**
 Well Technician's Licence No. **T2122** Signature of Technician and/or Contractor **[Signature]** Date Submitted **20090707**

Results of Well Yield Testing

After test of well yield, water was:	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
<input checked="" type="checkbox"/> Clear and sand free <input checked="" type="checkbox"/> Other, specify NOT TESTED				
If pumping discontinued, give reason:	Static Level			
	1	6'4"	1	6'6"
Pump intake set at (m/ft) 50'	2	6'6"	2	6'5"
Pumping rate (l/min / GPM) 20	3	6'8"	3	6'4"
Duration of pumping 1 hrs + 0 min	4	6'9"	4	6'3"
Final water level end of pumping (m/ft) 8'1"	5	7'	5	6'2"
If flowing give rate (l/min / GPM)	10	7'3"	10	5'8"
	15	7'5"	15	5'6"
	20	7'6"	20	
Recommended pump depth (m/ft) 50' (1/2HP)	25	7'7"	25	
Recommended pump rate (l/min / GPM) 20	30	7'7"	30	
Well production (l/min / GPM) 20	40	7'9"	40	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	50	8'	50	
	60	8'1"	60	



Comments: _____

Well owner's information package delivered Yes No

Date Package Delivered **20090707**

Date Work Completed **20090706**

Ministry Use Only

Audit No. **Z 94721**

AUG 06 2009

Received _____



Well Tag No. (Place) A093965 A 093965

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: D. DOREN, Last Name / Organization: EXCAVATION, E-mail Address: [blank], Mailing Address: 117 WESCAP LANE., Municipality: CARP, Province: ON, Postal Code: [blank], Telephone No.: [blank]

Well Location

Address of Well Location: 117 WESCAP LANE, Township: [blank], Lot: [blank], Concession: [blank], City/Town/Village: CARP, Province: Ontario, UTM Coordinates: NAD 83 18 413280 8015733

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with 5 columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft). Rows include: BRN FIC GRAVEL LOOSE 0-1.22, BRN CLAY SILT SOFT 1.22-2.44, GRY CLAY SILT WET 2.44-5.79

Annular Space table with 3 columns: Depth Set at (m/ft), Type of Sealant Used, Volume Placed. Rows: 0-0.3 CONCRETE, 0.3-0.91 BENTONITE, 0.91-5.79 SAND

Results of Well Yield Testing table with 4 columns: After test of well yield, water was, Draw Down, Recovery, Pump intake set at, Pumping rate, Duration of pumping, Final water level end of pumping, If flowing give rate, Recommended pump depth, Recommended pump rate, Well production, Disinfected?

Method of Construction and Well Use section with checkboxes for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing table with 4 columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth (m/ft). Row: 4.02 PLASTIC .368 0 1.22

Construction Record - Screen table with 4 columns: Outside Diameter, Material, Slot No., Depth (m/ft). Row: 4.82 PLASTIC 10 1.22 5.79

Water Details and Hole Diameter section with checkboxes for Fresh, Untested, Gas, etc.

Well Contractor and Well Technician Information section with fields for Business Name, Address, Licence No., etc.

Map of Well Location section with a hand-drawn diagram of a well layout and a 'Comments' field.

Ministry Use Only section with fields for Audit No. (2100175), Date Package Delivered, Date Work Completed, etc.



Measurements recorded in: Metric Imperial

A093964 A 093964

Page 7062 of

Well Owner's Information

First Name: P. DOREN, Last Name / Organization: EXCAVATION, Mailing Address: 117 WESCAR LANE, Municipality: CAAP, Province: ON

Well Location

Address of Well Location: 117 WESCAR LANE, Township: CAAP, City/Town/Village: CAAP, Province: Ontario, UTM Coordinates: NAD 83 18 Y 23288 5015730

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Includes entries for BRN FILL, BRN CLAY, GRAY CLAY, GRAVEL, SILT, LOOSE, SOFT, SOFT/WET.

Annular Space

Table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Includes entries for CONCRETE, BENTONITE, SAND.

Results of Well Yield Testing

Form for well yield testing results including draw down and recovery data, pumping rate, and duration of pumping.

Method of Construction

Form for method of construction and well use, including options for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing

Table for casing construction record with columns for Inside Diameter, Material, Wall Thickness, Depth, and Status of Well.

Construction Record - Screen

Table for screen construction record with columns for Outside Diameter, Material, Slot No., and Depth.

Water Details

Form for water details including depth and kind of water found.

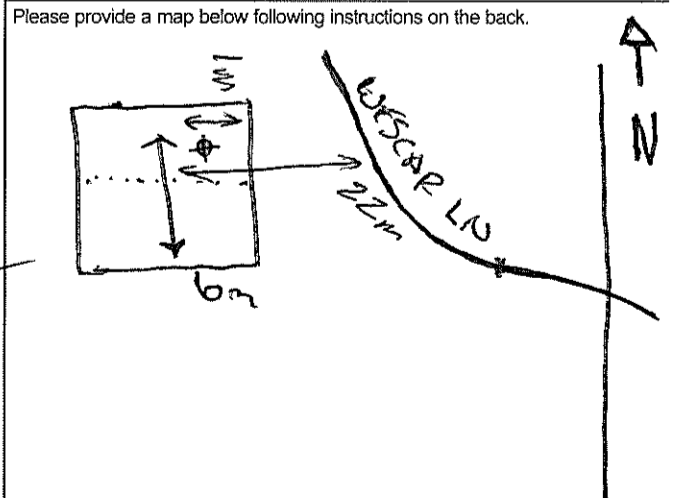
Hole Diameter

Form for hole diameter details including depth and diameter.

Well Contractor and Well Technician Information

Form for contractor and technician information including business name, address, and technician details.

Map of Well Location



Comments: [Blank]

Ministry Use Only section including Audit No. 2100177 and Date Work Completed 2010/01/15.



Measurements recorded in: Metric Imperial

A 093962 *A093962*

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Well Owner's Information

First Name D. DOREN	Last Name / Organization EXCAVATION	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 117 WESTAR		Municipality CABO	Province ON
		Postal Code	Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name) 117 WESTAR LANE	Township	Lot	Concession
County/District/Municipality	City/Town/Village CABO	Province Ontario	Postal Code
UTM Coordinates NAD 83 Zone 18 Easting 423299 Northing 5615736	Municipal Plan and Sublot Number	Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BRN	FILL	GRAVEL	PACKED	0	1.22
BRN	CLAY	SILT.	DENSE	1.22	1.5
GRY	CLAY	SILT.	SOFT	1.5	2.1

Annular Space			
Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0	0.3	CONCRETE	
0.3	0.91	BENTONITE	
0.91	2.13	SAND	

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:	Static Level			
	1		1	
Pump intake set at (m/ft)	2		2	
Pumping rate (l/min / GPM)	3		3	
Duration of pumping hrs + min	4		4	
Final water level end of pumping (m/ft)	5		5	
If flowing give rate (l/min / GPM)	10		10	
	15		15	
	20		20	
Recommended pump depth (m/ft)	25		25	
Recommended pump rate (l/min / GPM)	30		30	
Well production (l/min / GPM)	40		40	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	50		50	
	60		60	

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Public
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Domestic
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Livestock
<input type="checkbox"/> Boring	<input type="checkbox"/> Irrigation
<input type="checkbox"/> Air percussion	<input type="checkbox"/> Industrial
<input type="checkbox"/> Other, specify Direct Push	<input type="checkbox"/> Other, specify
<input type="checkbox"/> Diamond	<input type="checkbox"/> Commercial
<input type="checkbox"/> Jetting	<input type="checkbox"/> Municipal
<input type="checkbox"/> Driving	<input checked="" type="checkbox"/> Test Hole
<input type="checkbox"/> Digging	<input type="checkbox"/> Cooling & Air Conditioning
<input type="checkbox"/> Dewatering	<input type="checkbox"/> Monitoring

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
			From	To	
3.45	PLASTIC 10	10	0	1.22	

Construction Record - Screen					
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		<input type="checkbox"/> Other, specify
			From	To	
4.71	PLASTIC 10	10	1.22	2.13	

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft) From	Diameter (cm/in) To
0		2.13	5.71

Well Contractor and Well Technician Information			
Business Name of Well Contractor Strata Soil Sampling	Well Contractor's Licence No. 7241		
Business Address (Street Number/Name) 212-147 West Beaver Creek	Municipality Richmond Hill		
Province ON	Postal Code L4B 1C6	Business E-mail Address	

Bus. Telephone No. (inc. area code) (905) 764-9341	Name of Well Technician (Last Name, First Name) Robinson Travis	Date Submitted 20100909
Well Technician's Licence No. 31159	Signature of Technician and/or Contractor <i>[Signature]</i>	

Map of Well Location

Please provide a map below following instructions on the back.

Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input type="checkbox"/> Yes <input type="checkbox"/> No	Y Y Y M M D D 20100918	Audit No. Z100176
	Date Work Completed	Received MAR 01 2010



Measurements recorded in: Metric Imperial

A093972 A 093972

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Well Owner's Information

First Name: D. DOREN, Last Name / Organization: EXHAUSTION, Mailing Address: 117 WISCAR LANE, Municipality: CARP, Province: ON

Well Location

Address of Well Location: 117 WISCAR LANE, Township: CARP, UTM Coordinates: NAD 83 18 42 3 29 7 5 0 1 5 7 3 9

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with 6 columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, Depth (m/ft) To. Includes entries for BRN FILL, BRN CLAY, GRAY SLAY, GRAVEL, SILT, SOFT, SOFT/WET.

Annular Space table with 4 columns: Depth Set at (m/ft) From, Depth Set at (m/ft) To, Type of Sealant Used, Volume Placed (m³/ft³). Includes entries for CONCRETE, BENTONITE, SAND.

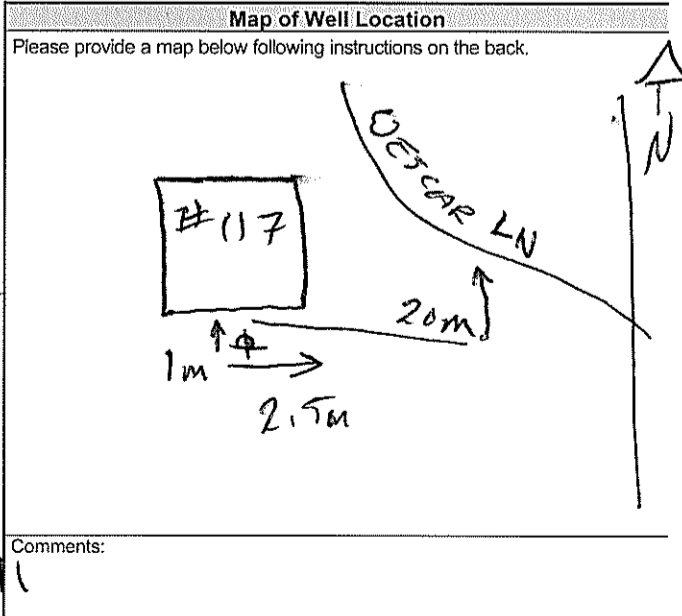
Method of Construction and Well Use section with checkboxes for Cable Tool, Rotary, Boring, etc., and Well Use options like Commercial, Municipal, Test Hole.

Construction Record - Casing and Screen tables with columns for Diameter, Material, Wall Thickness, Slot No., and Depth (m/ft).

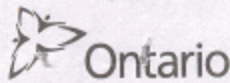
Water Details and Hole Diameter tables with columns for Depth, Kind of Water, and Diameter.

Well Contractor and Well Technician Information section with fields for Business Name, Address, and Licences.

Results of Well Yield Testing table with columns for Draw Down (Time, Water Level) and Recovery (Time, Water Level).



Bottom section containing Well owner's information package delivered status, Date Package Delivered, Date Work Completed, and Ministry Use Only audit information.



A093972

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Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: 1278439, Last Name / Organization: Ontario Limited, E-mail Address, Mailing Address: 1525 Ontona Ave, Municipality: Ottawa, Province: ON, Postal Code: K2C1W2, Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name): 117 Wescar Ln, Township, Lot, Concession, City/Town/Village: Carp, Province: Ontario, Postal Code, UTM Coordinates: NAD 83 184232805015754

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³)

Method of Construction and Well Use checkboxes: Cable Tool, Rotary, Boring, Diamond, Jetting, Digging, Public, Commercial, Municipal, Livestock, Irrigation, Industrial, Cooling & Air Conditioning, Not used, Dewatering, Monitoring

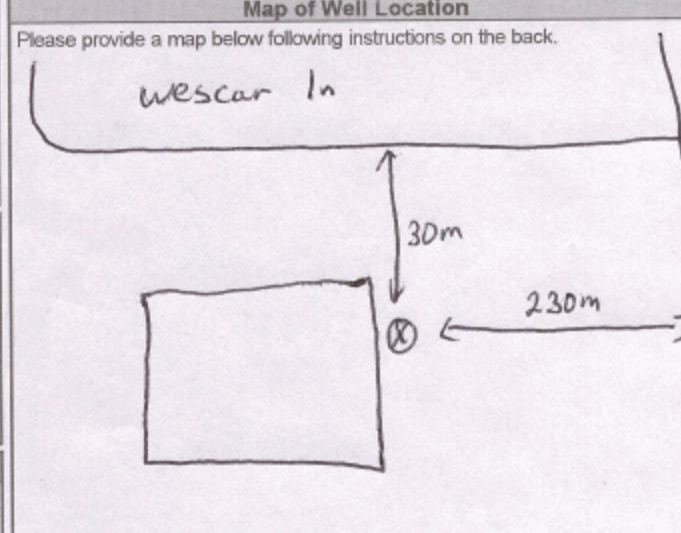
Construction Record - Casing table with columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From, To

Construction Record - Screen table with columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From, To

Water Details and Hole Diameter tables with columns: Water found at Depth (m/ft), Kind of Water, Depth (m/ft) From, To, Diameter (cm/in)

Well Contractor and Well Technician Information: Business Name of Well Contractor: Strata Soil Sampling, Well Contractor's Licence No.: 7241, Business Address: 2147 West Beaver Creek Richmond Hill

Results of Well Yield Testing table with columns: Draw Down (Time, Water Level), Recovery (Time, Water Level), Pump intake set at, Pumping rate, Duration of pumping, Final water level end of pumping, If flowing give rate, Recommended pump depth, Recommended pump rate, Well production, Disinfected?



