

Geotechnical and Hydrogeologic Investigation

Report

Proposed Residential Development Centre Road Phase 2 Uxbridge, Ontario

Report for Mason Homes Limited





Executive Summary

This report presents the results of a geotechnical investigation that was conducted in support of a proposed residential development being considered for a site located along the east side of Centre Road approximately 0.2km north of Oakside Drive in Uxbridge, Ontario (herein referred to as "the Property" and "the Site"). The Property encompasses an area of approximately 13.1 hectares (32.4 acres) and is vacant of structures. The Property consists of agricultural and forested land. The planned development will consist of a mixture of houses, semi-detached dwellings, townhouses, and other residential units.

The development will be municipally serviced with piped potable water (water main) and sanitary sewer. GHD Limited (GHD) was retained by Mason Homes Limited ("the Client") to complete this geotechnical and hydrogeologic investigation. The study has included a site inspection, advancement of four (4) boreholes, soil sampling, water level monitoring, a well survey (to compliment a review of available Ministry of the Environment, Conservation and Parks (MECP) well records), hydraulic conductivity testing and a water balance evaluation based upon current design information.

The Site is generally covered with topsoil underlain by a thin deposit of silty sand and then glacial till and/or clayey silt. A shallow groundwater table was not encountered. It is our opinion that there will not be significant constraints for the proposed residential development from the seasonal variations of groundwater as the water can be handled with appropriate engineering techniques. It is expected that groundwater will generally be below the depth of the future development, although seepage may be encountered in deeper excavations or foundations. Seepage is expected to be seasonal in nature. If short-term pumping of groundwater at volumes greater than 50,000 L/day and less than 400,000L/day is required during the construction stage, the Environmental Activity Sector Registry (EASR) must be completed.

There are minor impacts expected to groundwater and surface water as a result of the future development provided that appropriate planning (i.e. incorporation of LIDs as supported by the water balance calculations), mitigation measures and proper construction techniques are considered.

From a geotechnical perspective, the Site is suitable for construction of the proposed development including two to three-storey residential buildings, associated servicing, paved access roads and parking. Detailed recommendations are provided in subsequent sections of this report.



Table of Contents

1.	Intro	oduction					
2.	Scop	oe of Invest	tigation	1			
3.	Proje	ect Details.		2			
4.	Site	Conditions		3			
	4.1	General.		3			
	4.2	Subsurfa	ace	3			
		4.2.1 4.2.2 4.2.3 4.2.4 4.2.5 4.2.6	Regional Physiography and Geology Local Subsurface Soil Conditions Groundwater Water Quality Hydraulic Conductivity Infiltration Testing				
5.	Hydr	ogeology		8			
	5.1	Existing I	Local Water Supplies	8			
	5.2	Source V	Vater Protection Considerations	9			
6.	Cond	clusions an	nd Recommendations	10			
	6.1	Hydroged	ology	10			
		6.1.1 6.1.2 6.1.3 6.1.4 6.1.5 6.1.6	Water Balance Evaluation Impact on Groundwater Baseflow Impact on Surface Water Bodies Mitigation Measures Servicing Dewatering for Construction	12 13 13 13			
	6.2	Geotechi	nical	14			
		6.2.1 6.2.2 6.2.3 6.2.4 6.2.5 6.2.6 6.2.7 6.2.8	Site Preparation and Excavation Service Installation Foundation Design Slab on Grade Basement Retaining Walls Stormwater Management Pond Design Pavement Design General Recommendations				
	6.3	Summar	y Conclusions	21			
7.	Refe	rences		23			
8.	State	ement of Li	mitations	24			



Table Index

4.1 Graii	n Size Distr								
4.2 Sum	Summary of Monitoring Well Information								
4.3 Pote	Potentiometric Water Level Summary								
4.4 Wate	er Quality S	ummary							
6.1 Pre I	Developme	nt Sumn	nary						
6.2 Post	Developme	ent Sum	mary (N	o Enhan	cements	s)			
6.3 Post	Developme	ent Sum	mary (W	ith Enha	nced In	filtration)			
6.4 Dept	h to Compe	etent Be	aring Na	tive Soil					
6.5 Preli	minary Bea	ring Pre	ssures f	or Found	dation D	esign			
6.6 Pave	ement Struc	ture							
SURES									Figure 1
ty Plan .	·								· ·
ty Plan . erty Plan .									Figure 2
ty Plan .									Figure 2
ty Plan . erty Plan .									Figure 2 Figure 3
ty Plan . erty Plan . Plan .								·	Figure 2 Figure 3 Figure 4
ty Plan . erty Plan . Plan . ept Plan .	· ·								Figure 2 Figure 3 Figure 4 Figure 5
ty Plan .erty Plan . Plan .ept Plan .ept Plan .e	· ·								Figure 2 Figure 3 Figure 4 Figure 5 Figure 6
ty Planerty Plan Planept Plan Hole Plan	vation .								Figure 2 Figure 3 Figure 4 Figure 5 Figure 6 Figure 7
ty Planerty Plan Planept Plan Hole Plan ndwater Elev	/ation .								Figure 1 Figure 2 Figure 3 Figure 4 Figure 5 Figure 6 Figure 7 Figure 8 Figure 9

Appendix A	Soil Exploration Data
Appendix B	MECP Well Records and Well Survey
Appendix C	Hydraulic Conductivity Data
Appendix D	Analytical Data
Appendix E	Water Balance Calculations



1. Introduction

This report presents the results of a geotechnical investigation that was conducted in support of a proposed residential development being considered for land located along the east side of Centre Road approximately 0.2km north of Oakside Drive in Uxbridge, Ontario (herein referred to as "the Property" and "the Site"). The Property encompasses an area of approximately 13.1 hectares (32.4 acres). The majority of the Property consists of agricultural land used for cash crops. Some mixed trees and bush occur along the northern fenceline and at the east end of the Site. A detailed plan of the proposed development was not available at the time of the investigation. However, Mason Homes Limited ("the Client") has indicated that the planned development will consist of a mixture of houses and townhouses. The development will be municipally serviced with piped potable water (water main) and sanitary sewer. GHD Limited (GHD) was retained by the Client to complete this combined geotechnical and hydrogeologic investigation. Geographically, the Site is located on Part Lot 33, Concession 6, Township of Uxbridge, Regional Municipality of Durham.

The general location of the Site is illustrated on the Vicinity Plan, Figure 1. The location with respect to surrounding roads and land use is depicted on the Site Plan, Figure 2. Specific details of the Site and surrounding properties based on recent aerial photography is presented on the Plot Plan, Figure 3. A current design drawing (provided by the Client) depicting the general layout of the proposed development is presented on the Concept Plan, Figure 4. The borehole locations are illustrated on the Test Hole Plan, Figure 5. These plans and other figures can be reviewed in the Enclosures section.

2. Scope of Investigation

The purpose of the investigation was to define the prevailing geotechnical and hydrogeologic conditions at the Site. The hydrogeologic aspects of the study included the subsurface soil stratigraphy, groundwater movement, assessing groundwater supplies and evaluating potential impacts from the proposed development and related construction. The geotechnical investigation was conducted to provide recommendations relevant to earthwork construction, possible dewatering, foundation and slab on grade design, buried service installation and pavement structure. The following scope of work was performed to accomplish the foregoing purposes.

- 1. Reviewed available background information relevant to the Site such as geologic, physiographic and water resources reports and maps.
- 2. Carried out an inventory of available well record data on file with the Ministry of the Environment, Conservation and Parks (MECP) for the immediate area to evaluate the physical characteristics of the aquifer complexes that underlie the region. A field survey of the general area was carried out to supplement the MECP data.
- 3. A walkover inspection was conducted to review surficial ground characteristics.



- 4. The subsurface conditions were explored by advancing, sampling and logging a total of four (4) boreholes. The subsurface conditions were recorded and summarized in Appendix A. The boreholes were advanced to depths ranging from 6.2 to 6.7m. A monitoring well was installed in each of the four (4) boreholes to facilitate water level measurements.
- 5. Falling and/or rising head (slug) tests were completed at the four (4) monitoring well locations to evaluate hydraulic conductivity of the subsoils. The infiltration rate of the upper vadose zone was evaluated based on the soil type observed and grain size analyses.
- 6. Carried out laboratory analyses of materials encountered including grain size testing and moisture content determinations of representative soil samples.
- 7. Obtained a representative groundwater sample from three (3) of the monitoring wells and submitted the samples for chemical testing to determine background chemistry.
- 8. Completed a water balance that considers pre- and post-development conditions and evaluates groundwater baseflow conditions based on the current design.
- 9. Prepared a detailed report using engineering analyses of the acquired data outlining our conclusions and recommendations presented herein.

The boreholes were advanced using a track mounted drill rig equipped with continuous flight, solid stem power augers. Representative, disturbed samples of the strata penetrated were obtained using a split-barrel, 50mm outer-diameter (OD) sampler advanced by a 63.5 kg hammer dropping approximately 760 mm. The results of these standard penetration tests (SPT's) are reported as "N" values on the borehole logs at the corresponding depths. Samples were also obtained directly from augers cuttings.

Soil samples obtained from the test holes were inspected in the field immediately upon retrieval for type, texture, and colour. All test holes were backfilled following completion of the fieldwork. All samples were sealed in clean plastic containers and transported to the GHD laboratory for further visual-tactile examination, and to select appropriate samples for laboratory analysis.

Project Details 3.

The preliminary conceptual plan is provided as Figure 4. The drawing (supplied by the Client) indicates that the area of the Site is 13.1 hectares (32.4 acres). It is GHD's understanding that the proposed development will consist of 2 to 3-storey residential buildings with a paved access roads and associated parking. The development will be municipally serviced for potable water and sanitary sewers. GHD has assumed that the buildings will have basements.



4. Site Conditions

4.1 General

The field program consisted of a site inspection, soils investigation, hydraulic conductivity testing, and measurement of water levels in the monitoring wells. The boreholes were drilled on March 1, 2021. Borehole records and physical test results of representative soil samples are presented in Appendix A. A site reconnaissance was conducted by GHD prior to the subsurface investigation to observe the general surficial characteristics of the Site.

The Property is bounded by Centre Road to the west. Neighbouring properties to the west and north generally support rural residential homes. Land to the south supports a perennial un-named stream that is a tributary to Uxbridge Brook. Residential homes occupy land to the east and further south. Access to the Site is from Centre Road to the west or Maple Brook Drive to the east. The Property is vacant of structures. The Property consists of agricultural and forested land. The ground surface is relatively flat lying with a gentle slope towards the southeast in the direction of the un-named stream.

4.2 Subsurface

4.2.1 Regional Physiography and Geology

The Property is situated in the physiographic region known as the Oak Ridges Moraine (Chapman and Putnam, 1984). As illustrated on the Figure 7, the majority of the Site exists within a sand plain. An exception is a small portion of the northwest corner of the Property which exists in a drumlinized till plain. Occasional drumlins occur in the local landscape approximately 1.4km north of the Site. A clay plain exists approximately 0.3km to the south. The surficial geology (Figure 8) is comprised of foreshore-basinal deposits. A deposit of stone-poor, carbonate derived silty to sandy till is present in an area near the east end of the Site. The Ontario Geological Survey information (Figure 9) indicates that the Quaternary geology for the area is glaciolacustrine deposits; sand, gravelly sand and gravel; nearshore and beach deposits.

A review of available MECP well information identified a total of twelve (12) records within 0.25km of the Site (some of which were either monitoring wells or abandonment records). The well records indicate the presence of clay and /or silty sand over glacial till with intermittent layers of sand and gravel in the area. The well records considered are provided and shown in Appendix B. Physical data are presented on some of the MECP well records. The water well information is discussed in Section 5.1.