Well Contractor and Well Technician Information: Business Name of Well Contractor: Strata Soil Sampling, Well Contractor's Licence No.: 7241, Business Address: 2147 West Beaver Creek Richmond Hill, Province: ON, Postal Code: L4B1C6, Business E-mail Address: wrecords@stratasoil.com, Bus. Telephone No. (inc. area code): 9057649304, Name of Well Technician (Last Name, First Name): Mike, Well Technician's Licence No.: 3448, Signature of Technician and/or Contractor: [Signature], Date Submitted: 20100331

Comments, Well owner's information package delivered, Date Package Delivered, Date Work Completed, Ministry Use Only: Audit No. z111784, MAY 03 2010

A093963

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: 1279439
 Last Name / Organization: Ontario Limited
 E-mail Address: _____
 Well Constructed by Well Owner

Mailing Address (Street Number/Name): 1525 Ontario Ave
 Municipality: Ottawa
 Province: ON
 Postal Code: K2C1W2
 Telephone No. (inc. area code): _____

Well Location

Address of Well Location (Street Number/Name): 117 Wescar Ln
 Township: _____
 Lot: _____
 Concession: _____

County/District/Municipality: _____
 City/Town/Village: Carp
 Province: Ontario
 Postal Code: _____

UTM Coordinates: Zone Easting Northing
 NAD 83 18 423280 5015739
 Municipal Plan and Sublot Number: _____
 Other: _____

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0 - 0.31	Concrete	
0.31 - 1.83	Benseal	
1.83 -	Grout slurry	

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Public
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Commercial
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Domestic
<input type="checkbox"/> Boring	<input type="checkbox"/> Municipal
<input type="checkbox"/> Air percussion	<input type="checkbox"/> Livestock
<input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Test Hole
	<input type="checkbox"/> Cooling & Air Conditioning
	<input type="checkbox"/> Industrial
	<input type="checkbox"/> Other, specify _____
	<input type="checkbox"/> Not used
	<input type="checkbox"/> Dewatering
	<input type="checkbox"/> Monitoring

Construction Record - Casing				
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To
3.45	PVC	.356		

Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
4.21	PVC	10		

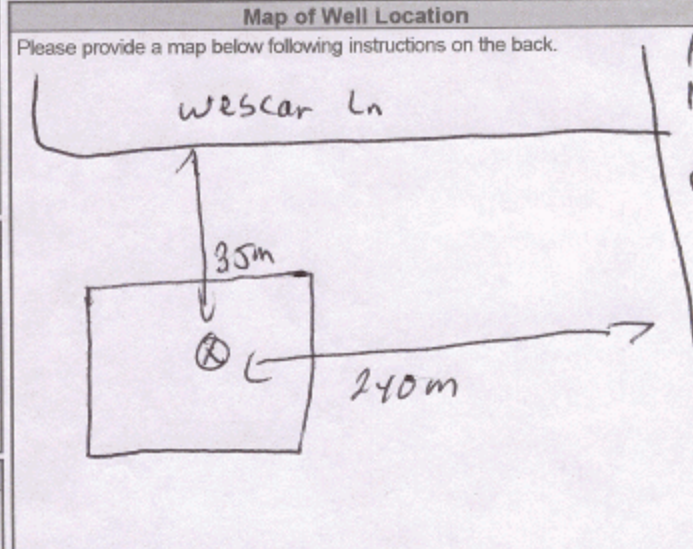
Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	Depth (m/ft)	Diameter (cm/in)
		From	To
0		0	1.83

Well Contractor and Well Technician Information

Business Name of Well Contractor: Stada Soil Sampling
 Well Contractor's Licence No.: 7241
 Business Address (Street Number/Name): 2-117 West Beaver Creek Richmond Hill
 Municipality: _____
 Province: ON
 Postal Code: L4B1C6
 Business E-mail Address: wrecords@stadaSoil.com

Bus. Telephone No. (inc. area code): 9057649304
 Name of Well Technician (Last Name, First Name): Mait, Mike
 Well Technician's Licence No.: 3448
 Signature of Technician and/or Contractor: _____
 Date Submitted: 20100331

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: Pump intake set at (m/ft) Pumping rate (l/min / GPM) Duration of pumping _____ hrs + _____ min Final water level end of pumping (m/ft) If flowing give rate (l/min / GPM) Recommended pump depth (m/ft) Recommended pump rate (l/min / GPM) Well production (l/min / GPM) Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	Static Level			
	1		1	
	2		2	
	3		3	
	4		4	
	5		5	
10		10		
15		15		
20		20		
25		25		
30		30		
40		40		
50		50		
60		60		



Comments: _____

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input type="checkbox"/> Yes <input type="checkbox"/> No	Y Y Y Y M M D D 20100319	Audit No. 2111785 MAY 03 2010 Received

A093964

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: 1278439 Last Name / Organization: ontario Limited E-mail Address: Well Constructed by Well Owner

Mailing Address (Street Number/Name): 1525 ontona Ave Municipality: ottawa Province: ON Postal Code: K2C1W2 Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): 117 Wescar Ln Township: Carp Lot: Concession:

County/District/Municipality: City/Town/Village: Carp Province: Ontario Postal Code:

UTM Coordinates: Zone: 18 Easting: 423276 Northing: 5015759 Municipal Plan and Sublot Number: Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0 to .31	Concrete	
.31 to 6.83	Benseal	
6.83 to	Grout slurry	

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: Pump intake set at (m/ft) Pumping rate (l/min / GPM) Duration of pumping hrs + min Final water level end of pumping (m/ft) If flowing give rate (l/min / GPM) Recommended pump depth (m/ft) Recommended pump rate (l/min / GPM) Well production (l/min / GPM) Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	Static Level			
	1		1	
	2		2	
	3		3	
	4		4	
	5		5	
10		10		
15		15		
20		20		
25		25		
30		30		
40		40		
50		50		
60		60		

Method of Construction		Well Use		
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input type="checkbox"/> Domestic	<input type="checkbox"/> Municipal	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input checked="" type="checkbox"/> Test Hole	<input checked="" type="checkbox"/> Monitoring
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning	
<input type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial		
<input type="checkbox"/> Other, specify		<input type="checkbox"/> Other, specify		

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input checked="" type="checkbox"/> Abandoned, other, specify not needed <input type="checkbox"/> Other, specify
			From	To	
4.03	PVC	.368			

Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
4.82	PVC	ID		

Water Details		Hole Diameter	
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From: 0 To: 1.83	Diameter (cm/in): 20.32
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested		
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested		

Well Contractor and Well Technician Information

Business Name of Well Contractor: Strata Soil Sampling Well Contractor's Licence No.: 7241

Business Address (Street Number/Name): 2-147 West Beaver Creek Dr Richmond Hill Municipality:

Province: ON Postal Code: L4B1K6 Business E-mail Address: l4b1k6wrecords@stratasoil.com

Bus. Telephone No. (inc. area code): 905 764 9304 Name of Well Technician (Last Name, First Name): Mike

Well Technician's Licence No.: 3448 Signature of Technician and/or Contractor: [Signature] Date Submitted: 20100331

Map of Well Location

Please provide a map below following instructions on the back.

Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only	
<input type="checkbox"/> Yes <input type="checkbox"/> No	YYYYMMDD 20100319	Audit No. z111783	Received MAY 03 2010

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: _____ Last Name / Organization: **MIRNICK HOLDINGS %OBARDS CONST. MGMT** E-mail Address: _____ Well Constructed by Well Owner

Mailing Address (Street Number/Name): **141 WESCAR** Municipality: **CARP** Province: **ON** Postal Code: **K0A1L0** Telephone No. (inc. area code): **(613) 831-7044**

Well Location

Address of Well Location (Street Number/Name): **131 WESCAR** Township: **HUNTLEY** Lot: **6** Concession: **3**

County/District/Municipality: **OTTAWA/CARLETON** City/Town/Village: **CARP** Province: **Ontario** Postal Code: **K0A1L0**

UTM Coordinates Zone: **18** Easting: **423212** Northing: **5015770** Municipal Plan and Sublot Number: **PLAN 4M-350** Other: **BLOCKS 28431**

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
GREY	CLAY	SAND		0.00	4.61
GREY	TILL	SAND, GRAVEL, Boulders		4.61	7.32
GREY	LNIMESTONE	SILT		7.32	35.08 (115')

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
0.00	8.23	Bentonite grout, heavy sealant	0.30

Results of Well Yield Testing

Time (min)	Water Level (m/ft)	Recovery	
		Time (min)	Water Level (m/ft)
Static Level	2.42		
1	2.45	1	2.61
2	"	2	2.57
3	"	3	2.53
4	"	4	2.50
5	"	5	2.49
10	2.49	10	2.48
15	2.53	15	"
20	2.59	20	"
25	2.62	25	"
30	2.63	30	"
40	2.64	40	2.47
50	"	50	"
60	"	60	2.46

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

If pumping discontinued, give reason: **N/A.**

Pump intake set at (m/ft): **9.15m (30')**

Pumping rate (l/min / GPM): **54 lpm (12 gpm)**

Duration of pumping: **6 hrs + 0 min**

Final water level end of pumping (m/ft): **2.64m (8.6')**

If flowing give rate (l/min / GPM): **N/A.**

Recommended pump depth (m/ft): **9.15m (30')**

Recommended pump rate (l/min / GPM): **45 lpm (10 gpm)**

Well production (l/min / GPM): **145 lpm (32 gpm)**

Disinfected? Yes No

Method of Construction

Cable Tool Diamond Public Commercial Not used

Rotary (Conventional) Jetting Domestic Municipal Dewatering

Rotary (Reverse) Driving Livestock Test Hole Monitoring

Boring Digging Irrigation Cooling & Air Conditioning

Air percussion Industrial Other, specify _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
15.88	Steel A589	0.48	10.60	8.23	<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

Construction Record - Screen

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

Water Details

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
21.9	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	8.23	35.08	15.24
28.9	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			
31	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			

Well Contractor and Well Technician Information

Business Name of Well Contractor: **STANTON DRILLING INC** Well Contractor's Licence No.: **4875**

Business Address (Street Number/Name): **157 FIVE ARCHES DR, BOX 219** Municipality: **FAWANTHAM**

Province: **ON** Postal Code: **K0A20** Business E-mail Address: **stantondrilling@bell.net**

Business Telephone No. (inc. area code): **(613) 562-5622** Name of Well Technician (Last Name, First Name): **STANTON, PETER**

Well Technician's Licence No.: **0086** Signature of Technician and/or Contractor: _____ Date Submitted: **2011 02 25**

Map of Well Location

Please provide a map below following instructions on the back.

Comments: _____

Well owner's information package delivered: Yes No

Date Package Delivered: **2011 02 25**

Date Work Completed: **2011 02 23**

Ministry Use Only

Audit No.: **2102951**

APR 05 2011

Measurements recorded in: Metric Imperial

Address of Well Location (Street Number/Name) **123 WESCAR** Township **HUNTLEY** Lot **6** Concession **3**
 County/District/Municipality **OTTAWA CARLETON** City/Town/Village **CARP** Province **Ontario** Postal Code **K0A 1K0**
 UTM Coordinates Zone Easting Northing **18 423 224 501 5753** Municipal Plan and Sublot Number Other

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN/RED SAND		CLAY		0.00	2.89
GREY	TILL	SAND, GRAVEL, BOUNDRS		2.89	7.02
GREY	LIMESTONE	SHALE		7.02	35.08 (115')

Annular Space

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0.00 to 8.09	Heloplex perstone good sealant.	0.26

Results of Well Yield Testing

After test of well yield, water was:	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
<input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify				
If pumping discontinued, give reason:	N/A.			
Pump intake set at (m/ft)	12.2m (40')			
Pumping rate (l/min / GPM)	45 lpm (10 gpm)			
Duration of pumping	6 hrs + 0 min			
Final water level end of pumping (m/ft)	2.11 (6.91')			
If flowing give rate (l/min / GPM)	N/A.			
Recommended pump depth (m/ft)	12.2m (40')			
Recommended pump rate (l/min / GPM)	45 lpm (10 gpm)			
Well production (l/min / GPM)	>45 lpm (>10 gpm)			
Disinfected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Method of Construction

<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input checked="" type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input type="checkbox"/> Domestic	<input type="checkbox"/> Municipal	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Monitoring
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning	
<input checked="" type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial		
<input type="checkbox"/> Other, specify		<input type="checkbox"/> Other, specify		

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
15.88	Steel/ASB9	0.48 + 0.46	8.09		<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify

Construction Record - Screen N/A.

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

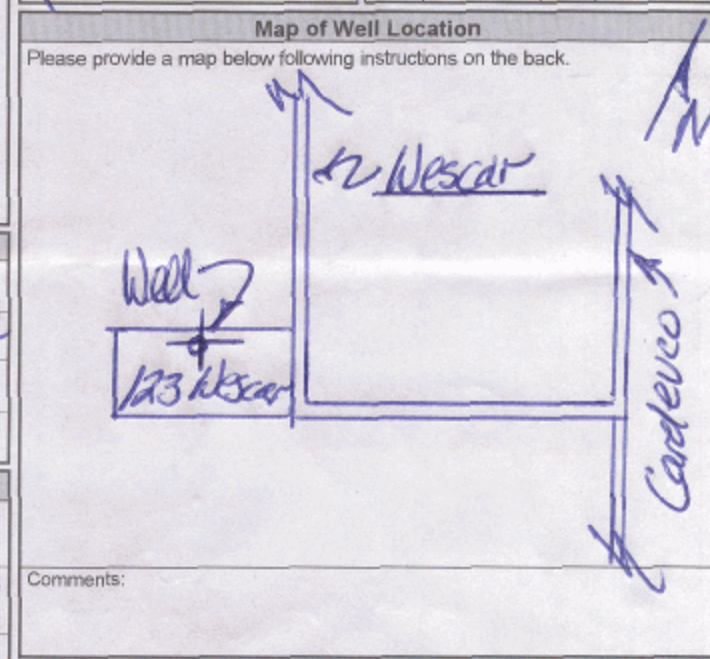
Water Details

Water found at Depth (m/ft)	Kind of Water:	Hole Diameter
22 (m/ft)	Fresh <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify <input type="checkbox"/>	Depth (m/ft) From To Diameter (cm/in)
29 (m/ft)	Fresh <input checked="" type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify <input type="checkbox"/>	8.09 35.08 15.24
31 (m/ft)	Fresh <input checked="" type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify <input type="checkbox"/>	

Well Contractor and Well Technician Information

Business Name of Well Contractor: **STANTON DRILLING INC** Well Contractor's Licence No.: **4875**
 Business Address (Street Number/Name): **BOX 219, 157 FIVE ARCHES DR** Municipality: **FAIRVIEW**
 Province: **ON** Postal Code: **K0A2X0** Business E-mail Address: **stanton.drilling@red.net**

Bus Telephone No. (inc. area code): **(413) 645-0622** Name of Well Technician (Last Name, First Name): **STANTON, PETER**
 Well Technician's Licence No.: **0086** Signature of Technician and/or Contractor: *[Signature]* Date Submitted: **20110602**



Well owner's information package delivered: Yes No

Date Package Delivered: **20110602**
 Date Work Completed: **20110602**

Ministry Use Only
 Audit No.: **132976**
JUL 08 2011
 Received



Measurements recorded in: Metric Imperial

Well Owner's Information

First Name Last Name / Organization Akman Construction E-mail Address Well Constructed by Well Owner

Mailing Address (Street Number/Name) 123 Cardevco Road Municipality Carp Province ON Postal Code K0A 1L0 Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name) 123 Cardevco Road Township West Carleton Lot 6 Concession 3

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

UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other Part 9 & 12

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Rows include Sand & Gravel, Boulders, Limestone.

Annular Space table with columns: Depth Set at (m/ft) From, To; Type of Sealant Used (Material and Type); Volume Placed (m³/ft³). Row: 20' to 0', Neat cement, 15.6.

Method of Construction and Well Use table. Includes checkboxes for Cable Tool, Rotary, Boring, Air percussion, Diamond, Jetting, Driving, Digging, Public, Commercial, Domestic, Municipal, Livestock, Test Hole, Irrigation, Cooling & Air Conditioning, Not used, Dewatering, Monitoring, Other.

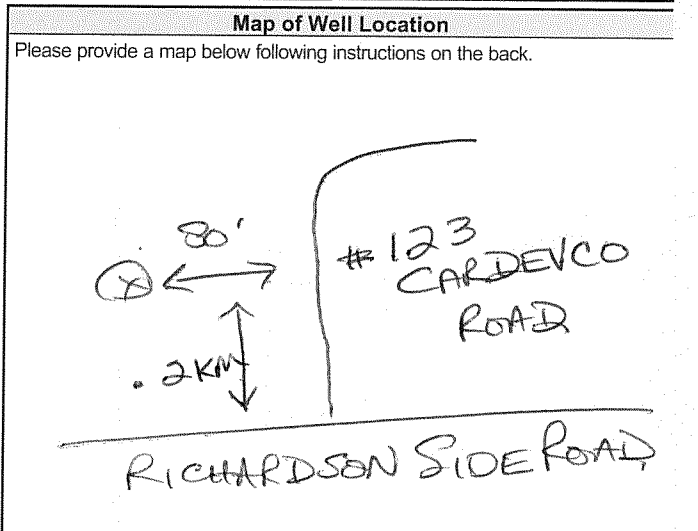
Construction Record - Casing and Status of Well table. Includes columns for Inside Diameter, Open Hole OR Material, Wall Thickness, Depth, and checkboxes for Water Supply, Replacement Well, etc.

Construction Record - Screen table with columns: Outside Diameter, Material, Slot No., Depth (m/ft) From, To.

Water Details and Hole Diameter table. Includes columns for Water found at Depth, Kind of Water, and Hole Diameter (Depth, Diameter).

Well Contractor and Well Technician Information table. Includes Business Name, Address, Province, Postal Code, Business E-mail Address, Business Telephone No., Name of Well Technician, Well Contractor's Licence No., Municipality, Signature of Technician, Date Submitted.

Results of Well Yield Testing table. Includes columns for Draw Down (Time, Water Level) and Recovery (Time, Water Level). Rows show data for various pumping rates and depths.



Comments: 1/2 HP - 10 GPM SET AT 90 FT.

Ministry Use Only table. Includes Well owner's information package delivered (Yes/No), Date Package Delivered, Date Work Completed, Audit No. (2155253), and Date (NOV 06 2013).



Measurements recorded in: Metric Imperial

A261077

Tag#: A261077

S-23157 Page of

Well Owner's Information

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

Mailing Address (Street Number/Name) Municipality Province Postal Code Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name) Township Lot Concession

County/District/Municipality City/Town/Village Province Ontario Postal Code

UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³)

Results of Well Yield Testing table with columns: Draw Down, Recovery, Time (min), Water Level (m/ft)

Method of Construction and Well Use table with checkboxes for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing table with columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From, To

Construction Record - Screen table with columns: Outside Diameter (cm/in), Material (Plastic, Galvanized, Steel), Slot No., Depth (m/ft) From, To

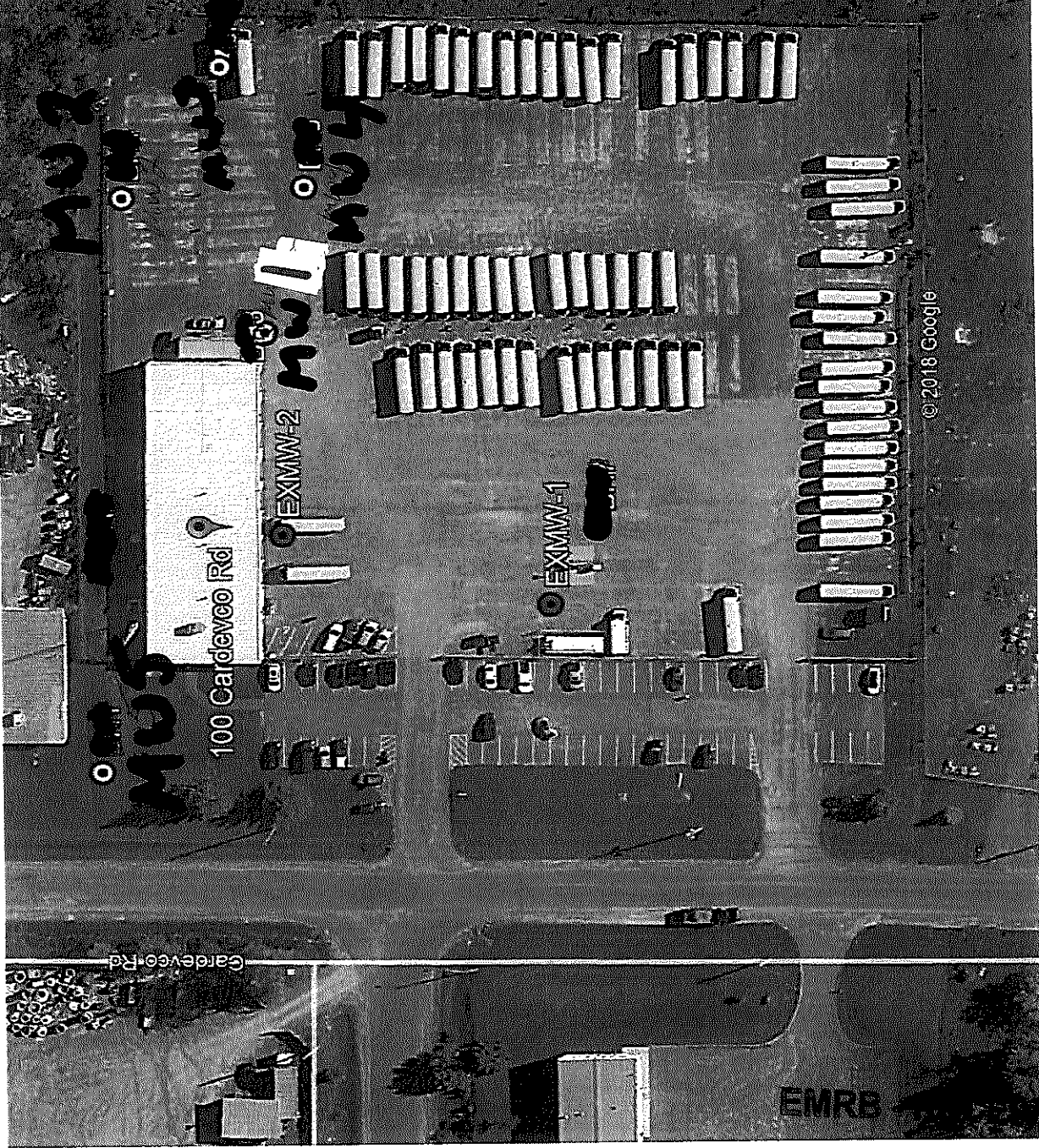
Water Details and Hole Diameter table with columns: Water found at Depth (m/ft), Kind of Water, Depth (m/ft) From, To, Diameter (cm/in)

Well Contractor and Well Technician Information table with fields for Business Name, Address, Licence No., etc.

Map of Well Location section with instructions and a handwritten 'N.W.' note.



Google Earth



C-7241
Z229576

MAR 08 2019

EMRB ED



Measurements recorded in: Metric Imperial

A261078

Tag#: A26 778

Well Owner's Information

First Name, Last Name / Organization (Transdev Canada Inc.), E-mail Address, Mailing Address (4243 rue Marcel Lacasse), Municipality (Brisbroard), Province (QC), Postal Code (J7L1N4), Telephone No. (450 970 8899)

Well Location

Address of Well Location (100-120 Carleton Rd), Township, Lot, Concession, City/Town/Village (Carp), Province (Ontario), Postal Code (K0A1L0), UTM Coordinates, Zone, Easting, Northing, Municipal Plan and Sublot Number

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Rows include gravel, sand, sandstone, dense soft layered.

Annular Space table with columns: Depth Set at (m/ft) From, To; Type of Sealant Used (Material and Type); Volume Placed (m³/ft³). Rows include concrete/mushroom, bentonite, filter sand.

Method of Construction and Well Use checkboxes. Method of Construction includes Cable Tool, Rotary, Boring, Air percussion. Well Use includes Commercial, Domestic, Irrigation, Industrial, etc.