4.2.2 Local Subsurface Soil Conditions

The subsurface stratigraphy was investigated by drilling four (4) boreholes on March 1, 2021. A monitoring well was installed in all four (4) of these boreholes to facilitate water level measurements and testing. The locations of the test holes are illustrated on the Test Hole Plan, Figure 5. The boreholes are labelled BH-1 through to BH-4.



Details of the subsurface conditions encountered are graphically presented in Appendix A. It should be noted that the boundaries between the strata have been inferred from the test hole observations and non-continuous samples. They generally represent a transition from one soil type to another and should not be inferred to represent an exact plane of geological change. Further, conditions may vary between and beyond the test holes. A summary of the grain size analyses conducted on five (5) representative samples of the sub-soil is presented in Table 4.1.

The soils encountered generally consisted of surficial topsoil, underlain by a layer of silty sand and then a basal deposit of either glacial till or clayey silt. A discontinuous layer of silty sand was found to exists in the till in two (2) of the boreholes. The surficial layer of topsoil ranged in thickness from 127mm to 178mm and averaged 159mm. This soil was observed to be in a damp, loose state, with a silty, highly organic content. As such, it is expected to be devoid of any structural engineering properties.

A thin layer of silty sand was found to exist beneath the topsoil in all four (4) boreholes. Thickness of the silty sand ranged from 0.60m (BH-2) to 2.20m (BH-4). The average thickness of the silty sand was 1.35m. The silty sand was described as light brown to dark brown in colour. Moisture content tests conducted on samples of the silty sand yielded values ranging from 8 to 35% moisture by weight indicating that it exists in a moist to wet state. The relative density of the silty sand is generally described as very loose to compact based on SPT N values that ranged from 3 to 22 blows /300mm. The average N-value was 9.9 blows /300mm. A grain size distribution analysis conducted on a representative sample of the silty sand suggests the following compositional range: 3% gravel, 41% sand, and 56% silt and clay-sized particles by weight (Unified Soil Classification System (USCS)).

Glacial till was encountered in three (3) of the four (4) boreholes. The till was not encountered in BH-4 which was targeted in the eastern portion of the Site. Where encountered, the till was found to exist at an average depth of 1.3m. The till was typically brown to light brown in colour. The texture varied throughout the Site but was generally described as silty sand containing varying amounts of gravel. The till exists in a generally moist condition with moisture contents ranging from 8 to 13% by weight. The average moisture content of the till was 10.4%. The relative density of the till is described as compact to very dense based on SPT N values that ranged from 13 to in excess of 100 blows /300mm. The average N-value was 53 blows /300mm. A grain size distribution analysis conducted on a representative sample of the till suggests the following compositional range: 17% gravel, 48% sand, and 35% silt and clay-sized particles (USCS) by weight. A hydrometer analysis conducted on a sample suggest that the till contains 27% particles between 5 and 75 µm in size.

An interbedded layer of sand was encountered at depth in two (2) of the boreholes, i.e. BH-1 and BH-2. The sand was encountered at depths of 6.1 and 3.0m, respectively. The soil was described as light brown to brown sand with varying amounts of silt. Moisture content tests conducted on samples of the sand yielded values ranging from 10 to 20% moisture by weight indicating that it exists in a moist to wet state. The relative density of the sand is generally described as compact to very dense based on SPT N values that ranged from 24 to in excess of 100 blows /300mm. A grain size distribution analysis conducted on a representative sample of the sand suggests the following compositional range: 9% gravel, 62% sand, and 29% silt and clay-sized particles by weight (USCS).



Clayey silt was encountered in two (2) boreholes in the eastern portion of the Site, i.e. BH-3 and BH-4. Where encountered, the clayey silt was found to exist at an average depth of 3.5m. The clayey silt was typically grey in colour and exists in a generally moist to wet condition with moisture contents ranging from 15 to 27% by weight. The average moisture content of the clayey silt was 22.6%. The relative consistency of the clayey silt is generally described as firm to hard based on SPT N values that ranged from 8 to 76 blows /300mm. The average N-value was 28.2 blows/300mm. Grain size distribution analyses conducted on two (2) representative samples of the clayey silt suggest the following compositional range: 3 to 6% gravel, 4 to 26% sand, and 68 to 93% silt and clay-sized particles (USCS) by weight. Hydrometer analyses conducted on these samples suggest that the clayey silt contains 56 to 58% particles between 5 and 75 μ m in size. Atterberg Limits determinations were conducted on two (2) samples of the clayey silt indicated the Plasticity Index ranging from 6 to 14% and Liquid Limit ranging from 19 to 30%.

Table 4.1 Grain Size Distribution Summary

			Grain Size			
Location	Depth (m)	0/ Croval	0/ Cand	%Fines		Observed Soil Unit
		%Gravel	%Sand	%Silt	%Clay	
BH-1, SS-4	2.3 – 2.9	1	48	27	8	Silty Sand Till, Trace Gravel
BH-2, SS-5	3.0 - 3.7	9	62	2	9	Silty Sand, Trace Gravel
BH-3, SS-6	2.3 – 2.9	6	26	56	12	Sandy Silt, Trace Gravel
BH-4, SS-3	1.5 - 2.1	3	41	5	6	Sandy Silt
BH-4, SS-5	3.0 - 3.7	3	4	58	35	Clayey Silt

Notes: %Fines indicates silt and clay particles; grain size distribution based on Unified Soil Classification System.

4.2.3 Groundwater

Groundwater seepage was observed in all four (4) boreholes at depths ranging from 0.9m (BH-4) to 4.6m (BH-3) during the drilling operations. Monitoring wells were installed in all four (4) boreholes in order to facilitate monitoring of groundwater levels. A summary of the monitoring well details is provided below in Table 4.2.

Table 4.2 Summary of Monitoring Well Information

Location	Depth of Well (m)	Pipe Stick-Up (m)	Effective Well Screen Interval (m)	Water Seepage Depth (m)
BH-1	4.60	1.07	3.10 - 4.60	2.30
BH-2	3.70	0.73	2.20 - 3.70	3.00
BH-3	3.70	0.74	2.20 - 3.70	4.60
BH-4	4.60	1.08	1.60 - 4.60	0.91

Groundwater potentiometric levels were measured on March 10, 2021 in the installed monitoring wells. The data has been plotted on Figure 6 and summarized in Table 4.3.



Table 4.3 Potentiometric Water Level Summary

Location	Ground Elevation (m)*	Water Level (m) March 10, 2021	GW Elevation (m) March 10, 2021
BH-1	281.741	1.50	280.24
BH-2	278.420	3.30	275.12
BH-3	275.951	dry	
BH-4	269.696	0.90	268.80

Notes: m = metres; GW = groundwater; (*) Elevations were surveyed for vertical control using a Leica GPS 1200 Global Navigation Satellite System. The elevations provided are for the purposes of evaluating groundwater elevation and flow direction and should not be relied upon as a legal survey or topographic elevation survey.

The potentiometric elevations range from 280.24 to 268.80m indicating a moderate horizontal gradient. Based on the water level data collected and the surrounding topography, the overall shallow groundwater flow direction is to the south towards to the small un-named tributary to Uxbridge Brook (<0.1km to the south).

The direction of shallow groundwater movement is illustrated on the Groundwater Elevations plan, Figure 6. It is expected that groundwater seepage will be encountered intermittently at depths ranging from 0.9 to 4.6m (similar to what encountered during the subsurface exploration). It should be noted that groundwater levels are transient and tend to fluctuate with the seasons, periods of precipitation and temperature.

4.2.4 Water Quality

A groundwater sample was collected from three (3) of the monitoring wells (BH-1, BH-2 and BH-4) for the purpose of determining background water quality. The certificate of chemical analysis is presented in Appendix D. The water quality data are summarized and compared with the Ontario Drinking Water Standards (ODWS) in Table 4.4.



Table 4.4 Water Quality Summary

		Monitoring Well		ODWS			
PARAMETER	BH-1	BH-2	BH-4	MAC	IMAC	AO/OG	
Alkalinity (as CaCO ₃)	255	357	177			30 to 500	
Ammonia - Total	0.1	0.11	0.06				
Calcium	157	166	86.9				
Chloride	66.7	32.5	59.3			250	
Colour (T.C.U.)	< 2	< 2	< 2			5	
Conductivity (mS/cm)	926	1070	652				
Copper	< 0.002	< 0.002	< 0.002			1.0	
Fluoride	< 0.1	< 0.1	< 0.1	1.5			
Hardness (as CaCO ₃)	456	482	309			80 to 100	
Iron	< 0.005	0.021	< 0.005			0.3	
Magnesium	15.5	16.2	22.3				
Manganese	0.208	0.155	0.024			0.05	
Nitrite (N)	0.1	< 0.1	< 0.1	1.0			
Nitrate (N)	14.3	11.2	9.8	10			
pH (units)	7.81	7.61	7.92			6.5 to 8.5	
Potassium	2.5	1.6	1.4				
Sodium	22.9	81.2	14.3			200	
Sulphate	69	122	22			500	
Turbidity (N.T.U.)	42.7	249	332	1		5	
Zinc	< 0.005	0.011	< 0.005			5.0	

Notes: All units in mg/L (i.e. parts per million) unless otherwise noted. MAC = maximum acceptable concentration (health related); IMAC = Interim MAC (insufficient data to establish MAC or not feasible to establish MAC to desired level); AO/OG = aesthetic objective or operational guideline (not health related). **Bolded value** exceeds ODWS.

The groundwater beneath the Site is relatively hard which is common in Southern Ontario due to overburden materials containing calcium. The elevated turbidity is an indication that the monitoring wells require further development. In general, the water quality is relatively good.

4.2.5 Hydraulic Conductivity

Hydraulic conductivity (K) testing was completed at monitoring wells (BH-1, BH-2, BH-3 and BH-4) on March 10, 2021. The testing consisted of rising and/or falling head testing and was completed by introducing a one-metre long slug (or measured volume of water) within the well, and then measuring the water levels using a data logger programmed to record readings at three (3) second intervals. The data was analyzed using AQTESOLV and the Bouwer-Rice solution for each test (Appendix C).

The K values for the hydraulic conductivity testing ranged from on the order of 10⁻⁵ to 10⁻⁶ cm/sec. The K values from the test data indicate that the monitoring wells were screened within a low to moderate (glacial till) hydraulic conductivity unit. The hydraulic conductivity testing suggests that excavations within these soils are expected to yield little water. However, increased amounts of water may be expected when pockets, seams or layers of sand and/or gravel are intersected.



4.2.6 Infiltration Testing

For purposes of Low Impact Development strategies, infiltration data of the shallow site soils is presented in this section. In-situ constant head permeameter tests were attempted at various locations throughout the Site. However, the presence of frost prohibited the testing. Therefore, based on grain size analyses, the upper vadose zone is assessed to have a field saturated hydraulic conductivity on the order of 10⁻⁴ cm/sec. The saturated hydraulic conductivity is indicative of silty sand. Although LIDs can be applied to any soil type, additional testing should be considered at the detailed design stage when specific infiltration areas are known.

Based on the Supplementary Guidelines to the Ontario Building Code 2012, this correlates to an infiltration rate on the order of 50mm/hr. It is noted, however, that slight variations in the soil stratigraphy may cause variations in the permeability of the soil in both vertical and horizontal orientations. Based on the Low Impact Development Stormwater Management Planning and Design Guide, the infiltration rate used to design the infiltration facility must incorporate a safety correction factor that compensates for potential reductions in soil permeability due to compaction or smearing during construction, gradual accumulation of fine sediments over the lifespan of the infiltration facility and uncertainty in measured values when less permeable horizons exist within 1.5m below the bottom of the infiltration facility (whatever that may be).