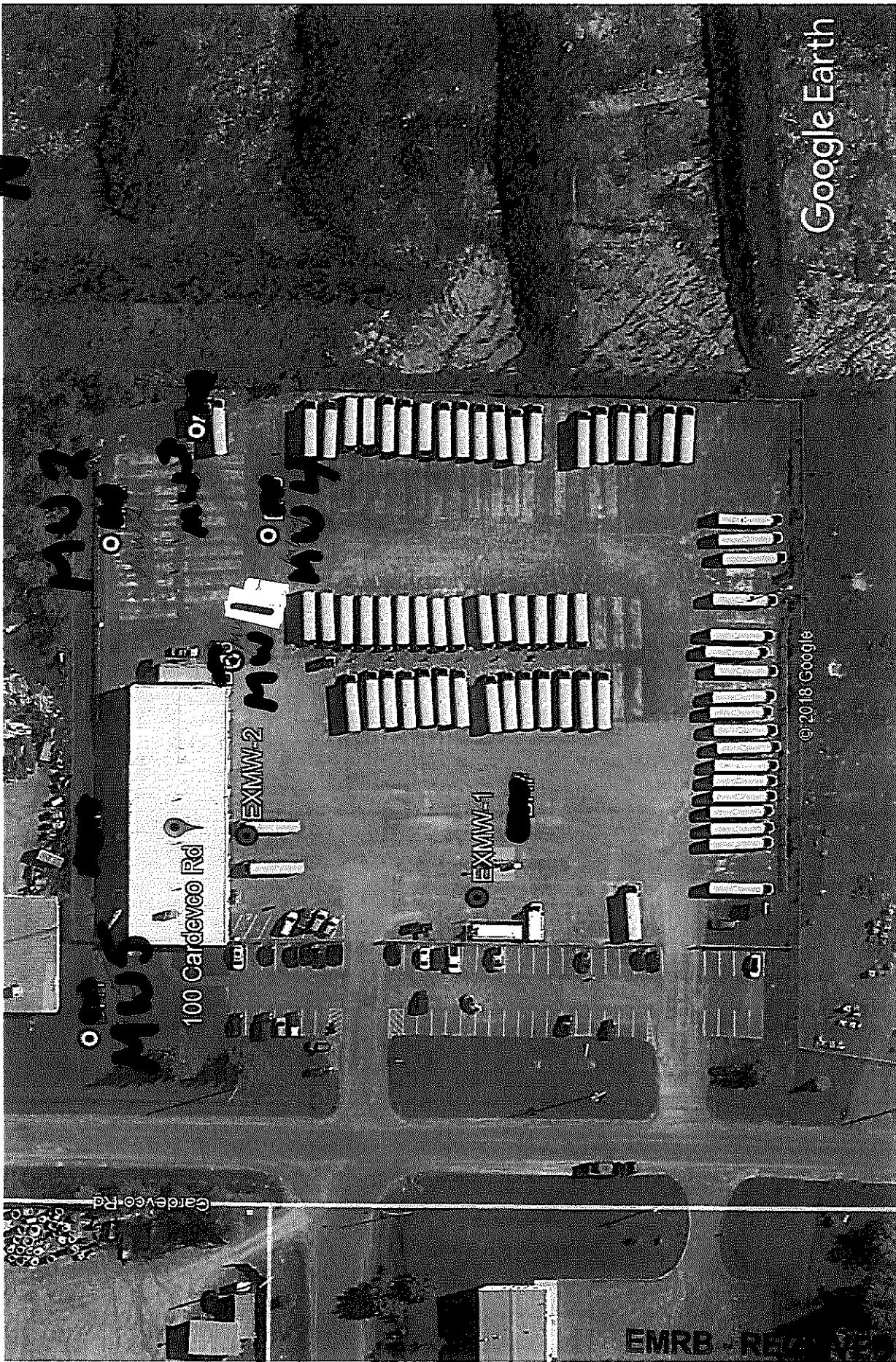
Construction Record - Casing and Construction Record - Screen tables. Casing table includes Inside Diameter, Open Hole OR Material, Wall Thickness, Depth. Screen table includes Outside Diameter, Material, Slot No., Depth.

Results of Well Yield Testing table. Columns: Time (min), Draw Down (m/ft), Water Level (m/ft), Recovery (min), Water Level (m/ft). Rows include static level, pump intake set, pumping rate, duration of pumping, final water level, etc.

Water Details and Hole Diameter tables. Water Details includes Water found at Depth, Kind of Water. Hole Diameter includes Depth (m/ft) and Diameter (cm/in).

Well Contractor and Well Technician Information. Includes Business Name (Shields Drilling Group), Business Address (165 Shields Court), Business E-mail Address, Well Contractor's Licence No., Name of Well Technician, Signature of Technician and/or Contractor, Date Submitted.

Map of Well Location and Comments section. Includes a map area and a comments box. Also includes Ministry Use Only section with Audit No. 2298199 and date MAR 08 2019.



Google Earth

C-7241
2290199

MAR 08 2019



Well Tag No. (Place Sticker and Label) Tag#: A261082

Measurements recorded in: Metric Imperial

Page 5-23157 of

Well Owner's Information

First Name, Last Name / Organization (Transdev Canada Inc.), E-mail Address, Mailing Address (4243 rue Marcel Lacasse), Municipality (Brossard), Province (QC), Postal Code (J7L 1N4), Telephone No. (450 970 8599)

Well Location

Address of Well Location (100-rd Cardevo Rd), Township, Lot, Concession, City/Town/Village (Ottawa / Carp), Province (Ontario), Postal Code (K0A 1L0), UTM Coordinates (NAD 83 18E 423376 5015925)

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From/To. Rows include BRN top soil, BRN sand, GRY sandstone.

Annular Space table with columns: Depth Set at (m/ft) From/To, Type of Sealant Used (concrete, bentonite, filter sand), Volume Placed (m³/ft³).

Method of Construction and Well Use checkboxes. Includes Cable Tool, Rotary, Boring, Air percussion, and various well uses like Domestic, Commercial, etc.

Construction Record - Casing table with columns: Inside Diameter, Open Hole OR Material (PVC), Wall Thickness, Depth (m/ft) From/To.

Construction Record - Screen table with columns: Outside Diameter, Material (PVC), Slot No., Depth (m/ft) From/To.

Results of Well Yield Testing table with columns: Draw Down (Time, Water Level), Recovery (Time, Water Level), Pumping rate, Duration of pumping, Final water level end of pumping.

Map of Well Location section with instructions to provide a map on the back.

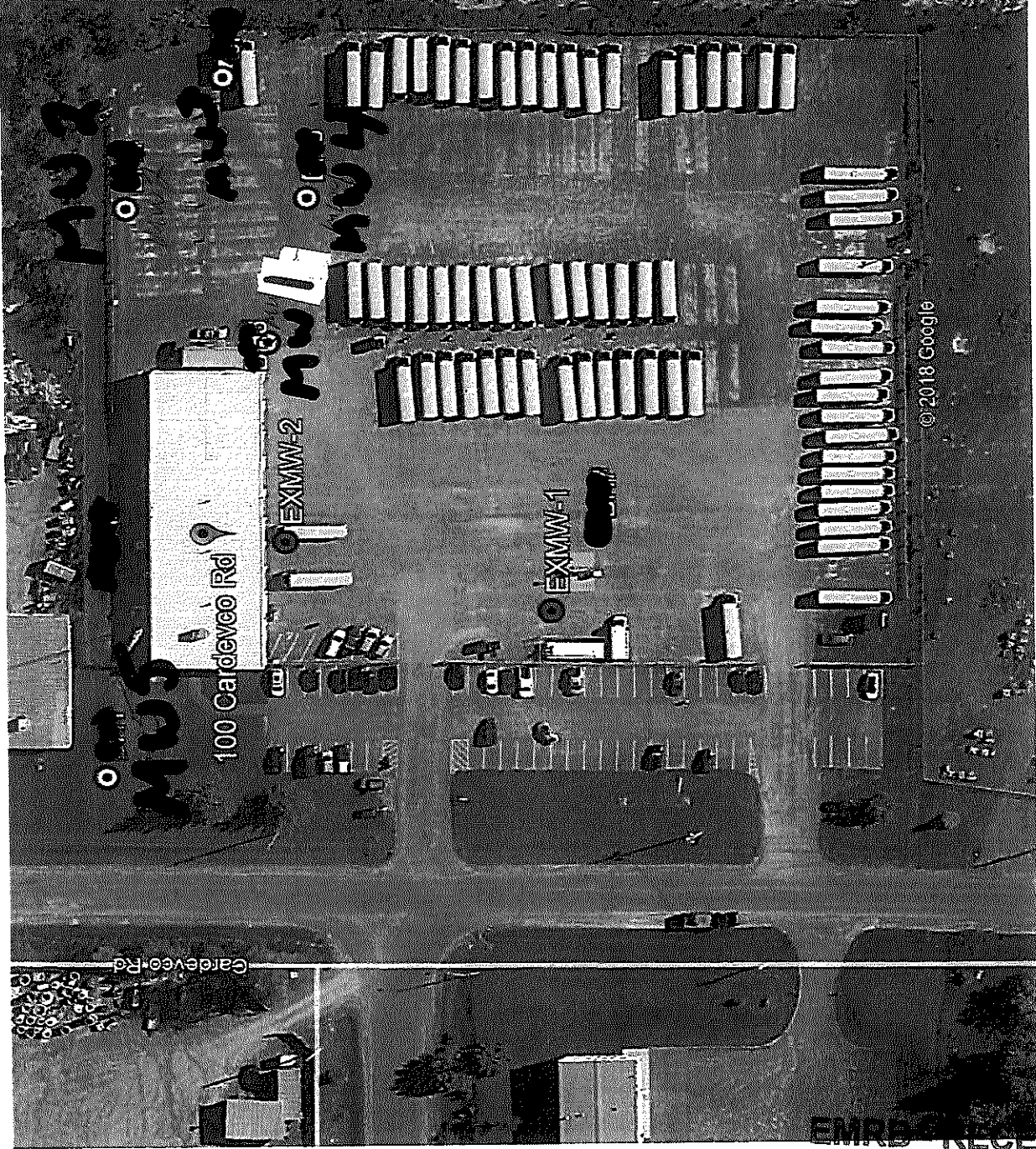
Water Details and Hole Diameter table with columns: Water found at Depth, Kind of Water, Depth (m/ft) From/To, Diameter (cm/in).

Well Contractor and Well Technician Information section including Business Name (Strata Drilling Group), Business Address (165 Shields Court), Well Contractor's Licence No. (72141), and Well Technician's Licence No.

Ministry Use Only section including Audit No. (Z302863), Date Submitted (20190617), and Date Package Delivered (20190617).



Google Earth



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Cardeveo Rd

EMRB RECEIVED

C-724
2302863

MAR 08 2019

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue (<https://data.ontario.ca/dataset/well-records>).

[Go Back to Map](#)

Well ID

Well ID Number: 7344968

Well Audit Number: Z317325

Well Tag Number: A274753

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

Well Location

Address of Well Location	128 Cardevco Rd
Township	HUNTLEY TOWNSHIP
Lot	
Concession	
County/District/Municipality	OTTAWA-CARLETON
City/Town/Village	Carp
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 18 Easting: 423430.00 Northing: 5015991.00
Municipal Plan and Sublot Number	

Other	
-------	--

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
GREY	GRVL	STNS	LOOS	0 m	.31 m
BRWN	SAND	STNS	SOFT	.31 m	.91 m
GREY	LMSN	SNDS	LYRD	.91 m	4.57 m

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 m	.31 m	CONCRETE Monument	
.31 m	1.22 m	BENTONITE	
1.22 m	4.57 m	FILTER SAND	

Method of Construction & Well Use

Method of Construction	Well Use
Air Percussion	
	Monitoring and Test Hole

Status of Well

Monitoring and Test Hole

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To

4.03 cm	PLASTIC	0 m	1.52 m

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
4.82 cm	PLASTIC	1.52 m	4.57 m

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7241

Results of Well Yield Testing

After test of well yield, water was	
If pumping discontinued, give reason	
Pump intake set at	
Pumping Rate	
Duration of Pumping	
Final water level	
If flowing give rate	
Recommended pump depth	
Recommended pump rate	
Well Production	
Disinfected?	

Draw Down & Recovery

--	--	--	--

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

Water Details

Water Found at Depth	Kind

Hole Diameter

Depth From	Depth To	Diameter
	4.57 m	7.62 cm
0 m		11.43 cm

Audit Number: Z317325

Date Well Completed: August 28, 2019

Date Well Record Received by MOE: October 09, 2019

Related

How to use a Ministry of the Environment map (<https://www.ontario.ca/page/how-use-ministry-environment-map#wells>)

Technical documentation: Metadata record (<https://data.ontario.ca/dataset/well-records/resource/3031344e-e3f2-48d5-888c-c1deadfd2f77>)

Updated: October 18, 2021
Published: March 20, 2014

Certificate of Analysis

Client: Paterson Group
 9 Auriga Dr
 Nepean, ON
 K2E 7T9
 Attention: Mr. Alex Schopf
 PO#: 55854
 Invoice to: Paterson Group

Report Number: 1986671
 Date Submitted: 2022-09-23
 Date Reported: 2022-09-29
 Project: PH4600
 COC #: 900644

Group	Analyte	MRL	Units	Guideline	1652758 Water 2022-09-22 GW1	1652759 Water 2022-09-22 GW2
Anions	Cl	1	mg/L	AO 250	185	191
	F	0.10	mg/L	MAC 1.5	0.41	0.42
	N-NO2	0.10	mg/L	MAC 1.0	<0.10	<0.10
	N-NO3	0.10	mg/L	MAC 10.0	<0.10	<0.10
	SO4	1	mg/L	AO 500	75	75
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 30-500	287	289
	Colour (Apparent)	2	TCU	AO 5	90*	86*
	Conductivity	5	uS/cm		1160	1180
	DOC	0.5	mg/L	AO 5	3.5	3.2
	pH	1.00		6.5-8.5	8.15	8.15
	Phenols	0.001	mg/L		<0.001	<0.001
	S2-	0.01	mg/L	AO 0.05	0.02	0.02
	TDS (COND - CALC)	1	mg/L	AO 500	754*	767*
	Turbidity	0.1	NTU	AO 5	13.2*	11.6*
Hardness	Hardness as CaCO3	1	mg/L	OG 80-100	457*	462*
Hydrocarbons	F1 (C6-C10)	20	ug/L		<20	<20
	F1-BTEX (C6-C10)	20	ug/L		<20	<20
	F2 (C10-C16)	20	ug/L		<20	<20
	F3 (C16-C34)	50	ug/L		<50	<50
	F4 (C34-C50)	50	ug/L		<50	<50
Indices/Calc	Ion Balance	0.01			1.01	1.01
Metals	Ag	0.0001	mg/L		<0.0001	<0.0001
	Al	0.01	mg/L	OG 0.1	<0.01	<0.01
	As	0.001	mg/L	IMAC 0.01	<0.001	<0.001
	B	0.01	mg/L	IMAC 5.0	0.02	0.02

Guideline = ODWSOG

* = Guideline Exceedence

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Certificate of Analysis

Client: Paterson Group
 9 Auriga Dr
 Nepean, ON
 K2E 7T9
 Attention: Mr. Alex Schopf
 PO#: 55854
 Invoice to: Paterson Group