5. Hydrogeology

The hydrogeology of the area is characterized by relatively flat lying to gently rolling topography of soils that generally consists of clay underlain with intermittent layers of sand and gravel at depth. Seasonal water is expected to flow within the sand and gravel layers. Limited vertical migration is expected within the clay (and till). Only a minor portion of the existing infiltration is expected to recharge the deeper aquifers that are confined below the clay and till. Information regarding groundwater characteristics of the immediate area was obtained from an inventory of well records.

A total of thirty-six (36) well records were found to be available within 0.25km of the Site. The information includes four (4) abandonment records which provided limited information. The well records indicate the presence of clayey soil in the area with layers of sand and gravel at depth. Bedrock was not encountered in any of the local well records. The well records considered are provided and shown in Appendix B. Physical and hydraulic data are presented on the MECP well records.

5.1 Existing Local Water Supplies

Nearby surrounding lands to the east and south are generally developed with individual residential lots that are municipally serviced for both potable water and sanitary sewers. In comparison, areas to the north and west support a mixture of rural residential and agricultural properties. These areas appear to be privately serviced with individual water wells and septic systems. GHD understands that the proposed development will be municipally serviced. The well records considered are provided and shown in Appendix B. Physical and hydraulic data are presented on some of the MECP well records. The well records indicate the presence of clay, sand, and gravel in the area. The information indicates the presence of two (2) principal aquifer systems:



- An unconfined shallow water table system within the shallow clay tapped by the dug/bored wells; and
- 2. Deeper overburden (sand/gravel) within the clay/till tapped by deeper overburden wells.

To supplement the MECP well records reviewed, GHD staff conducted a well survey of the area to investigate where private wells may still be in use (Appendix B). Six (6) locations were surveyed and confirmed that the area to the south and east of the Site is municipally serviced for potable water. This was confirmed by the presence of fire hydrants along Oakside Drive, Apple Tree Crescent and Maple Brook Drive. Existing water wells were generally observed on land to the west and north.

GHD notes that the monitoring wells installed on the Site as part of this investigation and the existing water well will need to be properly abandoned by a licensed well drilling contractor in accordance with Regulation 903 of the Ontario Water Resources Act prior to development construction activities.

5.2 **Source Water Protection Considerations**

Where proposed developments are being planned, it is important to determine the presence of Significant Groundwater Recharge Areas (SGRAs), and Highly Vulnerable Aquifers (HVAs) in the area. These areas are protected under the Clean Water Act (2006). In general, SGRAs are defined as areas where water seeps into an aquifer from rain and melting snow, supplying water to the underlying aguifer. An HVA aguifer occurs where the subsurface material offers limited protection from contamination resulting from surface activities.

GHD considered the potential for SGRAs and HVAs by reviewing the "Source Protection Information Atlas" that is currently available through the MECP website. The published information is dated February 4, 2021 (see Figure 10). In general, a small area near the southwest corner of the Site is within an SGRA (score of 2 to 4). The score increases to 6 further south in this immediate area. The Site is also situated within an HVA. The subsurface investigation by GHD has indicated that the existing clayey silt and glacial till exhibits low hydraulic conductivity indicating that it has a relative lower contribution to underlying aquifer complexes. GHD also notes that the Site is situated within a Wellhead Protection Area (Q1 and Q2) with a defined stress classes as 'moderate'. Again, the low hydraulic conductivity of the native clayey silt and till soils provides protection to the identified Wellhead Protection Area.

Nevertheless, the proposed residential development for the Site should consider the reduction of potential infiltration of contaminants to the shallow water table using best management practices. Clean stormwater from rooftops would not be a concern for infiltration. However, runoff from other sources should be evaluated and may require pre-treatment. For example, runoff from asphalt should consider the use of an oil-grit separator or the reduction of the use of deicing salts.



6. Conclusions and Recommendations

Supporting data upon which our recommendations are based have been presented in the foregoing sections of this report. The following recommendations are governed by the physical properties of the subsurface materials that were encountered at the Site and assume that they are representative of the overall Site conditions. It should be noted that these conclusions and recommendations are intended for use by the designers only. Contractors bidding on or undertaking any work at the Site should examine the factual results of the investigation, satisfy themselves as to the adequacy of the information for construction, and make their own interpretation of this factual data as it affects their proposed construction techniques, equipment capabilities, costs, sequencing, and the like.

Comments, techniques, or recommendations pertaining to construction should not be construed as instructions to the contractor. Based on the results of the geotechnical investigation, it is our professional opinion that the Site is suitable for the proposed residential development and there is low potential for groundwater impact as a result of developing the Site. It is recommended that good construction and mitigation techniques must be used to minimize the potential for impact. Detailed conclusions and recommendations are presented in the following sections regarding the water balance and potential impacts to groundwater and surface water resources.

6.1 Hydrogeology

6.1.1 Water Balance Evaluation

An evaluation of the water balance was completed to compute the potential impacts that may occur in the recharge/discharge characteristics related to the proposed development. This evaluation is based upon a preliminary conceptual plan. The objective of the water balance is to illustrate that post-development infiltration within the developable area can meet or be close to pre-development values. The computations have used detailed parameters such as precipitation (Udora weather station), regional evapotranspiration, infiltration and runoff. Weather data from the Udora station was selected as it was the closest weather station to the Site (~16.3km away). The detailed calculations can be reviewed in Appendix E. The evaluation considered only the portion of the planned development that corresponds to the Site (see Concept Plan, Figure 4) based on information provided. The following is a summary of the expected pre-development water balance values for the proposed residential development based on the current information.

Pre development Water Balance

The pre-development water balance incorporated the existing soils, slope and ground cover areas. The infiltration factor for the area was calculated from the table of values presented in the "Land Development Guidelines" (MOEE, 1995). It is based on three sub-factors which are:

- Topography sub-factor;
- Soil sub-factor; and
- Cover sub-factor.



The slope of the Site was considered between "rolling" (slope of 2.8 to 3.8m per km) to "flat" (average slope not exceeding 0.6m per km). The soils were conservatively considered 'medium combinations of clay and loam' as per the water balance calculations. The land cover factor considered the forested (wooded) area (estimated to be 2,060m²). Table 6.1 summarizes the expected pre-development water balance values for the Site.

Table 6.1 Pre Development Summary

Total Precipitation (Udora):

Regional Evapotranspiration:

Recharge Available:

Area of Recharge Available (Site):

Total Water Surplus:

Total Estimated Infiltration:

Total Estimated Runoff:

- 886.2 mm/year

- 571.8 mm/year

- 314.4 mm/year

- 131,000 m²

- 41,484 m³/year

- 19,477 m³/year

- 22,007 m³/year

Based upon these values, the Site infiltrates on the order of 19,477m³ per year (~150 mm/year).

Post Development Water Balance (No Enhancements)

The computation of the water budget was repeated for the proposed development assuming no mitigation techniques, that is, runoff from impervious surfaces is unrecoverable and not infiltrated into the ground. The anticipated impact of the development is related to increased runoff from imperious surfaces such as building rooftops and asphalt surfaces. These are assumed to be impervious surfaces with zero infiltration capacity in this model. A summary of the computations is provided in Table 6.2.

Table 6.2 Post Development Summary (No Enhancements)

Area of Site: - 131,000 m² Impervious Surfaces: - 103,107 m² - 27,893 m² Area Available for Infiltration: **Total Water Surplus:** - 81,867 m³/year Total Estimated Infiltration: - 4,723 m³/year Infiltration % Difference (pre- vs. post-): - (-76%) (decrease) Total Estimated Runoff: - 77,144 m³/year Runoff % Difference (pre- vs. post-): - 251% (increase)

The impermeable surface area of proposed building areas (roof tops), driveways, laneways, and paved access roads area was estimated based on the concept drawing presented in Figure 4 provided by the Client. Under this scenario, the total infiltration volume decreased by 76% and runoff volume increased by 251%. Within the areas evaluated, the infiltration has reduced and the runoff increased versus the pre-development values. Groundwater base flow would be expected to decrease over time in this scenario. However, recharge via infiltration through the underlying till to the lower aguifer from the Site is expected to be minor.

Based upon this scenario, mitigative strategies are required to minimize infiltration losses and reduce storm water runoff. The following section discusses the water balance after considering enhanced infiltration options.



Post Development Water Balance (Enhanced Infiltration)

The post-construction water budget computations were repeated considering enhanced infiltration options which are also known as Low Impact Development (LID) technologies. These technologies include and are not restricted to rainwater harvesting, downspout disconnection, infiltration trenches, vegetated filter strips, bioretention, permeable pavement, enhanced grass swales, dry swales and perforated pipe systems in order to balance the water budget and maintain any features including nearby creeks. The shallow subsurface soils are silty sand/sandy silt underlain by glacial till (also described as sandy silt with clay material) and/or clayey silt. It is noted that LIDs can work in any soil type. The primary enhancement for this Site is to promote infiltration and to move water from impervious surfaces to areas where infiltration can occur.

The post-development water balance was modelled to include the disconnection of downspouts from storm sewers and directing water from the building roof tops to sodded areas or undeveloped grass areas which can be enhanced with increased topsoil depths. GHD notes that this was done soley for demonstration purposes and specific LID design criteria will be the responsibility of the stormwater engineer for the development. A summary of the post-construction water budget with enhancements for infiltration is presented in Table 6.3.

Table 6.3 Post Development Summary (With Enhanced Infiltration)

Area of Site:

Total Water Surplus:

Total Estimated Infiltration:

Infiltration % Difference (pre- vs. post-):

Total Estimated Runoff:

Runoff % Difference (pre- vs. post-):

- 131,000 m²

- 81,867 m³/year

- 19,477 m³/year

- (0%) (nil)

- 62,390 m³/year

- 184% (increase)

Under this scenario, the total infiltration volume is maintained and runoff volume increased by 184% compared to pre development conditions. Within the areas evaluated, the infiltration and runoff amounts have improved compared to post development (no mitigation) numbers. However, a runoff volume increase of 184% is still present. Any increase in runoff (and decrease in infiltration) compared with the pre-development conditions will need to be managed as per the storm water management plan.

It is expected that recharge via infiltration through the till and clayey silt to the lower aquifers is a small component and impacts to the groundwater aquifer are expected to be insignificant. It is our professional opinion that there would be minimal impact to the local groundwater regime and minimal impact to the down-gradient surface water regime from a quantity perspective.

6.1.2 Impact on Groundwater Baseflow

The importance of the groundwater baseflow is that it provides discharge to water bodies, wells and may have some hydraulic functionality with the on-site features. Water balance calculations suggest that the infiltration to the subsurface can be kept near pre-development values if appropriate LID technologies are used. It is GHD's professional opinion that there is not expected to be a significant impact to the shallow groundwater baseflow that may be supplying baseflow to the down-gradient un-named tributary to Uxbridge Brook.



6.1.3 Impact on Surface Water Bodies

The impacts to surface water bodies are related to the reduction of the groundwater baseflow and water quality concerns related to human activities such as salting of paved areas, minor fuel and oil leaks, fertilizer application, etc. It is expected that there will be minor impacts to groundwater and neighbouring surface water bodies. Runoff from the development will be collected by an internal storm sewer system and treated using some stormwater strategy. Further details will be provided within the stormwater management report.