Report Number: 1986671
 Date Submitted: 2022-09-23
 Date Reported: 2022-09-29
 Project: PH4600
 COC #: 900644

Group	Analyte	MRL	Units	Guideline	1652758 Water 2022-09-22 GW1	1652759 Water 2022-09-22 GW2
Metals	Ba	0.01	mg/L	MAC 1.0	0.58	0.59
	Be	0.0005	mg/L		<0.0005	<0.0005
	Ca	1	mg/L		127	129
	Cd	0.0001	mg/L	MAC 0.005	<0.0001	<0.0001
	Co	0.0002	mg/L		<0.0002	<0.0002
	Cr	0.001	mg/L	MAC 0.05	<0.001	<0.001
	Cu	0.001	mg/L	AO 1	<0.001	<0.001
	Fe	0.03	mg/L	AO 0.3	1.34*	1.21*
	Hg	0.0001	mg/L	MAC 0.001	<0.0001	<0.0001
	K	1	mg/L		3	3
	Mg	1	mg/L		34	34
	Mn	0.01	mg/L	AO 0.05	0.13*	0.13*
	Mo	0.005	mg/L		<0.005	<0.005
	Na	1	mg/L	AO 200	79	82
	Ni	0.005	mg/L		<0.005	<0.005
	Pb	0.001	mg/L	MAC 0.010	<0.001	<0.001
	Sb	0.0005	mg/L	IMAC 0.006	<0.0005	<0.0005
	Se	0.001	mg/L	MAC 0.05	<0.001	<0.001
	Sr	0.001	mg/L		0.720	0.724
	Tl	0.0001	mg/L		<0.0001	<0.0001
U	0.001	mg/L	MAC 0.02	<0.001	<0.001	
V	0.001	mg/L		<0.001	<0.001	
Zn	0.01	mg/L	AO 5	<0.01	<0.01	
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0	0
	Total Coliforms	0	ct/100mL	MAC 0	0	0

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Group	Analyte	MRL	Units	Guideline	1652758 Water 2022-09-22 GW1	1652759 Water 2022-09-22 GW2
Nutrients	N-NH3	0.020	mg/L		0.140	0.130
	Total Kjeldahl Nitrogen	0.100	mg/L		0.358	0.188
PHC Surrogate	Alpha-androstrane	0	%		101	103
Subcontract	Tannin & Lignin	0.1	mg/L		1.3	1.2
VOCs Surrogates	1,2-dichloroethane-d4	0	%		106	112
	4-bromofluorobenzene	0	%		82	82
	Toluene-d8	0	%		96	93
Volatiles	1,1,1,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,1-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1,2,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,2-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethylene	0.5	ug/L	MAC 14	<0.5	<0.5
	1,2-dichlorobenzene	0.4	ug/L	MAC 200	<0.4	<0.4
	1,2-dichloroethane	0.5	ug/L	IMAC 5	<0.5	<0.5
	1,2-dichloropropane	0.5	ug/L		<0.5	<0.5
	1,3,5-trimethylbenzene	0.3	ug/L		<0.3	<0.3
	1,3-dichlorobenzene	0.4	ug/L		<0.4	<0.4
	1,3-Dichloropropylene (cis+trans)	0.05	ug/g		<0.05	<0.05
	1,4-dichlorobenzene	0.4	ug/L	MAC 5	<0.4	<0.4
	Acetone	30	ug/L		<30	<30
	Benzene	0.5	ug/L	MAC 1	<0.5	<0.5
	Bromodichloromethane	0.3	ug/L		<0.3	<0.3
Bromoform	0.4	ug/L		<0.4	<0.4	
Bromomethane	0.5	ug/L		<0.5	<0.5	

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 COC #: 900644

Group	Analyte	MRL	Units	Guideline	Lab I.D.	1652758	1652759
					Sample Matrix	Water	Water
					Sample Type	2022-09-22	2022-09-22
					Sampling Date	GW1	GW2
					Sample I.D.		
Volatiles	c-1,2-Dichloroethylene	0.4	ug/L			<0.4	<0.4
	c-1,3-Dichloropropylene	0.5	ug/L			<0.5	<0.5
	Carbon Tetrachloride	0.2	ug/L	MAC 2		<0.2	<0.2
	Chloroethane	0.5	ug/L			<0.5	<0.5
	Chloroform	0.5	ug/L			<0.5	<0.5
	Dibromochloromethane	0.3	ug/L			<0.3	<0.3
	Dichlorodifluoromethane	0.5	ug/L			<0.5	<0.5
	Dichloromethane	4.0	ug/L	MAC 50		<4.0	<4.0
	Ethylbenzene	0.5	ug/L	MAC 140		<0.5	<0.5
	Ethylene Dibromide	0.2	ug/L			<0.2	<0.2
	Hexane	5	ug/L			<5	<5
	m/p-xylene	0.4	ug/L			<0.4	<0.4
	Methyl Ethyl Ketone (MEK)	10	ug/L			<10	<10
	Methyl Isobutyl Ketone (MIBK)	10	ug/L			<10	<10
	Methyl Tert Butyl Ether (MTBE)	2	ug/L	AO 15		<2	<2
	Monochlorobenzene	0.5	ug/L	MAC 80		<0.5	<0.5
	o-xylene	0.4	ug/L			<0.4	<0.4
	Styrene	0.5	ug/L			<0.5	<0.5
	t-1,2-Dichloroethylene	0.4	ug/L			<0.4	<0.4
	t-1,3-Dichloropropylene	0.5	ug/L			<0.5	<0.5
Tetrachloroethylene	0.3	ug/L	MAC 10		<0.3	<0.3	
Toluene	0.4	ug/L	MAC 60		<0.4	<0.4	
Trichloroethylene	0.3	ug/L	MAC 5		<0.3	<0.3	
Trichlorofluoromethane	0.5	ug/L			<0.5	<0.5	
Vinyl Chloride	0.2	ug/L	MAC 1		<0.2	<0.2	

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 Project: PH4600
 COC #: 900644

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1652758 Water 2022-09-22 GW1	1652759 Water 2022-09-22 GW2
Volatiles	Xylene; total	0.5	ug/L	MAC 90		<0.5	<0.5

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DATUM Geodetic

REMARKS

BORINGS BY Backhoe

DATE November 12, 2021

FILE NO. **PG6018**

HOLE NO. **TP 1-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY	N VALUE or RQD			○ Water Content %					
GROUND SURFACE								20	40	60	80		
Asphaltic concrete	0.09					0	118.65						
FILL: Crushed stone	0.10	G	1										
FILL: Brown silty sand with crushed stone, gravel, occasional cobbles		G	2										
Rigid insulation	0.60												
	0.70												
Compact to dense, brown SILTY SAND		G	3			1	117.65						
End of Test Pit	1.80												
Bottom of thickened concrete slab encountered at 0.56m depth.													
Underside of 100mm dia. PVC drainage pipe at 0.56m depth.													
(TP dry upon completion)													
								20	40	60	80	100	
								Shear Strength (kPa)					
								▲ Undisturbed △ Remoulded					

DATUM Geodetic

FILE NO. **PG6018**

REMARKS

HOLE NO. **TP 4-21**

BORINGS BY Backhoe

DATE November 12, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80	
GROUND SURFACE												
TOPSOIL	0.05					0	118.77					
FILL: Crushed stone and gravel	0.20	G	1									
FILL: Brown silty sand with gravel	0.40	G	2									
Compact to dense, brown SILTY SAND		G	3			1	117.77					
		G	4			2	116.77					▽
						3	115.77					
End of Test Pit	3.50											
(Groundwater infiltration at 2.0m depth)												

20 40 60 80 100
Shear Strength (kPa)
 ▲ Undisturbed △ Remoulded

DATUM Geodetic

REMARKS

BORINGS BY Backhoe

DATE November 12, 2021

FILE NO. **PG6018**

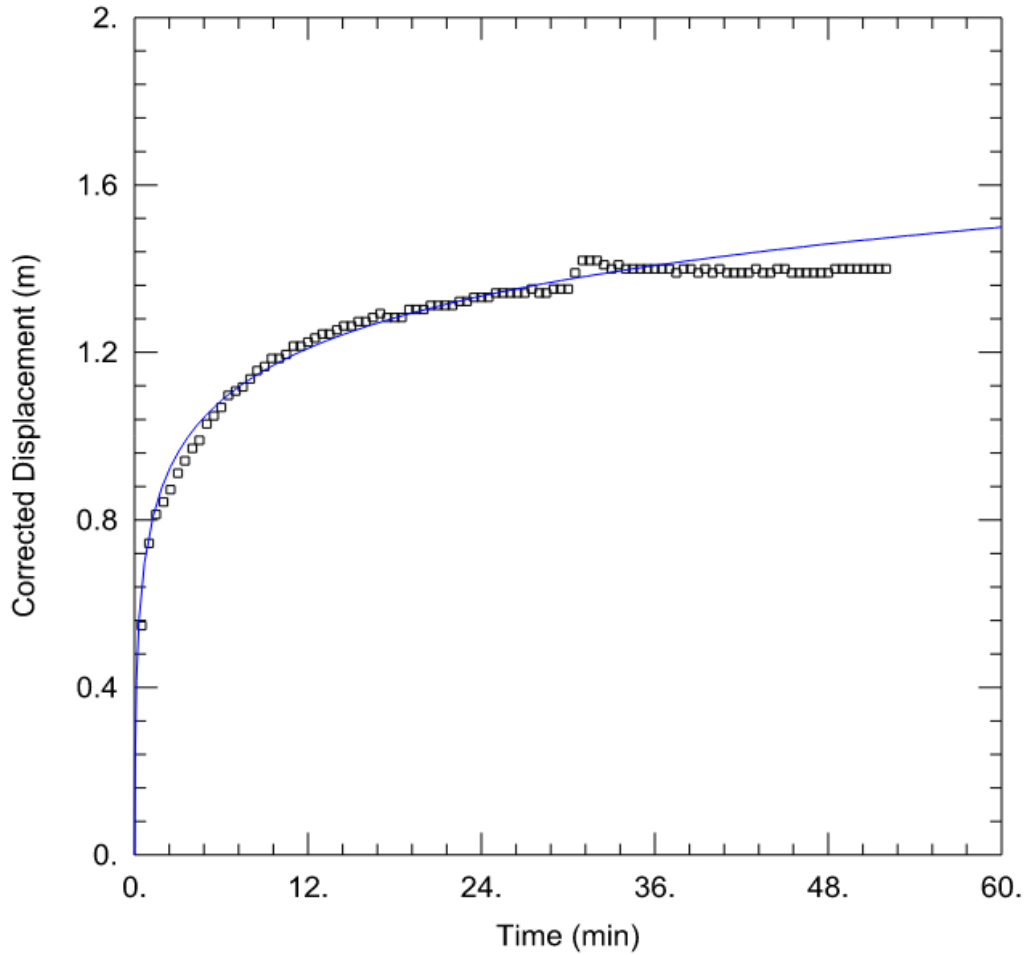
HOLE NO. **TP 5-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80		
GROUND SURFACE													
Asphaltic concrete FILL: Crushed stone	0.05 0.15	G	1			0	118.31						
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles and boulders		G	2			1	117.31						
						2	116.31						
End of Test Pit	2.20												
Practical refusal to excavation at 2.20m depth (Groundwater infiltration at 1.9m depth)													

20 40 60 80 100
Shear Strength (kPa)
 ▲ Undisturbed △ Remoulded

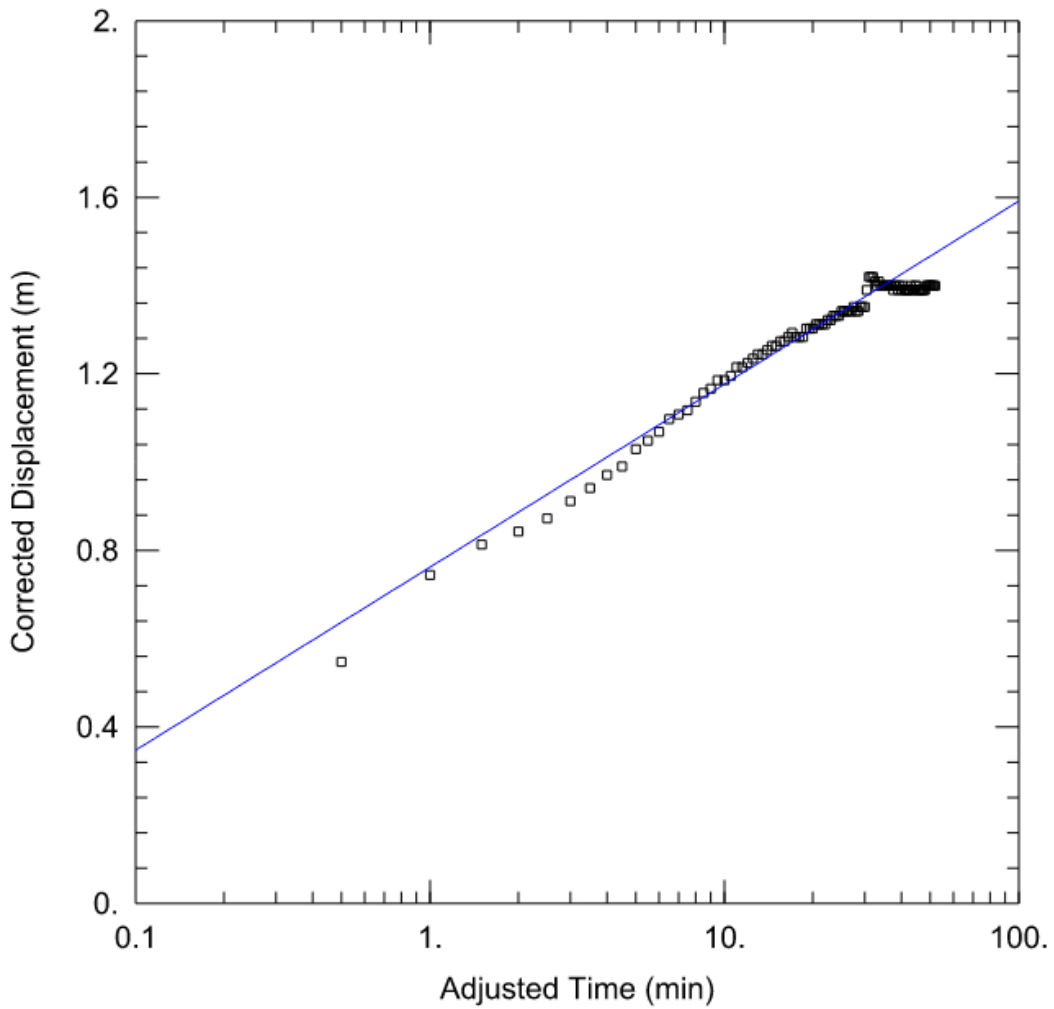
Pumping Test Analysis Report

File No.	PH4600	Well ID:	TW1
Date:	Thursday, September 27	Solution Method:	Theis
Client:	Premier Bus Lines. Ltd	Transmissivity (m ² /day):	17.17
Site Address:	135 Cardevco Rd, Carp	Discharge Rate (L/min)	27
Project:	Site Plan Control Application	Analysis performed by:	AS