6.1.4 Mitigation Measures

Several mitigative techniques have been recommended in order to address concerns relating to the potential for impact to the base flow. The impact and mitigation measures can be arranged into two (2) distinct categories: construction phase and operational phase. Prior to construction, storm water management techniques should be incorporated to control additional surface water runoff and permit enhanced infiltration into the surrounding ground. Storm water management techniques will minimize the potential for groundwater impact and also minimize the amount of silt or other fine-grained soil particles becoming mobile and entering into down-gradient areas. The installation of strategically placed silt fences will filter any excess storm water runoff prior to entering the infiltration areas.

During the operational phase of the development, it is expected that storm water excess will be controlled as indicated in the Stormwater Report. It is recommended that all roof leader drains of the future residential buildings be allowed to drain onto the ground surface for infiltration or other means recommended by the storm water report. Swales may be required in some areas to divert the runoff water where required. Other LIDs will be required to reduce storm water runoff and will be evaluated by the detailed design.

6.1.5 Servicing

Private services for water and septic disposal are not considered as the Site will be connected to municipal services.

6.1.6 Dewatering for Construction

Based on groundwater-related observations and the depth of excavations expected for this development, it is generally anticipated that groundwater seepage will not be encountered depending on the time of year at which the construction is conducted. However, if encountered, the seepage will be minor and should be handled with pumping from collection sumps to an acceptable outlet.

However, should any excavations require more intensive dewatering or groundwater control, the use of filtered sumps, or other suitable method of dewatering and/or sheet piling is recommended. For dewatering purposes, hydraulic conductivities on the order of about 10⁻⁴ to 10⁻⁶ cm/sec may be expected for the subgrade soils encountered in our boreholes. It should be noted that hydraulic conductivities can vary over a vertical and horizontal extent, and may be outside the stated range if pockets or seams of soils with different grain size (e.g. sand/gravel seams) are encountered.



If short-term pumping of groundwater at volumes greater than 50,000 L/day and less than 400,000 L/day is required during the construction stage, the Environmental Activity Sector Registry (EASR) must be completed. The EASR streamlines the process and water pumping may begin once the EASR registration is completed, the fee paid and supporting document prepared. If water taking in excess of 400,000 litres/day is required, a Permit to Take Water (PTTW) must be obtained in advance. PTTW applications may take up to 90 working days for the MECP to review and approve. The actual rate of groundwater taking performed during construction will be a function of the final design, time of year, and the contractor's schedule, equipment, and techniques.

6.2 **Geotechnical**

The soils encountered generally consisted of topsoil underlain by a thin layer of silty sand and then native glacial till and/or clayey silt. Groundwater seepage was observed in all four (4) boreholes at depths ranging from 0.9m (BH-4) to 4.6m (BH-3) during the drilling operations. Monitoring wells were installed in all four (4) boreholes in order to facilitate monitoring of groundwater levels. Groundwater level measurements obtained from the existing monitoring wells on March 10, 2021, ranged from 0.9 to dry.

6.2.1 **Site Preparation and Excavation**

Any and all topsoil, vegetation, fill, disturbed earth, organic and organic-bearing material is to be stripped and removed from the proposed pavement, sidewalk and building envelope areas (including floor slab areas) prior to commencing earthwork construction. Overly loose, organic, or otherwise deleterious materials will require removal and replacement with an approved backfill material. The subexcavated surface must be proof rolled and/or approved by a member of GHD prior to placement of fill or foundations. Excavations should be carried out to conform to the manner specified in Ontario Regulation 213/91 and the Occupational Health and Safety Act and Regulations for Construction Projects (OHSA). All excavations above the water table not exceeding 1.2m in depth may be constructed with vertical, unsupported slopes. The soils encountered during this investigation are generally classed by OHSA as Type 3. As such, unsupported / unshored walls of excavations in these soils must be sloped to the bottom of the excavation, with a slope having a gradient of 1 horizontal to 1 vertical (1H:1V) or flatter, or be retained using a suitably designed shoring system. The soils located beneath the groundwater table should be considered Type 4 soils, requiring unsupported / unshored walls of excavations to be sloped at 3H:1V or flatter to the base of the excavation.

It is expected that some of the excavation spoils may be suitable for reuse as trench and/or pavement subgrade backfill provided they are free of organics and at a moisture content that will permit adequate compaction (may require prior processing such as aeration to lower the moisture content). A final review and approval to reuse any soils should be made at the time of construction.



6.2.2 Service Installation

The materials encountered during this investigation at the anticipated service invert elevations (3m below existing ground surface) typically consists of glacial till (BH-1 and BH-3), silty sand (BH-2) and clayey silt (BH-4) material. As such, normal compacted bedding material, placed in the Class "B" or Class "C" arrangement, is recommended for all underground services. The recommended bedding material is Granular "A" or 19 mm crusher run (angular) stone, as per Ontario Provincial Standard Specifications (OPSS). The minimum recommended bedding thickness for the underground services is 150mm. All bedding materials should be compacted to 98% of their Standard Proctor Maximum Dry Density (SPMDD).

It is recommended that cover backfilling of the underground services be accomplished using Granular "A", sand, or other suitable material as allowed by the Municipality's standards, to a minimum of 300mm above the pipe. Compaction of this material should attain 100% SPMDD. It is expected that some of the excavated soils may be suitable for reuse as trench backfill, conditional upon suitable moisture content (within 2% of optimum), final review and approval by an experienced geotechnical engineer at the time of construction, and regular monitoring and inspection of such reuse throughout construction. Compaction of any native soil in service trenches is recommended to be a minimum of 98% of its SPMDD. The soils observed may require processing (such as aeration) to lower the moisture content to appropriate levels prior to being considered as backfill material.

It is recommended that trench plugs be installed at appropriate locations along the trench alignment to minimize and control any flow of groundwater along the trench bedding and backfill materials. It should be noted that concrete trench plugs for shallower watermain trench are susceptible to differential movement and heaving in relation to surrounding soils, particularly where plugs are located within the frost penetration depth (up to 1.5 to 1.6m). Clay plugs should be used in such instances, utilizing frost tapers to minimize movement within the frost zones.

6.2.3 Foundation Design

Relevant information for final design purposes including proposed final grades, finished floor elevations, and proposed underside of foundations were not available to GHD at the time of writing this report. As such, the recommendations contained in this Foundation Design section must be reviewed by GHD's geotechnical engineers once such development design parameters become available. Structural loading for the proposed residential dwellings may be supported on strip and spread footings. The footings should be placed on the undisturbed, compact to dense (or very stiff to hard) native soils or on engineered fill place directly on the undisturbed, compact to dense (or very stiff to hard) native soils. Table 6.4 summarizes the depths to suitably competent native soil encountered within each borehole.

Table 6.4 Depth to Competent Bearing Native Soil

Borehole	Depth (m) to Competent Native Soil	Borehole	Depth (m) to Competent Native Soil
BH-1	3.0	BH-3	1.6
BH-2	1.5	BH-4	2.4



GHD notes that if pockets of loose/soft soils are encountered at the foundation subgrade level during construction, they must be subexcavated and replaced with engineered fill. For preliminary design purposes, it is recommended that footings constructed on compact to dense native soils or engineered fill be proportioned and designed using the following bearing capacities presented in Table 6.5.

Table 6.5 Preliminary Bearing Pressures for Foundation Design

		Bearing	Pressure			
	Compact to		Engineering Fill			
Parameter	Dense (Very Stiff to Hard) Undisturbed Native Soils	Rock-based Fill ⁽²⁾	Granular Fill ⁽³⁾	Earth Borrow Fill ⁽³⁾		
Factored Bearing Capacity at ULS ⁽¹⁾	130 kPa	210 kPa	170 kPa	130 kPa		
Bearing Capacity at SLS	90 kPa	150 kPa	120 kPa	90 kPa		

Notes: (1) Resistance factor Φ =0.5 applied to the ULS bearing pressure for design purposes.

Any engineered fill upon which foundations are placed must be a minimum thickness corresponding to the notes that accompany the above table. Rock-based fill must be completely encapsulated with suitable filter fabric to minimize any migration of fine-grained particles from surrounding soils into the voids within the rock fill.

The following is recommended for the construction of any engineered fill for the foundations:

- 1. Remove any and all existing vegetation, topsoil, fill, organics, and organic-bearing soils to the competent, undisturbed native soil from within the area of the proposed engineered fill.
- 2. The area of the engineered fill should extend horizontally 1m beyond the outside edge of the building foundations and then extend downward at a 1:1 slope to the competent native soil.
- 3. The base of the engineered fill area must be approved by a member of GHD prior to placement of any fill, to ensure that all unsuitable materials have been removed, that the materials encountered are similar to those observed, and that the subgrade is suitable for the engineered fill.
- 4. All engineered fill material is to be approved by GHD at the time of construction. Place approved engineered fill, in maximum 300 mm lifts, compacted to 100% of its SPMDD. Any fill material placed under sufficiently wet conditions should consist of an approved, rock-based fill, with the inclusion of appropriate geotextile fabric around the rock-based fill should the rock fill contain enough voids to warrant.
- 5. Full time testing and inspection of the engineered fill will be required, to ensure compliance with material and compaction specifications.

⁽²⁾ At least 1m of Rock-based fill. Quality of material is to be approved prior to use as engineered fill.

⁽³⁾ At least 0.3m of Granular or Earth Borrow fill. Quality of material is to be approved prior to use as engineered fill.



All exterior foundations and/or foundations in unheated areas, should be founded at least 1.2 m below the final adjacent grade for frost protection. Foundations and walls exposed to frost action should be backfilled with non-frost susceptible granular material, and positive drainage away from the structure should be ensured.

Under no circumstances should the foundations be placed above organic materials, loose, frozen subgrade, construction debris, or within ponded water. Prior to forming, all foundation excavations must be inspected and approved by a member of GHD's geotechnical group. This will ensure that the foundation bearing material has been prepared properly at the foundation subgrade level and that the soils exposed are similar to those encountered during this investigation.

For design purposes this site is conservatively classed as Site Class D for Seismic Site Response, in accordance with the Ontario Building Code.

For drainage purposes, it is recommended that perimeter drains be installed about each structure. The subdrains would serve to drain seepage water that infiltrates the backfill, intersect the groundwater, and help relieve hydrostatic pressures due to high groundwater levels. The drains should consist of a perforated pipe, at least 150 mm in diameter, surrounded by clear, crushed stone and suitable filter protection. The drain should discharge to a positive sump or other permanent frost free outlet.

For foundations constructed in accordance with the foregoing manner, total and differential settlements are estimated to be less than 25mm.

6.2.4 Slab on Grade

GHD understands that the proposed buildings may have basements. The basement floor of the proposed buildings may be constructed as normal slabs-on-grade, on clear stone fill over native, inorganic subsoils, prepared in accordance with Section 6.2.1 of this report. The basements should be constructed with damp-proofing and sub-floor drainage systems. The subfloor drainage must be connected to a frost free outlet to permit water flow away from the buildings. The floor slabs should be formed over a base course consisting of at least 150mm of 19mm angular clear stone material, compacted to a minimum of 100% of its SPMDD. All grade increases or infilling below the clear stone should be constructed in accordance with the engineered fill steps. All clear stone must be surrounded on bottom and sides by appropriate filter fabric to control the migration of fine-grained particles from surrounding soils. All fill placed as engineered fill must be inspected, approved and compaction verified by GHD.

GHD also recommends that under floor drains consisting of 100mm diameter, perforated, filter-wrapped pipe at maximum 3m centres be installed below the clear stone. These pipes should be led into a header placed in the middle of the drainage system. The header should consist of a 150mm diameter, filter-wrapped, perforated pipe. The drainage system should appropriately drain into a positive sump or other permanent frost free outlet.

6.2.5 Basement Retaining Walls

It is recommended that free draining backfill to walls (basement) be provided. Such walls located above the groundwater table may be designed for lateral earth pressures using the following equation:



p = k (w h + q), where:

- the lateral earth pressure in kPa acting on the subsurface wall at depth h;
- k_a = the coefficient of active earth pressure;
 (= 0.3 for walls restrained from the bottom only);
 (= 0.5 for walls restrained at the top and bottom*);
- k_p = the coefficient of passive earth pressure, (= 3.0);
- w = the granular or native soil bulk density in kN/m³;
 (= 21.0 kN/m³ for well compacted, OPSS-approved Granular "B");
 (= 20.0 kN/m³ for native soils);
- h = the depth (in metres) below the exterior grade at which the earth pressure is being calculated; and
- q = the equivalent value of any surcharge (in kN/m³) acting adjacent to the walls.
 - (*) This value is recommended for rigid walls retaining compacted backfill.

The recommended value for the coefficient for sliding friction between the soil and the concrete is 0.4. In addition to the above, hydrostatic forces must be taken into account in the design where the walls extend below the groundwater table. Also, any additional surcharge loading that will influence the wall must be taken into account in its design.

6.2.6 Stormwater Management Pond Design

Recommendations provided in this report are for preliminary design purposes and do not include an analysis of the proposed SWM pond berm's stability. GHD can perform such stability analyses once overall grading plans for the Site are finalized. GHD understands that a SWM pond is proposed for this development and is to be located in the area of BH-4, as shown on Figure 4. The native soils encountered in borehole BH-4 consisted of layers of silty sand and then clayey silt. The hydraulic conductivity of the clayey silt is expected to be on the order of 10⁻⁵ to 10⁻⁶ cm/sec based on hydraulic conductivity testing and gradation results of representative samples. It is noted, however, that slight variations in the soil stratigraphy may cause variations in the permeability of the soil in both vertical and horizontal orientations.

Based on the soils observed, and the anticipated base elevations, it appears that construction of the SWM pond in this area is feasible. In general, excavation of the soils for the SWM pond are expected to be straightforward, provided that appropriate measures are taken during construction to minimize any overland or near-surficial flow of water into the area. Groundwater seepage and surficial water inflow into the open SWM pond excavation is expected. However, this is generally expected to be controlled by pumping from within the excavation, along with further measures if required, including up-gradient cutoff trenching with appropriate drainage out-letting.

It is recommended that the SWM pond subgrade surfaces be proof rolled, and a representative of GHD approve the subgrade prior to construction of the berms. Construction of the berms may utilize excess site till or clayey silt soils having a hydraulic conductivity of 10⁻⁵ cm/sec or lower. Such operations should place with soil in lifts no thicker than 150mm prior to compaction, and compacted to at least 95% SPMDD.



It is our professional opinion that the base of the SWM pond be protected with an appropriate liner consisting of the native, clayey silt soils in a re-compacted state. An inspection of the excavated and exposed SWM pond surfaces should be performed at the time of construction, to assess where areas of increased hydraulic conductivity are present within the exposed soils, so that such areas may be lined with a more suitable (i.e. less hydraulically conductive) material. It is expected that this can be accomplished using the clayey silt soil (as encountered in boreholes BH-3 and BH-4), coordinated with geotechnical inspection and final approval of materials. It is recommended that construction of such approved material be at least 600mm thick and must be placed under full time geotechnical inspections.

For the purpose of the proposed SWM pond, the soils observed should be stable from slip circle failure if sloped at 3 horizontal to 1 vertical (3H:1V) or flatter in the long term both above and below the water table. Between the stable water level and the expected high water level, it is recommended that the slopes be lessened to 4H:1V (or flatter) to guard against erosion by wavelet action. The till material will require vegetative root mass (or otherwise suitable erosion protection) to minimize erosional forces on exposed slopes.

Slopes and berms of the SWM pond should be constructed so as to reduce or eliminate the effects of surficial erosion. Features to do so may include slope vegetation, installation of erosion or gabion mats, rip rap, and/or other acceptable stabilizing features. It is recommended that a regular maintenance program for the SWM pond include monitoring of it for any potential slope erosion, degradation, or otherwise undesirable structural conditions. Should any such conditions become evident, immediate mitigative actions must be performed.

6.2.7 Pavement Design

Based on the results of this investigation, GHD recommends the following procedures be implemented to prepare the proposed asphalt paved areas for construction.

- 1. Remove all asphalt, topsoil, fill, organics, organic-bearing materials and other deleterious materials from the planned pavement areas full depth.
- 2. Inspect and proof roll the subgrade for the purpose of detecting possible zones of overly wet or soft subgrade. Any deleterious areas thus delineated should be replaced with approved granular material compacted to a minimum of 98 % of its SPMDD.
- 3. If further stabilization of the pavement subgrade is deemed necessary, either subexcavate to suitable soils and backfill with approved granular material compacted to 98% SPMDD, or place woven geotextile such as Terrafix 200W or Mirafi HP270 on the exposed pavement subgrade surface, after its approval and prior to placement of any subsequent fill.
- 4. Contour the subgrade surface to prevent ponding of water during the construction and to promote rapid drainage of the sub-base and base course materials.
- 5. To maximize drainage potential, 150 mm diameter perforated pipe subdrains should be installed below any curb lines. The pipe should be encased in filter fabric and surrounded by clear stone aggregate. It is recommended that the subdrains discharge to a suitable, frost-free outlet.
- 6. Construct transitions between varying depths of granular base materials at a rate of 1:25 minimum.

The subgrade materials in the proposed pavement areas will generally consist of silty sand, depending on the proposed grading. The frost susceptibility of this soil is assessed as being generally moderate to high. The following minimum flexible pavement structure is recommended for the paved access roads and laneways.



Table 6.6 Pavement Structure

Profile	Material	Thickness (m	m)	In Conformance with OPSS	
Profile	Material	Light Duty	Heavy Duty	Form	
Asphalt Surface	H.L.3	40	40	1150	
Asphalt Base	H.L.8	50	50	1130	
Granular Base	Granular "A"	150	150	1010	
Granular Subbase	Granular "B"	300	450	1010	

The following steps are recommended for optimum construction of the paved areas.

- 1. The Granular "A" and "B" courses should be compacted to a minimum 100 percent of their respective SPMDD's.
- 2. All asphaltic concrete courses should be placed, spread and compacted conforming to OPSS Form 310 or equivalent. All asphaltic concrete should be compacted to a minimum 92.0 percent of their respective laboratory Maximum Relative Densities (MRD's).
- 3. Adequate drainage should be provided to ensure satisfactory pavement performance.

It is recommended that all fill material be placed in uniform lifts not exceeding 200mm in thickness before compaction. It is suggested that all granular material used as fill should have an in-situ moisture content within 2 percent of their optimum moisture content. All granular materials should be compacted to 100 percent SPMDD. Granular materials should consist of Granular "A" and "B" conforming to the requirements of OPSS Form 1010 or equivalent. The performance of the pavement structure is highly dependent upon the subgrade support conditions. Stringent construction control procedures should be maintained to ensure that uniform subgrade moisture and density conditions are achieved as much as practically possible.

GHD notes that the recommended pavement structures are for the end use of the project. The most severe loading conditions on pavement areas and the subgrade may occur during construction. As such, during construction of the project the recommended granular depths may not be sufficient to support loadings encountered. Consequently, special provisions such as restricted lanes, halfloads during paving, etc. may be required, especially if construction is carried out during unfavorable weather.

6.2.8 **General Recommendations**

Test Pit During Tendering

It is strongly recommended that test pits be excavated at representative locations of this Site during the tendering phase, with mandatory attendance of interested contractors. This will allow them to make their own assessments of the groundwater and soil conditions at the Site and how these will affect their proposed construction methods, techniques and schedules.



Subsoil Sensitivity

The native subsoils are susceptible to strength loss or deformation if saturated or disturbed by construction traffic. Therefore, where the subgrade consists of approved soil, care must be taken to protect the exposed subgrade from excess moisture and from construction traffic.

Winter Construction

The subsoils encountered across the site are frost-susceptible and freezing conditions could cause problems for the following reasons.

- 1. During winter construction, exposed surfaces intended to support foundations must be protected against freezing by means of loose straw and tarpaulins, heating, etc.
- 2. Care must be exercised so that any sidewalks and/or asphalt pavements do not interfere with the opening of doors during the winter when the soils are subject to frost heave. This problem may be minimized by any one of several means, such as keeping the doors well above outside grade, installing structural slabs at the doors, and by using well-graded backfill and positive drainage, etc.
- 3. Because of the frost heave potential of the soils during winter, it is recommended that the trenches for exterior underground services be excavated with shallow transition slopes in order to minimize the abrupt change in density between the granular backfill, which is relatively non-frost susceptible, and the more frost-susceptible native soils.

Design Review and Inspection

Due to the preliminary nature of the design details at the time of this report, we recommend that our firm be retained to review the foundation design and grading proposals when they are available. Geotechnical inspection and compaction testing must be carried out to ensure compliance with our recommendations.

6.3 Summary Conclusions

In summary, the proposed development area is generally comprised of topsoil underlain by a thin layer of silty sand and then native glacial till and/or clayey silt. Groundwater seepage was observed in all four (4) boreholes at depths ranging from 0.9m (BH-4) to 4.6m (BH-3) during the drilling operations. There will not be significant constraints for the proposed residential development from the seasonal variations of groundwater as any seepage water should be handled with appropriate engineering techniques. It is expected that groundwater will generally be below the depth of the future development, although seepage may be encountered in deeper excavations or foundations. If short-term pumping of groundwater at volumes greater than 50,000 L/day and less than 400,000L/day is required during the construction stage, the EASR must be completed.

There are minor impacts expected to groundwater and surface water as a result of the future development provided that appropriate planning (i.e. incorporation of LIDs as supported by the water balance calculations), mitigation measures and proper construction techniques are considered. From a geotechnical perspective, the Site is suitable for construction of the proposed development including the planned two to three-storey residential buildings, associated servicing and paved access road. Detailed recommendations are provided in previous sections of this report.



In summary, the proposed residential development is suitable from both a hydrogeologic and geotechnical perspective.

The following Statement of Limitations should be read carefully and is an integral part of this report. Should any questions arise regarding any aspect of our report, please contact our office.

Sincerely,

Sincerely,

Marzold 21

David L. Workman S

PRACTISING MEMBER 1509

ON TAR10

N. C. McILVEEN

Nyle McIlveen, P.Eng.

/dw/nm



7. References

Chapman and Putnam, 1966. The Physiography of Southern Ontario, 2nd Edition. University of Toronto Press.

Chapman and Putnam, 1984. The Physiography of Southern Ontario, 3rd Edition. Ministry of Natural Resources.

City of Toronto, November 2006. Wet Weather Flow Management Guidelines.

Credit Valley Conservation and Toronto and Region Conservation Authority. Low Impact Development Stormwater Management Planning and Design Guide. Version 1.0. 2010.

Freeze, R. Allan and Cherry, John A. 1979. Groundwater.

Ministry of the Environment and Energy, April, 1995. MOEE Hydrogeological Technical Information Requirements for Land Development Applications.

Ministry of the Environment, Conservation and Parks, February 4, 2021. Source Protection Information Atlas, available online at www.ontario.ca.