Pumping Test Analysis Report

File No.	PH4600	Well ID:	TW1
Date:	Thursday, September 27	Solution Method:	Cooper-Jacob
Client:	Premier Bus Lines. Ltd	Transmissivity (m ² /day):	17.17
Site Address:	135 Cardevco Rd, Carp	Discharge Rate (L/min)	27
Project:	Site Plan Control Application	Analysis performed by:	AS



Pumping Test Analysis Report

File No. PH4600
Date: Thursday, September 27
Client: Premier Bus Lines. Ltd
Site Address: 135 Cardevco Rd, Carp
Project: Site Plan Control Application

Summary Table:		
Solution Method:	Well ID:	Transmissivity (m ² /day):
Theis	TW1	17.17
Cooper-Jacob	TW1	17.17
Average:		17.17

PREDICTIVE NITRATE IMPACT ASSESSEMENT

Infiltration Factors

Topography	0.20
Soil	0.40
Cover	0.10
Total	0.70

Site Characteristics

Area of Site :	2024	m ²
Total of roof areas:	277	m ²
Total area of paved driveway areas:	667	m ²
Roof + paved driveway areas	944	m ²
Impervious Area	944	m ²
Percent Impervious Area =	47	%
Infiltration Area =	1080	m ²

Septic Effluent

Concentration of Effluent (Cs) =	12	mg/L
Daily Sewage Flow (Qs)=	1.026	m ³
See Notes below.		

Infiltration Calculation

Nitrate concentration in precipitation (C _i) =	0	mg/L
Surplus Water (Environment Canada)	379	mm/yr
Factored Water Surplus =	265	mm/yr
Infiltration % due to stormwater management measures	-	%
Infiltration rate from stormwater management measures =	0	mm/yr
Infiltration Flow Entering the System (Q _i) =	1	m ³ /day

Mass Balance Model (MOEE, 1995)

$$C_T = (Q_b C_b + Q_e C_e + Q_i C_i) / (Q_b + Q_e + Q_i) = \text{Cumulative Nitrate Concentration}$$

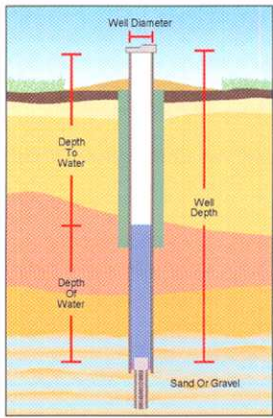
Q _b = flow entering the system across the upgradient area	0	m ³ /day
C _b = background nitrate concentration	0	mg/L
Q _e = flow entering the system from the septic drainfield	1.026	m ³ /day
C _e = concentration of nitrates in the septic effluent	12	mg/L
Q _i = flow entering the system from infiltration	1	m ³ /day
C _i = Concentration of nitrates in the infiltrate	0	mg/L
C_T =	6.80	mg/L

Notes: Site characteristic values were measured as approximate values from the available site plan. Daily Sewage Flow volume was calculated by Paterson Group.

TW1		inputs	
pH	8.15	A	0.19
TDS	767	B	2.37
Hardness	462	C	2.26
Alkalinity	289	D	2.46
Temp.	10.6		
		pHs =	7.133434026

Langelier Saturation Index (LSI) Calculation		(Langelier, 1936)
LSI = pH - pHs	A = (Log10 [TDS] - 1) / 10	
pHs = (9.3 + A + B) - (C + D)	B = -13.12 x Log10 (oC + 273) + 34.55	
Where:	C = Log10 [Ca2+ as CaCO3] - 0.4	
	D = Log10 [alkalinity as CaCO3]	
		LSI = 1.0
LSI	Effect	
0.5 to 2	Water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive)	
0 to 0.5	Water is super saturated and tends to precipitate a scale layer of calcium carbonate (slightly scale forming and corrosive).	
0	Water is saturated (in equilibrium) with calcium carbonate. A scale layer of calcium carbonate is neither precipitated nor dissolved.	
0 to -0.5	Water is under saturated and tends to dissolve solid calcium carbonate (slightly corrosivebut non-scale forming).	
-0.5 to -2	Water is under saturated and tends to dissolve solid calcium carbonate (seriously corrosive).	

Disinfection Instruction Sheet



If your drinking water continues to test positive on repeated submissions, consult your local health unit, which can help you interpret the results of your tests and provide you with advice on what measures you can take to safeguard your drinking water.

The first step in identifying the reason for repeated adverse water quality is to conduct a visual inspection of your well. Start with a close look at your well. The area around it should be

clear of any potential contaminant sources, such as pets, lawn care products, and gardens. Once you're satisfied that the area around your well is okay, take a good, close look at the well itself. If you have an older well, make sure that the cap and the sealant around the well casing isn't cracked or damaged. If it is, you need to fix or replace it right away.

If the source of the problem can't be detected, consult a licensed well contractor right away to identify the source of the problem and eliminate it. You can save yourself a lot of money by doing this instead of rushing out to buy a home treatment device that may be expensive to install, operate, and maintain. And it may not eliminate the source of your trouble.

(If you have a cistern, please talk to your public health unit about disinfection requirements.)

1. Measure the diameter of the well.
2. Measure the well depth and the static or resting water level, then calculate the depth of water in the well.
3. Using the table on this sheet, measure out the amount of bleach needed. (The table gives the volume of bleach needed for different well sizes.) Then, pour the mixture into your well.
4. If possible, mix the water in the well. This can be accomplished by attaching a hose to a tap, running water from the well, through the hose and back into the well.
5. After adding chlorine to the well, remove or bypass any carbon filters that are in the system for water treatment. If you don't, these filters will remove the chlorine from the water, and any pipes beyond the filter will not get disinfected. Replace with new filters after chlorination to avoid reintroducing bacteria into the system.
6. Run water at every faucet in the house (and barn, if you have one) until a strong chlorine odour is detected. Be aware that your nose may lose its ability to detect chlorine.
7. If there is no chlorine smell or it is very weak, add more bleach to the well and repeat Step 6 above.
8. Drain the water heater and fill with chlorinated water.
9. Backflush the water softener and all water filters (except carbon filters).

10. Let the chlorinated water stand in the system for at least 12 hours.

11. Clear chlorine from the well by running an outside hose to the ground surface. Then, run clear water through the faucets until the water no longer smells of chlorine.

12. Avoid putting too much chlorine into the septic system because the bacteria needed for septic decomposition may be killed.

13. Do not drink the water without boiling it until test results show the water is safe to drink.

Volume of Bleach to Add for Every 3 Metres (10 Feet) of Water in the Well*

Casing Diameter		Volume of Unscented Bleach (5.25% solution)
Millimetres	Inches	Millilitres
50	2	6
100	4	30
150	6	60
200	8	100
250	10	200
300	12	250
400	16	400
500	20	650
600	24	900
900	36	2000 (2 litres)
1200	48	3600 (3.6 litres)

For example: If you have 6 metres (20 feet) of water in your well and it has a casing diameter of 100 mm or 4 inches, you would add 60 mm or 2 fluid ounces of bleach.

* For questions or more information on how to disinfect your well, contact your local health unit.

For more information

Ontario Government Ministry Abbreviations

Ministry of Health and Long-Term Care
MOHLTC (also MOH)

Ministry of the Environment
MOE (also MOEE)

Ontario Ministry of Agriculture and Food
OMAF (also OMAFRA)

Ontario Government Information Lines

MOE Public Information Centre: 1-800-565-4923

MOE Water Well Records: 1-888-396-9355

MOHLTC INFOline: 1-800-268-1154

OMAF Agricultural Information Contact Centre: 1-877-424-1300

Ontario Government Web Sites

MOE: www.ene.gov.on.ca

MOHLTC: www.health.gov.on.ca

OMAF: www.gov.on.ca/omaf

Publications available on-line

Health Canada: www.hc-sc.gc.ca

- *A Guide to Well Water Treatment and Maintenance*;
- *Water treatment devices for disinfection of drinking water*.

MOHLTC: www.health.gov.on.ca

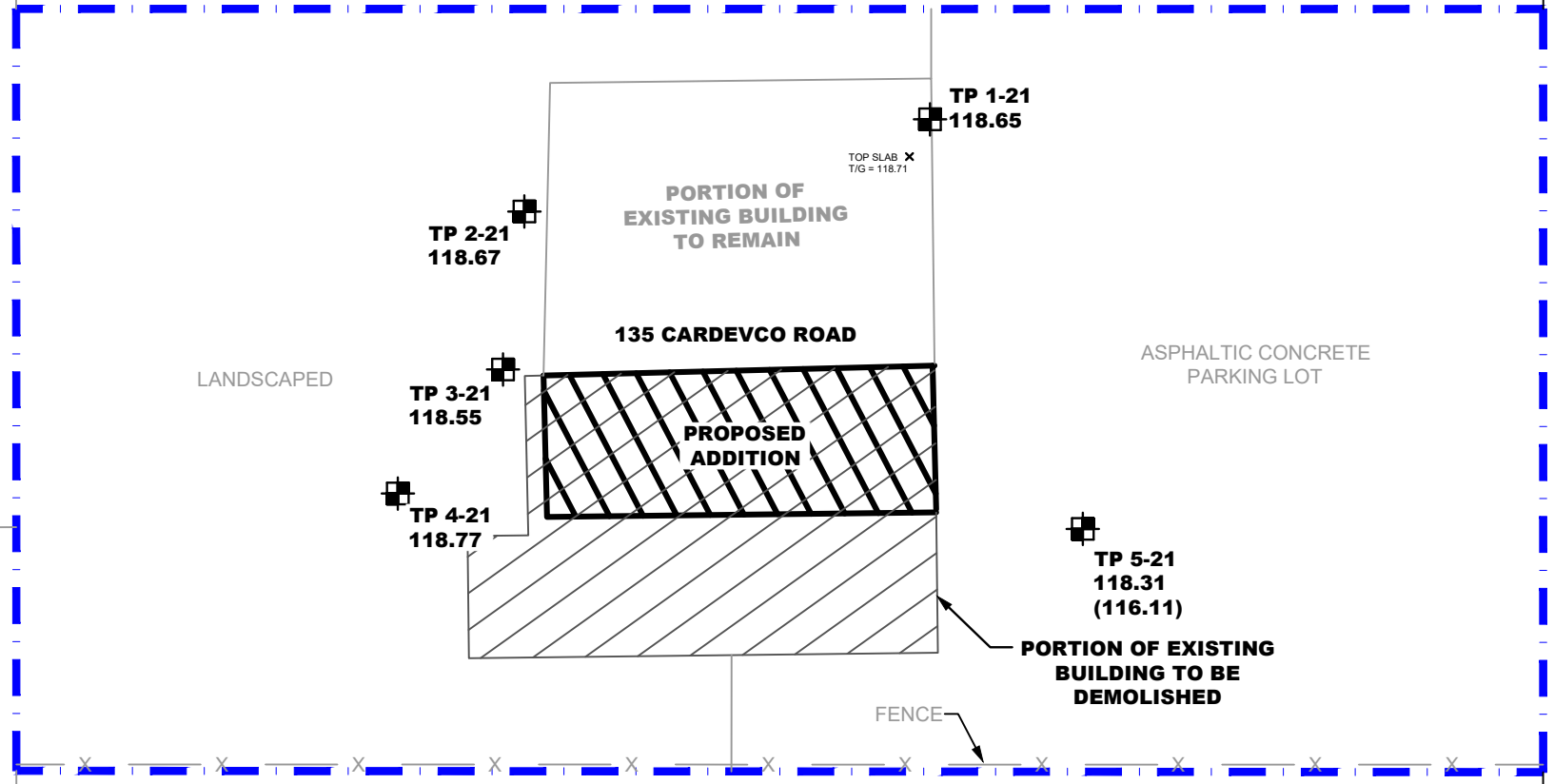
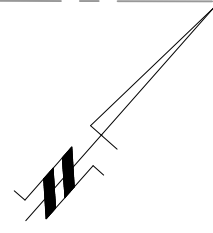
- *How to use water safely during a "Boil Water Advisory"*;
- *E. coli Bacteria*;
- List of Public Health Units in Ontario.

OMAF: www.gov.on.ca/omaf

- *Assessing the Potential for Ground Water Contamination on Your Farm*, Publication 97-017;
- *Best Management Practices: Water Wells*, OMAFRA and Agriculture and Agri-Food Canada, 2003 (to order).

MOE: www.ene.gov.on.ca

- *Important Facts About Water Well Construction*, Publication 3788;
- *Water Wells and Groundwater Supplies: The Protection of Water Quality in Bored and Dug Wells*, Information Sheet PIB 601b;
- *Water Wells and Groundwater Supplies: The Protection of Water Quality in Drilled Wells*, Information Sheet PIB 602b.



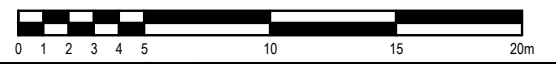
CARDEVCO ROAD

LEGEND:

- TEST PIT LOCATION
- 118.31 GROUND SURFACE ELEVATION (m)
- (116.11) PRACTICAL REFUSAL TO AUGERING ELEVATION (m)

CONCEPTUAL PLAN PROVIDED BY ARBAUM ARCHITECTS
 GROUND SURFACE ELEVATIONS AT TEST PIT LOCATIONS ARE REFERENCED TO A GEODETIC DATUM.

SCALE: 1:300



patersongroup
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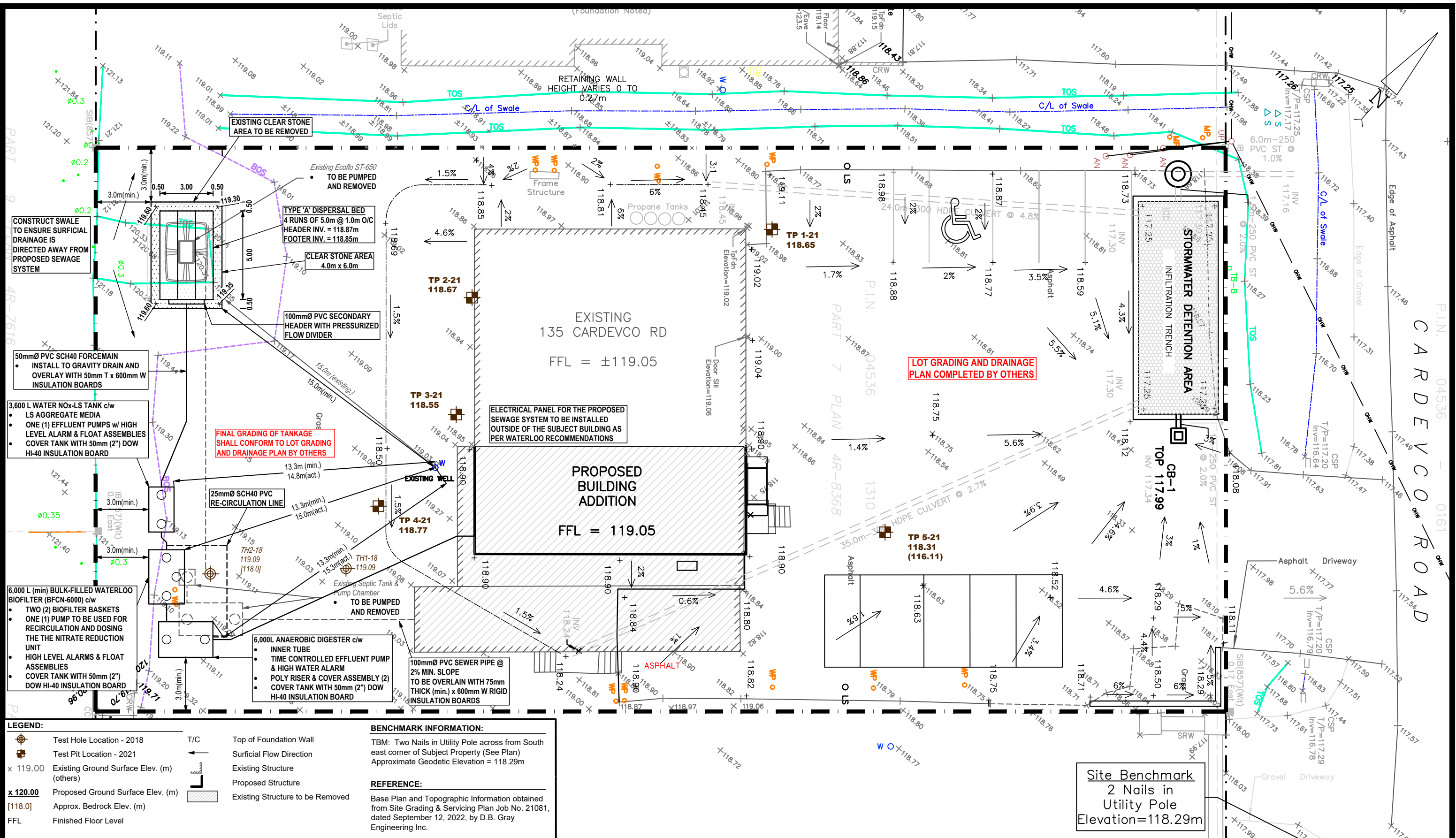
NO.	REVISIONS	DATE	INITIAL

PREMIER BUS LINES INC.
GEOTECHNICAL INVESTIGATION
PROPOSED INDUSTRIAL REDEVELOPMENT
135 CARDEVCO ROAD

OTTAWA (CARP), ONTARIO

TEST HOLE LOCATION PLAN

Scale:	1:300	Date:	11/2021
Drawn by:	JM	Report No.:	PE6018-1
Checked by:	MS	Dwg. No.:	PG6018-1
Approved by:	DJG	Revision No.:	



LEGEND:		BENCHMARK INFORMATION:	
	Test Hole Location - 2018	T/C	Top of Foundation Wall
	Test Pit Location - 2021		Surficial Flow Direction
	Existing Ground Surface Elev. (m) (others)		Existing Structure
	Proposed Ground Surface Elev. (m)		Proposed Structure
	Approx. Bedrock Elev. (m)		Existing Structure to be Removed
	Finished Floor Level		
		REFERENCE:	
		Base Plan and Topographic Information obtained from Site Grading & Servicing Plan Job No. 21081, dated September 12, 2022, by D.B. Gray Engineering Inc.	

9 AURIGA DRIVE
OTTAWA, ON
K2E 7S9
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DD/MM/YY	Description	Rev.
14/10/22	Issued for Septic Permit	1
26/09/22	Issued for Preliminary Review	0

Client: **PREMIER BUS LINES INC.**

Project: **PROPOSED ADDITION TO COMMERCIAL BUILDING
135 CARDEVCO ROAD
OTTAWA (CARP), ONTARIO**

Drawing: **SEWAGE SYSTEM LAYOUT PLAN**

Scale: 1:200

Date: 10/2022

Drawn by: HV

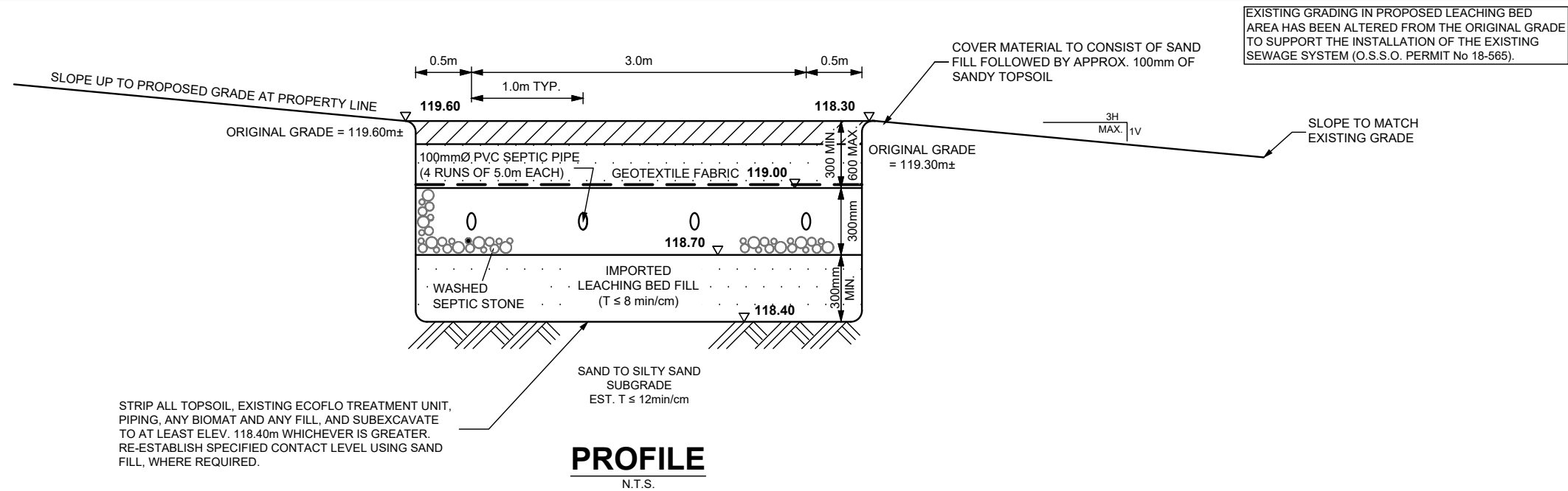
Checked by: MK

Drawing no.: **PH4600-1(rev.1)**

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SUBJECT DRAWING SHALL BE READ IN CONJUNCTION WITH PATERSON GROUP DRAWING PH4600-1(rev.1)

PROPOSED GRADING SHALL SUPPORT LOT GRADING AND DRAINAGE PLAN BY OTHERS.



NOTES:

1) ESTIMATE OF DAILY SEWAGE FLOW (Q)

THE PROPOSED SEWAGE SYSTEM REPLACEMENT, HAS BEEN DESIGNED TO SUIT THE NITRATE REDUCTION REQUIREMENTS OF PROPOSED ADDITION/RENOVATION WORKS OF THE BUILDING. THE DESIGN FLOW RATE HAS NOT BEEN INCREASED FROM THE EXISTING SEWAGE SYSTEM AS PER O.S.S.O. PERMIT No. 18-565. THE BUILDING CONSISTS OF A STORAGE/OFFICE TYPE USAGE. THE SEWAGE FLOW FOR THE EXISTING OCCUPANCY HAS BEEN CALCULATED AS FOLLOWS.

- OFFICE SPACE = 90m² @ 75 L/DAY PER 9.3m² = 726 L/DAY OR
- NO. OF LOADING BAYS = 2 X 150 L/DAY = 300 L/DAY
- ESTIMATED SEWAGE FLOW = 1,026 L/DAY

DESIGN SEWAGE FLOW RATE = 1,500 L/DAY

2) SOIL CONDITIONS

SOILS INFORMATION GATHERED BY PATERSON GROUP INC. ON SEPTEMBER 12, 2017 & NOVEMBER 12, 2021

TH 1-18, ELEV. 119.09m		TP 2-21, ELEV. 118.67m		TP 3-21, ELEV. 118.55m	
0-0.29	GRAVEL	0-0.10	TOPSOIL	0-0.12	TOPSOIL
0.29-1.20	SAND, TRACE GRAVEL	0.10-0.60	FILL: SISA, GRAVEL	0.12-0.60	FILL: SISA CRUSHED STONE
		0.60-0.70	RIGID INSULATION	0.60-0.70	RIGID INSULATION
		0.70-1.00	FILL: CRUSHED STONE	0.70-1.60	BROWN SILTY SAND
		1.00-2.10	BROWN SILTY SAND		

- TH DRY UPON COMPLETION - TP DRY UPON COMPLETION - TP DRY UPON COMPLETION

3) ANAEROBIC DIGESTER

- PUMP AND REMOVE EXISTING SEPTIC TANK.
- IT IS RECOMMENDED THAT A SINGLE-COMPARTMENT 6,000L WATERLOO ANAEROBIC DIGESTER MODEL ADIPC 6,000 BE INSTALLED.
- THE TANK SHALL BE BEDDED ON A LAYER OF OPSS GRANULAR 'A' OF AT LEAST 150mm IN THICKNESS AND COMPACTED TO AT LEAST 95% OF SPMD.
- INLET PIPE OF DIGESTER SHALL BE EQUIPPED WITH A WATERLOO INNER TUBE.
- ANAEROBIC DIGESTER SHALL BE EQUIPPED WITH AN INTERNAL PUMP CHAMBER.
- TANKS SHALL BE CONNECTED USING SCH 40 PVC SEWER PIPE WITH WATERTIGHT CONNECTIONS (i.e. STAINLESS STEEL LINK SEALS OR APPROVED EQUAL).
- THE PUMP TANK SHALL BE EQUIPPED WITH A SIMPLEX TIME OPERATED PUMP SYSTEM. THE PUMPS (i.e. LITTLE GIANT 12E EFFLUENT PUMP)
- FORCEMAIN TO CONSIST OF 50mmØ PVC SCH 40 PIPE.
- FORCEMAIN TO BE INSTALLED TO GRAVITY DRAIN TO THE TANK AND SHALL BE OVERLAIN WITH 50mm THICK BY 600mm WIDE INSULATION BOARDS.
- ALL PIPING TO BE GLUED.
- THE PUMP SHALL BE OPERATED BY A SIMPLEX CONTROL PANEL WITH TIMER CONTROL.
- A CONTROL SWITCH SHALL OVERRIDE THE TIMER TO MAINTAIN THE LIQUID LEVEL WITHIN THE WORKING CAPACITY OF THE TANK.
- ALL ELECTRICAL WORKS MUST BE CARRIED OUT BY A QUALIFIED ELECTRICAL CONTRACTOR IN ACCORDANCE TO THE LATEST CODES, BYLAWS AND REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY ELECTRICAL PERMITS AND COORDINATE ALL ELECTRICAL INSPECTIONS.
- THE DIGESTER TANK SHALL BE COVERED WITH 50mm (2") DOW HI-40 INSULATION BOARDS.
- FINAL GRADING SHALL BE SHAPED TO ENSURE THAT SURFACE WATER IS DIRECTED AWAY FROM ALL TANKS.
- A POLYLOK RISER AND INSULATED COVER ASSEMBLY, WHICH EXTENDS TO THE GROUND SURFACE, SHALL BE INSTALLED OVER THE EACH OF THE TANK OPENINGS.
- ACCESS LIDS SHALL INCLUDE SAFETY DEVICES AS PER CSA 866-21.