8. Statement of Limitations

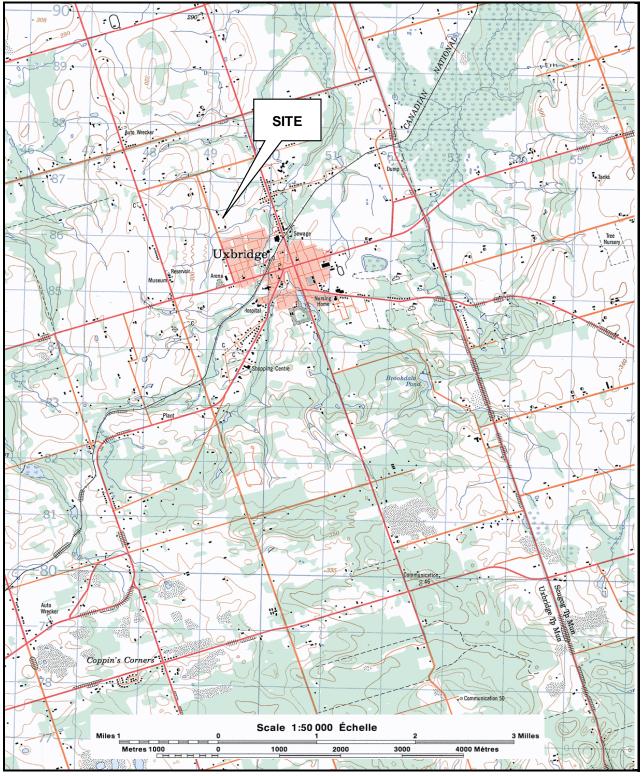
This report is intended solely for Mason Homes Limited in assessing the geotechnical and hydrogeologic aspects of land located along the east side of Centre Road approximately 0.2km north of Oakside Drive in Uxbridge, Ontario and is prohibited for use by others without GHD's prior written consent. This report is considered GHD's professional work product and shall remain the sole property of GHD. Any unauthorized reuse, redistribution of or reliance on the report shall be at the Client and recipient's sole risk, without liability to GHD. Client shall defend, indemnify and hold GHD harmless from any liability arising from or related to Client's unauthorized distribution of the report. No portion of this report may be used as a separate entity; it is to be read in its entirety and shall include all supporting drawings and appendices.

The recommendations made in this report are in accordance with our present understanding of the project, the current site use, ground surface elevations and conditions, and are based on the work scope approved by the Client and described in the report. The services were performed in a manner consistent with that level of care and skill ordinarily exercised by members of geotechnical and hydrogeological engineering professions currently practicing under similar conditions in the same locality. No other representations, and no warranties or representations of any kind, either expressed or implied, are made. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.

All details of design and construction are rarely known at the time of completion of a geotechnical or hydrogeological study. The recommendations and comments made in the study report are based on our subsurface investigation and resulting understanding of the project, as defined at the time of the study. We should be retained to review our recommendations when the drawings and specifications are complete. Without this review, GHD will not be liable for any misunderstanding of our recommendations or their application and adaptation into the final design.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments included in this report are based on the results obtained at the test hole locations only. The subsurface conditions confirmed at the test hole locations may vary at other locations. The subsurface conditions can also be significantly modified by the construction activities on site (ex. excavation, dewatering and drainage, blasting, pile driving, etc.). These conditions can also be modified by exposure of soils or bedrock to humidity, dry periods or frost. Soil and groundwater conditions between and beyond the test locations may differ both horizontally and vertically from those encountered at the test locations and conditions may become apparent during construction which could not be detected or anticipated at the time of our assessment. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations. If changed conditions are identified during construction, no matter how minor, the recommendations in this report shall be considered invalid until sufficient review and written assessment of said conditions by GHD is completed.

Enclosures



Base map compiled from Energy, Mines and Resources Canada Map 31 D/03 published 1994. Information current as of 1989.

Scale: 1:50000 Coordinate System NAD 1983 UTM Zone 17

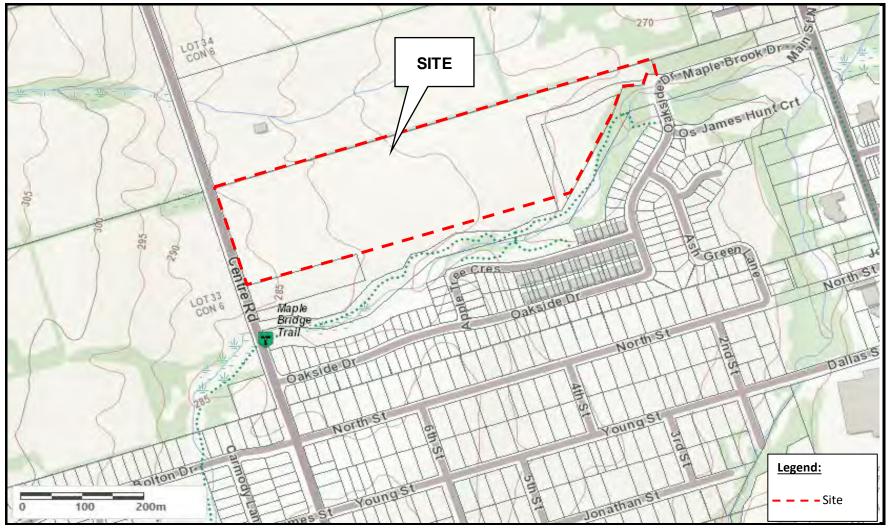




Geotechnical and Hydrogeologic Investigation Mason Homes Limited Proposed Residential Development Centre Road Phase 2, Uxbridge

11223795-01 March, 2021

Vicinity Plan



Source: Ministry of Natural Resources and Forestry. © Queen's Printer for Ontario, 2020.

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation

Mason Homes Limited

Proposed Residential Development

Centre Road Phase 2, Uxbridge

Site Plan

FIGURE 2

11223795-01

March, 2021



Source: Ministry of Natural Resources and Forestry. © Queen's Printer for Ontario, 2020.

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation

Mason Homes Limited Proposed Residential Development Centre Road Phase 2, Uxbridge 11223795-01 March, 2021

Plot Plan



Source: Concept Plan provided by Mason Homes

Scale: Not Available





Geotechnical and Hydrogeologic Investigation Mason Homes Limited Proposed Residential Development Centre Road Phase 2, Uxbridge

Concept Plan

11223795-01 March, 2021



Source: Ministry of Natural Resources and Forestry. © Queen's Printer for Ontario, 2020.

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17



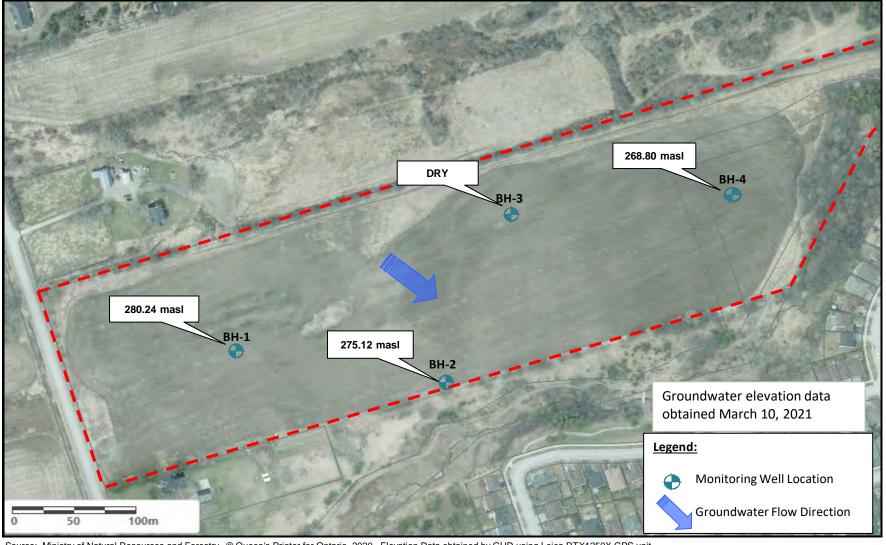


Geotechnical and Hydrogeologic Investigation Mason Homes Limited

Proposed Residential Development Centre Road Phase 2, Uxbridge

Test Hole Plan

11223795-01 March, 2021



Source: Ministry of Natural Resources and Forestry. © Queen's Printer for Ontario, 2020. Elevation Data obtained by GHD using Leica RTX1250X GPS unit.

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation

Mason Homes Limited

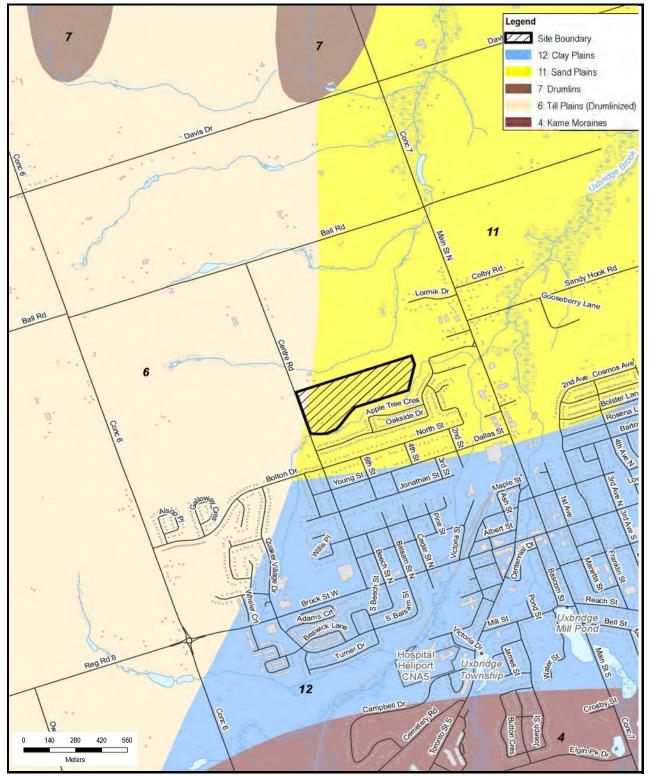
Proposed Residential Development

Centre Road Phase 2, Uxbridge

Groundwater Elevations

March, 2021

11223795-01



Data source: MNRF NRVIS, 2018. From Ontario Ministry of Natural Resources and Forestyry, © Queen's Printer 2020; Ontario Geological Survey

<u>Scale:</u> Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17

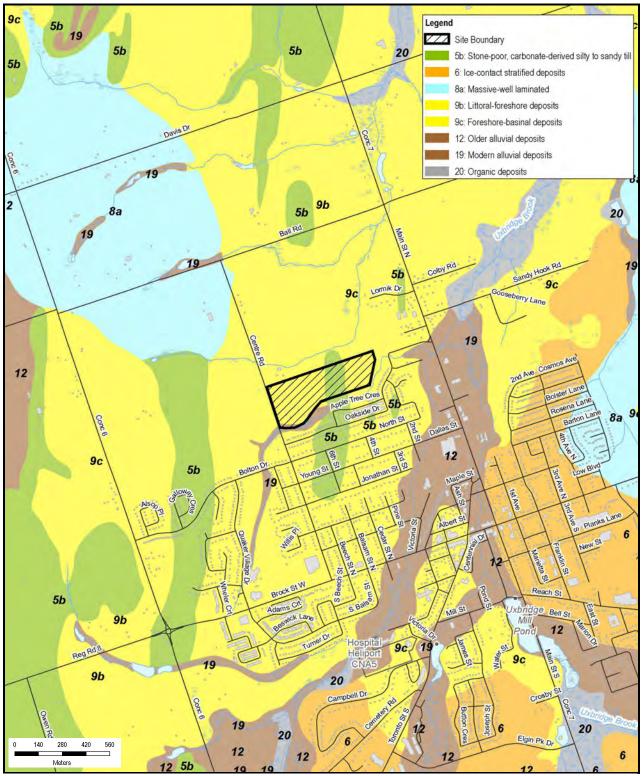




Geotechnical and Hydrogeologic Investigation

Mason Homes Limited Proposed Residential Development Centre Road Phase 2, Uxbridge 11223795-01 March, 2021

Physiography



Data source: MNRF NRVIS, 2018. From Ontario Ministry of Natural Resources and Forestyry, © Queen's Printer 2020; Ontario Geological Survey

Scale:
Refer to Scale Bar
Coordinate System:
NAD 1983 UTM Zone 17



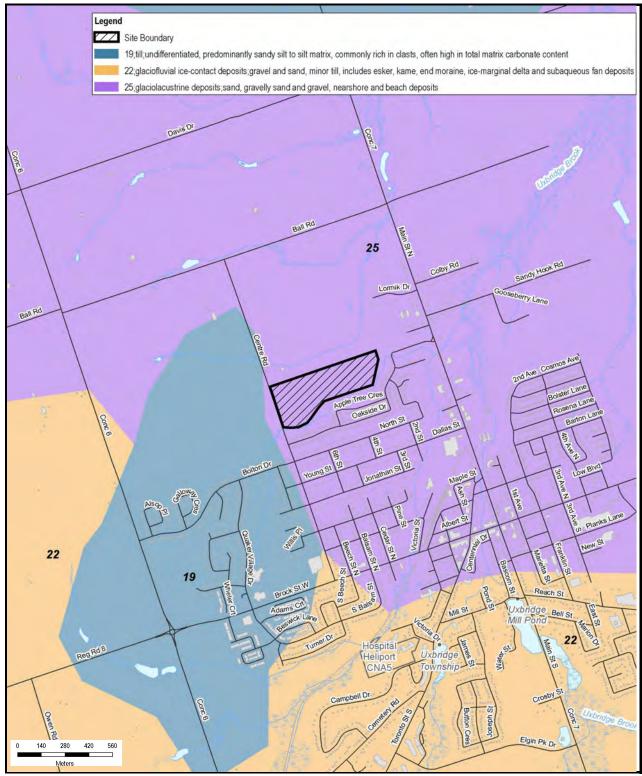


Geotechnical and Hydrogeologic Investigation
Mason Homes Limited
Proposed Residential Development

Proposed Residential Development Centre Road Phase 2, Uxbridge

Surficial Geology FIGURE 8

11223795-01 March, 2021



Data source: MNRF NRVIS, 2018. From Ontario Ministry of Natural Resources and Forestyry, © Queen's Printer 2020; Ontario Geological Survey

<u>Scale:</u> Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation Mason Homes Limited

Proposed Residential Development Centre Road Phase 2, Uxbridge

11223795-01

March, 2021

Quaternary Geology FIGURE 9



Source: Ministry of the Environment, Conservation and Parks. Source Protection Information Atlas, February 4, 2021. © Queen's Printer for Ontario, 2021.

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation

Mason Homes Limited

Proposed Residential Development

Centre Road Phase 2, Uxbridge

Sourcewater Protection Map

FIGURE 10

11223795-01

March, 2021

Appendix A Soil Exploration Data

REFERENCE No.: 11223795-01 ENCLOSURE No.: BOREHOLE No.: BH-1 BOREHOLE REPORT **ELEVATION:** 281.741 m Page: _1_ of _1_ **LEGEND** Mason Homes Limited CLIENT: _ \boxtimes ss - SPLIT SPOON Geotechnical and Hydrogeologic Investigation, Centre Road, Uxbridge, ON PROJECT: AS - AUGER SAMPLE LOGGED BY: W. Moore DATE: 1 March 2021 ST - SHELBY TUBE CS - CORE SAMPLE DRILLING COMPANY: Landshark Drilling METHOD: Solid Stem Auger and Split Spoons - WATER LEVEL NOTES: Elevation data obtained using Leica RTX1250X GPS unit. m Below Existing Grade Blows per 6 in. / 15 cm Penetration Index Shear test (Cu) Stratigraphy Type and Number Moisture Content Recovery Sensitivity (S) **COMMENTS** □ Lab ∨ vv ater content (%) W_p W_i Atterberg limits (%) **DESCRIPTION OF** SOIL AND BEDROCK — 1.10 m — 1.07 m × "N" Value (blows / 0.3 m) RQD 0.0 % % 10 20 30 40 50 60 70 80 90 ft m **GROUND SURFACE** TOPSOIL (178mm) 0.2 5 SILTY SAND - Light Brown SS-1 75 8 13 22 Silty Sand, trace Gravel, 9 Moist, Compact 10 2 10 - 1.0 SS-2 100 11 9 15 6 5 Y WL - 1.5 m 1.5 5 TILL - Brown Silty Sand, 3/10/2021 little Gravel, Moist, Compact 6 SS-3 100 10 16 23 7 2.0 7 2.3 Trace Clay, Slight Seepage Groundwater first 8 7 encoutered at SS-4 100 9 5 13 đх 2.3m 8 9 Grain Size 10 Analysis: SS-4 3.0 17% Gravel 3.0 Dense 48% Sand 10 35% Silt and Clay SS-5 30 10 16 30 11-27% Between 14 5-75um 10 12 BOREHOLE LOG GEOTECH 11223795-01-FLD-21-03-01, BH LOGS.GPJ GEOLOGIC.GDT 13-4.0 14 15 4.6 Very Dense 51mm diameter SS-6 34 |100+ 50 12 monitoring well 50=150mm 16 installed to 4.6m 5.0 17 18 19-6.0 20-6.1 SS-7 20 100+ SAND - Brown Coarse 16 Borehole open to 6.2 50=76mm Sand, trace Gravel, Wet, 6.1m upon 21completion Very Dense **END OF BOREHOLE** 22 - 7.0 23-24

REFERENCE No.: 11223795-01 ENCLOSURE No.: BOREHOLE No.: BH-2 BOREHOLE REPORT ELEVATION: __ 278.420 m Page: _1_ of _1_ **LEGEND** Mason Homes Limited CLIENT: _ \boxtimes ss - SPLIT SPOON PROJECT: Geotechnical and Hydrogeologic Investigation, Centre Road, Uxbridge, ON AS - AUGER SAMPLE LOGGED BY: W. Moore DATE: 1 March 2021 ST - SHELBY TUBE ■ CS - CORE SAMPLE DRILLING COMPANY: Landshark Drilling METHOD: Solid Stem Auger and Split Spoons - WATER LEVEL NOTES: Elevation data obtained using Leica RTX1250X GPS unit. m Below Existing Grade Blows per 6 in. / 15 cm Penetration Index Shear test (Cu) Stratigraphy Type and Number Moisture Content Recovery Sensitivity (S) **COMMENTS** Lab ∪ W_p W_i W Atterberg limits (%) **DESCRIPTION OF** SOIL AND BEDROCK − 0.76 m − 0.73 m × "N" Value (blows / 0.3 m) RQD 0.0 10 20 30 40 50 60 70 80 90 m **GROUND SURFACE** TOPSOIL (178mm) 0.2 SILTY SAND - Brown Silty SS-1 60 22 2 8 Sand, trace Organics, Moist, 6 22 2 8.0 TILL - Brown Silty Sand, 17 little Gravel, Moist, Compact 1.0 SS-2 80 10 12 24 ф X 12 16 1.5 5 Dense 18 6 SS-3 100 9 20 32 12 2.0 13 8 32 SS-4 d 80 8 20 42 22 9 Groundwater first encountered at 3.0 3.0 3.0m SAND - Light Brown Sand, 18 some Silt, trace Gravel, Wet, WL - 3.3 m 11-SS-5 100 10 12 24 Compact 3/10/2021 12 Grain Size 14 12 Analysis: SS-5 9% Gravel BOREHOLE LOG GEOTECH 11223795-01-FLD-21-03-01, BH LOGS.GPJ GEOLOGIC.GDT 13-62% Sand 29% Clay & SIIt 51mm diameter 14monitoring well installed to 3.7m 15 4.6 Very dense SS-6 36 |100+ 50 13 4.9 50=152mm 16 TILL - Light Brown SIIty 5.0 Sand, little Gravel, Moist, 17 Very Dense 18-19-- 6.0 20-SS-7 11 50=152mm 100 100+ Borehole open to 6.2 END OF BOREHOLE 6.1m upon 21completion 22 - 7.0 23-24

REFERENCE No.: 11223795-01 ENCLOSURE No.: A-3 BOREHOLE No.: BH-3 BOREHOLE REPORT **ELEVATION:** 275.951 m Page: _1_ of _1_ **LEGEND** Mason Homes Limited CLIENT: _ \boxtimes ss - SPLIT SPOON PROJECT: Geotechnical and Hydrogeologic Investigation, Centre Road, Uxbridge, ON AS - AUGER SAMPLE LOGGED BY: W. Moore DATE: 1 March 2021 ST - SHELBY TUBE CS - CORE SAMPLE DRILLING COMPANY: Landshark Drilling METHOD: Solid Stem Auger and Split Spoons - WATER LEVEL NOTES: Elevation data obtained using Leica RTX1250X GPS unit. m Below Existing Grade Blows per 3 in. / 15 cm Penetration Index △ Field Shear test (Cu) Stratigraphy Type and Number Moisture Content Recovery Sensitivity (S) **COMMENTS** □ Lab ∨ vv ater content (%) W_p W_i Atterberg limits (%) **DESCRIPTION OF** SOIL AND BEDROCK − 0.76 m − 0.74 m × "N" Value (blows / 0.3 m) RQD 0.0 % % 10 20 30 40 50 60 70 80 90 ft m **GROUND SURFACE** TOPSOIL (152mm) 0.2 SILTY SAND - Brown Silty SS-1 50 2 4 20 Sand, Moist, Loose 2 2 2 - 1.0 0 SS-2 50 27 2 9 7 8 1.5 5 WL - dry TILL - Brown Silty Sand, 9 little Gravel, Moist, Dense 3/10/2021 6 SS-3 25 13 19 43 24 2.0 20 2.3 Compact 8 12 SS-4 75 10 18 $\phi \times$ 11 7 9 - 3.0 7 SS-5 80 10 9 19 11 10 10 12 51mm diameter monitoring well 13-4.0 installed to 3.7m 14 15 4.6 **CLAYEY SILT** - Grey Clayey Groundwater first 11 Silt, some Sand, trace encountered at SS-6 25 Θ 15 76 16 Gravel, Wet, Hard 28 4.6m 5.0 48 Grain Size Analysis: SS-6 17 6% Gravel 26% Sand 18-68% Silt and Clay 56% Between 19-5-75um Atterberg Limits 6.0 20-6.1 SS-6: TILL - Light Brown Silty LL = 19% 33 Sand, little Gravel, Moist, PI = 6% SS-7 36 100+ 21-50 8 Very Dense 50=102mm 22 6.7 **END OF BOREHOLE** Borehole open to 6.1m upon - 7.0 23completion 24