4) TREATMENT UNIT

- THE TREATMENT UNIT SHALL CONSIST OF A 6,000L WATERLOO BIOFILTER MODEL BFCN6000 WASTEWATER TREATMENT UNIT. THE TREATMENT UNIT SHALL BE INSTALLED IN SERIES AND DOWNSTREAM FROM THE DIGESTER TANK.
- A 50mmØ SCH 40 PVC FORCEMAIN SHALL BE USED TO CARRY THE EFFLUENT FROM THE PUMP TANK IN THE ANAEROBIC DIGESTER TO THE BULK FILLED BIOFILTER IN THE FIRST COMPARTMENT OF THE TREATMENT UNIT.
- FORCEMAIN SHALL BE INSTALLED TO GRAVITY DRAIN TO PUMP VAULT.
- THE FIRST COMPARTMENT OF THE BIOFILTER TANK SHALL BE BULK FILLED WITH THE BIOFILTER MEDIUM.
- THE WASTEWATER FROM THE PUMP VAULT SHALL BE DOSED USING SPRAY NOZZLES OVER EACH OF THE BASKETS IN BIOFILTER TANK.
- THE SECOND COMPARTMENT OF THE TREATMENT UNIT SHALL BE EQUIPPED WITH A SIMPLEX EFFLUENT PUMP. THE FINAL TREATED EFFLUENT COLLECTS ON THE FLOOR OF THE SECOND COMPARTMENT AND THE EFFLUENT PUMP (LITTLE GIANT 12E), DOSES THE NITRATE REDUCTION UNIT AS WELL AS THE RECIRCULATION RECIRCULATION.
- THE TREATMENT UNIT SHALL BE PROVIDED WITH A MINIMUM OF 510 mm SOIL COVER AND OVERLAIN WITH 50mm THICK HI INSULATION BOARDS.
- A POLYLOK RISER AND CHARCOAL VENTED INSULATED COVER ASSEMBLY, WHICH EXTENDS TO THE GROUND SURFACE, SHALL BE INSTALLED OVER EACH OF THE TANK OPENINGS.

5) WATER NOx-LS TANK

- INSTALL A NEW 3,600L CONCRETE, TWO-COMPARTMENT WATER NOx-LS TANK
- FIRST COMPARTMENT TO CONTAIN LIME-SULPHUR AGGREGATE MEDIA
- SECOND COMPARTMENT TO BE EQUIPPED WITH ONE (1) LITTLE GIANT 12E (OR EQUIVALENT) EFFLUENT PUMP AND OPERATIONAL AND HIGH-LEVEL ALARM FLOATS SET TO MANUFACTURER SPECIFICATIONS
- ACCESS LID TO TANK OPENING SHALL BE EXTENDED TO THE GROUND SURFACE. INSTALL RISER AND COVER TO SUIT

6) FORCEMAIN (TO TYPE 'A' DISPERSAL BED)

- A 50mmØ SCH 40 FORCEMAIN SHALL BE USED TO CARRY THE EFFLUENT FROM THE WATER NOx-LS TANK TO THE SECONDARY HEADER OF THE TYPE 'A' DISPERSAL BED.
- FORCEMAIN SHALL BE INSTALLED TO EITHER GRAVITY DRAIN BACK TO THE PUMP CHAMBER OR BURIED MIN. 1.8m BELOW GROUND SURFACE TO PROVIDE FROST PROTECT OF THE CHARGED LINE.
- THE FORCEMAIN SHALL BE INSTALLED ON A 150mm THICK LAYER OF COMPACTED SAND OVERLAIN WITH 50mm T x 600mm W RIGID INSULATION BOARD IF NOT INSTALLED 1.8m B/G.
- OPERATIONAL FLOAT TETHER LENGTH SHALL BE SET TO MANUFACTURER SPECIFICATIONS.
- PUMP CHAMBER SHALL BE EQUIPPED WITH A HIGH-LEVEL ALARM FLOAT SET TO ALLOW RESPONSE TIME IN THE EVENT OF PUMP FAILURE.

7) TYPE 'A' DISPERSAL BED SIZING REQUIREMENTS

- STONE AREA REQUIRED = $Q/50 = 1,500/75 = 20.0m^2$
- USE 4 RUNS OF 5.0m EACH @ 1.0m o/c
- STONE AREA PROVIDED = $4.0m \times 6.0 = 24.0m^2$
- SAND AREA REQUIRED = $1,900(12)/850 = 21.2m^2$
- SAND AREA PROVIDED = $4.0m \times 6.0m = 24.0m^2$

8) TYPE 'A' DISPERSAL BED CONSTRUCTION GUIDELINES

- REMOVE ALL TOPSOIL/ ECOFLO TREATMENT UNIT/ PIPE/ STONE/ BIOMAT/ CONTAMINATED MATERIAL ASSOCIATED WITH EXISTING DISPOSAL FIELD AND SUBEXCAVATE TO AT LEAST ELEVATION 118.40m
- A MINIMUM THICKNESS OF 0.30m OF LEACHING BED SAND FILL, HAVING A PERCOLATION RATE OF NOT GREATER THAN 8 min/cm, SHALL BE INSTALLED BELOW OVER THE EXTENDED BASE AREA.
- LEACHING BED SAND FILL SHALL CONSIST OF UNIFORM SAND WITH GRADING LIMITS SIMILAR TO 100% PASSING 13.2mm SIEVE, LESS THAN 5% PASSING 0.075mm SIEVE AND HAVING A PERCOLATION RATE OF 6 TO 8 min/cm.

COVER MATERIAL TO CONSIST OF SAND FILL FOLLOWED BY APPROX. 100mm OF SANDY TOPSOIL

EXISTING GRADING IN PROPOSED LEACHING BED AREA HAS BEEN ALTERED FROM THE ORIGINAL GRADE TO SUPPORT THE INSTALLATION OF THE EXISTING SEWAGE SYSTEM (O.S.S.O. PERMIT No 18-565).

SLOPE TO MATCH EXISTING GRADE

ORIGINAL GRADE = 119.30m±

ORIGINAL GRADE = 119.60m±

ORIGINAL GRADE = 119.30m±

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- THE LEACHING BED FILL SHALL CONFORM TO THE REQUIREMENTS OF 8.7.7.1 (4)(a) OF THE OBC.
- THE DISTRIBUTION PIPES (4 RUNS OF 5.0m EACH) SHALL CONSIST OF 100mmØ PERFORATED PVC SEPTIC PIPE WHICH SHALL BE EMBEDDED IN A CONTINUOUS 300mm THICK LAYER OF WASHED SEPTIC STONE.
- THE INVERT LEVEL OF THE DISTRIBUTION PIPES SHALL BE SET AT ELEVATION 118.87m AT THE HEADER AND ELEVATION 118.85m AT THE FOOTER.
- THE ENDS OF EACH RUN SHALL BE INTERCONNECTED WITH A SOLID PVC FOOTER PIPE.
- THE CLEAR STONE LAYER SHOULD BE COVERED WITH A NON-WOVEN GEOTEXTILE FABRIC.
- THE SURFACE OF THE BED SHOULD BE COVERED WITH PERMEABLE SAND FOLLOWED BY APPROXIMATELY 100mm OF SANDY TOPSOIL. THE BED AREA SHOULD BE VEGETATED.
- THE TOTAL THICKNESS OF THE COVER OVER THE CLEAR STONE SHOULD BE WITHIN A RANGE OF 0.3m TO 0.6m.
- THE SIDES OF THE BED SHOULD BE SLOPED IN THE RANGE OF 3H:1V OR SHALLOWER.

9) MINIMUM CLEARANCE DISTANCE FROM LEACHING BED

- 3.0m FROM ANY PROPERTY LINE
- 5.0m FROM ANY STRUCTURE; 5.0m TO ANY STRUCTURE WITHOUT PERIMETER DRAINAGE
- 15.0m FROM ANY DRILLED WELL; 31.1m TO ANY DUG OR SANDPOINT WELL

10) MINIMUM CLEARANCE DISTANCE FROM TANK(S)

- 1.5m FROM ANY STRUCTURE
- 13.3m FROM SUBJECT DRILLED WELL AND 15.0m FROM ANY OTHER DRILLED WELL (AS PER EXISTING)
- 3.0m FROM ANY PROPERTY LINE

11) GENERAL

- ELECTRICAL PANEL FOR TANKAGE SHALL BE LOCATED OUTSIDE OF SUBJECT BUILDING NEAREST THE TANKAGE AS RECOMMENDED BY WATERLOO.
- SNOW STORAGE SHALL NOT BE PLACED OVER THE SEWAGE SYSTEM COMPONENTS.
- THE SEWAGE SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT TRAFFIC LOADING, AND AS SUCH, THE RISK OF ANY VEHICULAR TRAFFIC SHOULD BE MINIMIZED WITH THE INSTALLATION OF PROTECTIVE BOLLARDS.
- THE BACKFILLING OF THE SEWAGE SYSTEM SHOULD MINIMIZE THE RISK OF OVER COMPACTION WITH THE USE RUBBER TRACKED EQUIPMENT AND BY AVOIDING THE CREATION OF ANY CONSTRUCTION ROUTES OR PATHWAYS OVER THE SYSTEM.
- THE BACKWASH WATERS FROM ANY WATER TREATMENT UNIT, SUCH AS WATER SOFTENER, SHOULD NOT DISCHARGE INTO THE SEWAGE SYSTEM.
- THE SEWAGE SYSTEM HAS BEEN DESIGNED TO ACCEPT ONLY WATER FROM DOMESTIC TYPE FIXTURES - NO FLOOR DRAINS, WASHWATER, ETC ARE TO BE DIRECTED TO SYSTEM.
- CONTRACTOR SHALL BE QUALIFIED AND REGISTERED UNDER PART 8 OF THE ONTARIO BUILDING CODE.
- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST BY-LAWS, CODES AND REGULATIONS.
- CONTRACTOR SHALL REVIEW DRAWINGS IN DETAIL AND SHALL INFORM THE CONSULTANT OF ANY ERRORS AND/OR OMISSIONS ON DESIGN DRAWINGS IMMEDIATELY.
- CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING UNDERGROUND SERVICES.
- CONTRACTOR SHALL VISIT THE SITE AND REVIEW ALL DOCUMENTATION TO BECOME FAMILIAR WITH THE SITE AND SUBSURFACE SOIL CONDITIONS TO DETERMINE SUITABLE METHODS OF CONSTRUCTION.
- THE FIRM OF PATERSON GROUP INC. HAS PROVIDED DESIGN SERVICES ONLY FOR THE SUBJECT SEWAGE SYSTEM. THE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES AND OUR INTERPRETATION OF PART 8 OF THE ONTARIO BUILDING CODE.
- IF THIS FIRM IS TO COMPLETE ANY CONSTRUCTION INSPECTION(S), ADDITIONAL FEES MAY BE APPLIED. CONFIRMATION OF PAYMENT WILL BE REQUIRED PRIOR TO THE INSPECTION.
- THE TEST HOLE INFORMATION PROVIDED, IS INTENDED TO BE USED FOR DESIGN PURPOSES ONLY, AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IF DISCREPANCIES ARE FOUND DURING THE CONSTRUCTION PROCESS, IT IS THE CLIENT'S RESPONSIBILITY TO CONTACT THIS FIRM TO MAKE ANY NECESSARY COMMENTS OR REVISIONS. ADDITIONAL REVISIONS ARE NOT CONSIDERED PART OF THE DESIGN WORKS AND WILL BE CONSIDERED AS AN ADDITIONAL COST.
- REFER TO PATERSON GROUP DRAWING No. PH4600-1(rev.1) FOR THE SEWAGE SYSTEM LAYOUT.

DD/MM/YY	DESCRIPTION	REV.
14/10/22	Issued for Septic Permit	1
26/09/22	Issued for Preliminary Review	0

Consultant:



Client:

PREMIER BUS LINES INC.

Project:

PROPOSED ADDITION TO COMMERCIAL BUILDING

135 CARDEVCO ROAD OTTAWA (CARP), ONTARIO

Drawing:

SEWAGE SYSTEM DETAIL & NOTES

Scale:

N.T.S.

Drawn by:

HV

Date:

10/2022

Checked by:

MK

Drawing No.:

PH4600-2(rev.1)

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