BOREHOLE LOG GEOTECH 11223795-01-FLD-21-03-01, BH LOGS.GPJ GEOLOGIC.GDT

REFERENCE No.: 11223795-01 ENCLOSURE No.: A-4 BOREHOLE No.: BH-4 BOREHOLE REPORT **ELEVATION:** 269.696 m Page: _1_ of _1_ **LEGEND** Mason Homes Limited CLIENT: _ \boxtimes ss - SPLIT SPOON PROJECT: Geotechnical and Hydrogeologic Investigation, Centre Road, Uxbridge, ON AS - AUGER SAMPLE LOGGED BY: W. Moore DATE: ST - SHELBY TUBE CS - CORE SAMPLE DRILLING COMPANY: Landshark Drilling METHOD: Solid Stem Auger and Split Spoons ▼ - WATER LEVEL Elevation data obtained using Leica RTX1250X GPS unit. m Below Existing Grade Blows per 3 in. / 15 cm Penetration Index △ Field Shear test (Cu) Stratigraphy Type and Number Moisture Content Recovery Sensitivity (S) COMMENTS □ Lab ∨ vv ater content (%) W_p W_i Atterberg limits (%) **DESCRIPTION OF** SOIL AND BEDROCK — 1.10 m — 1.08 m × "N" Value (blows / 0.3 m) RQD 0.0 % % Ν 10 20 30 40 50 60 70 80 90 ft m **GROUND SURFACE** TOPSOIL (127mm) 0.1 SILTY SAND - Dark Brown SS-1A 60 35 3 0 1 Silty Sand, trace Organics, 2 0.5 Moist, Very Loose 0 SS-1B 25 4 2 Brown, Inorganic, Trace Gravel, Compact Y 0.9 WL - 0.9 m 1.0 Seepage 3/10/2021 SS-2 75 20 6 10 ф 4 Groundwater first 10 encountered at 5 1.5 0.91m Loose 7 Borehole caving at 6 SS-3 80 29 2 8 1.5m 6 Grain Size 2.0 8 Analysis: SS-3 3% Gravel 2.3 **CLAYEY SILT** - Grey Clayey 41% Sand 8 4 Silt trace Sand, trace Gravel. 56% Clay and Silt SS-4 ko 50 25 10 21 Wet, Very Stiff 11 9 12 - 3.0 Grain Size 6 Analysis: SS-5 SS-5 60 22 10 24 11 3% Gravel 14 4% Sand 14 93% Silt and Clay 12 58% Between BH LOGS.GPJ GEOLOGIC.GDT 5-75um 13-4.0 Atterberg Limits SS-5: 14 LL = 30% PI = 14% 15 4.6 Stiff 51mm diameter monitoring well SS-6 100 24 5 12 16 installed to 4.6m 5.0 6 17 Borehole open to BOREHOLE LOG GEOTECH 11223795-01-FLD-21-03-01, 5.2m upon 18 completion 19-6.0 20-6.1 Firm SS-7 100 21-27 4 8 4 6 22 6.7 **END OF BOREHOLE** - 7.0 23-24



Client:		Mason Homes t/Site: Centre Road, Uxbridge										La	b no.	.:				SS-	21-1	3				
Projec	t/Site:				Cen	tre R	oad,	Uxb	ridge	, ON				Pr	oject	no.:			1	1223	3795	-01		
Вс	rehole r	no.:					BH1							Sai	mple r	10.:				SS	4			
De	epth:					2.29	9 - 2.9	00 m	1					En	closur	e:			Α-	5				_
1000 900 800 700 800 400 400 400			0.01																					0 10 20 30 40 50 60 60 70 80 90
C	0.001			0.01				(0.1 D	iamete	er (mm	1)		1					10	l			10	100 0
			Cla	y & Sil	t							Sa	nd						G	ravel				
							U	Inifie	F ed Soi	ine il Cla	ssific	atio		lium stem	Co	oarse		Fi	ne		Coar	se	-	
			S	oil De	escript	tion					Gra	avel 17	(%)			i d (%))		C	Clay &	3 5	(%)		
		Silt-size particles (%):												27										
		Clay-		_				n):									8							
Rema	rks:	More int	orma	ition is	s avai	lable (upon	req	uest.															_
Perfor	med b	y:				F	۱. Fa	wce	ett						Da	te:			N	1arch	4, 2	021		
Verifie	d by:	<u>Jo</u>	e Sul	llivan			<	>		<u></u>	Ma				Da	te:			N	1arch	8, 2	021		



Client:	Mason H	lomes	l	.ab no. : SS-21-13			<u> </u>
Project/Site:	Centre Road, U	Jxbridge, ON	F	Project no.:	112237	795-01	_
Borehole no.:	BH2		8	Sample no.:	SS5		
Depth:	3.05 - 3.66	3 m	E	Enclosure:	A-6		
100 90 80 70 40 30 20 10 0.001 Remarks:	O.01 Clay & Silt Un Soil Description	Fine ified Soil Classification Grav	Sand Medium tion System		To Gravel Fine Co	Coarse Silt (%)	0 10 20 30 60 60 01 00 00 00 00 00 00 00 00 00 00 00 00
							_
Performed by:	Josh Su	ıllivan		Date:	March 5	5, 2021	_
Verified by:	Joe Sullivan	Je Sullar		Date:	March 8	3, 2021	_



Client:	Mason Homes		Lab no.:	SS-21	l - 13
Project/Site:	Centre Road, Uxbridge, C	N	Project no.:	112237	95-01
Borehole no.:	ВН3		Sample no.:		
Depth:	2.29 - 2.90 m		Enclosure:	A-7	
100 90 80 70 60 40 30 20 10	0.01 0.1 Diam	eter (mm)		10	0 10 20 30 40 Frequence 40 40 40 40 40 40 40 40 40 40 40 40 40
	Diani		1		
	Clay & Silt Fine	Sand Mediu	m Coarse	Gravel Co	parse
	Unified Soil C	Crovel (%)	Sand (%)	Clay 9 S	2:14 (0/)
	Sui Description	Gravel (%) 6	26	Clay & S	
С	Silt-size particles (%): lay-size particles (%) (<0.002mm):		56 12		
Remarks:					
Performed by:	A. Fawcett		Date:	March 4	, 2021
Verified by:	Joe Sullivan	Date: March 8, 2021			, 2021



Client:	Mason	Homes	L	ab no.:	o no.: SS-21-13		
Project/Site:	Centre Road,	Uxbridge, ON	F	Project no.:	1122379	5-01	
Borehole no.:	BH4		s	Sample no.:	SS3		
Depth:	1.52 - 2.1	3 m	E	Enclosure:	A-8		
100 90 80 70 60 40 30 20 10 0.001	0.01	0.1 Diameter (mm)				0 10 20 30 40 40 80 80 90 100 100	
	Clay & Silt		Sand		Gravel		
		Fine Inified Soil Classifica	Medium		Fine Coa	arse	
	Soil Description		vel (%)	Sand (%) 41	Clay & Si 56	lt (%)	
Remarks:							
Performed by:	Josh S	ullivan		Date:	March 5,	2021	
Verified by:	Joe Sullivan	Je Sure		Date:	March 8,	2021	



Client:	Mason Homes		Lab no.:	SS-21-	-13
Project/Site:	Centre Road, Uxbridge, O	N	Project no.:	1122379	5-01
Borehole no.:	BH4		Sample no.:		
Depth:	3.05 - 3.66 m		Enclosure:	A-9	
100 90 80 70 80 40 40 40 40 40 40 40 40 40 40 40 40 40					10 20 30 40 Estation of the control
0.001	0.01 0.1 Diam	eter (mm)		10	100
	Clay & Silt	Sand		Gravel	
	Fine	Medius lassification Syste		Fine Co	arse
	Soil Description	Gravel (%)	Sand (%)	Clay & Si	ilt (%)
Cla	Silt-size particles (%): y-size particles (%) (<0.002mm):		58 35		
Ola	y-size particles (70) (<0.002mm).		33		
Remarks:					
Performed by:	A. Fawcett		Date:	March 4,	2021
Verified by:	Joe Sullivan		2021		



Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

Client:			Mason Home	es		Lab No.:	SS-21-13	
Project/Site:		Cer	ntre Road, Uxbrid	dge, ON		Project No.:	11223795-01	
Borehole no.:	BH3		Sample no.:		SS6	Depth:	4.57 - 5.18 m	
Soil description:		CL-ML, Low o	compressibility Inor	rganic Silt		_Date sampled:	n/a	
Apparatus: Liquid limit device no.: Sieve no.:		Crank 1 /a	Balance no.: Oven no.: Glass plate no.:	B2	7 3-02667 1	Porcelain bowl no.: Spatula no.:	1	
	Liquid Limit	(LL):		Soil Preparati	ion:			
	Test No. 1	Test No. 2	Test No. 3	1 👝	Cohesive <425 µn	ı 🗸	Dry preparation	
Number of blows	33	25	17	1 🗆	Cohesive >425 µn	n П	Wet preparation	
	Water Cont	ent:			Non-cohesive	_		
Tare no.	11	18	24			Results		
Wet soil+tare, g	29.91	33.30	30.70	22.0				
Dry soil+tare, g	28.61	31.37	29.11	1				
Mass of water, g	1.30	1.93	1.59	(%				
Tare, g	21.46	21.51	21.43	Water Content (%)				
Mass of soil, g	7.15	9.86	7.68	er Cor				
Water content %	18.2%	19.6%	20.7%					
Plastic Limit (F	L) - Water Cont	ent:		10.0				
Tare no.	19	21						
Wet soil+tare, g	29.04	28.38		16.0				
Dry soil+tare, g	28.18	27.58			15 17 19 21	23 25 27 29 Nb Blows	31 33 35 37 39	
Mass of water, g	0.86	0.80			Soil	Plasticity Chart		
Tare, g	21.62	21.52		70		LL 50		
Mass of soil, g	6.56	6.06		60 +	Low plasticity Inorganic clay	High plastic Inorganic c	city	
Water content %	13.1%	13.2%		를 50 	morganic day		Н	
Average water content %	13	.2%		ă 40 -				
Natural Wate	er Content (W ⁿ):		Plasticity Index PI = LL-19	CL			
Tare no.	Bowl			20 -	Low compressibilty		MH and CH	
Wet soil+tare, g	636.74					- High inor - Inorg	n compressibility ganic silt ganic clay	
Dry soil+tare, g	578.57			10	CL MIL	- Medium co norganic si	mpressibility ilt	
Mass of water, g	58.17			0 +	10 20 3	30 40 50 60	70 80 90 100	
Tare, g	201.85				1	Liquid Limit LL		
Mass of soil, g	376.72			Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)	Natural Water Content W ⁿ	
Water content %	15.4%			19	13	6	15	
Remarks:								
	-							
Performed by:		Josh	Sullivan		Date:	M	larch 5, 2021	
		22011	Je Sur	-	=			
Verified by:	Joe Sullivan	<	<u>ノ</u>		Date:	M	larch 8, 2021	



Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

Client:			Mason Home	es		Lab No.:	SS-21-13		
Project/Site:		Cer	ntre Road, Uxbrid	dge, ON		Project No.:	11223795-01		
Borehole no.:	BH4		Sample no.:		SS5	Depth:	3.05 - 3.66 m		
Soil description:		CL, Low	plasticity Inorganic	Clay		Date sampled:	n/a		
Apparatus: Liquid limit device no.: Sieve no.:		Crank 1 /a	Balance no.: Oven no.: Glass plate no.:	B23	7 3-02667	Porcelain bowl no.: Spatula no.:	1		
	Liquid Limit	(LL):		Soil Preparati	on:				
	Test No. 1	Test No. 2	Test No. 3	1 .	Cohesive <425 µm	n 🗸	Dry preparation		
Number of blows	30	25	16	1 -	Cohesive >425 µm	·	Wet preparation		
	Water Cont	l ent:		1 -	Non-cohesive				
Tare no.	4	7	9			Results			
Wet soil+tare, g	30.92	30.36	32.04	33.0					
Dry soil+tare, g	28.83	28.40	29.62						
Mass of water, g	2.09	1.96	2.42	(%					
Tare, g	21.74	21.92	21.93	Water Content (%)					
Mass of soil, g	7.09	6.48	7.69	er Cor					
Water content %	29.5%	30.2%	31.5%	Ž 29.0					
Plastic Limit (P	L) - Water Cont	ent:		20.0					
Tare no.	2	3							
Wet soil+tare, g	28.92	28.91		27.0		20 25 27 20			
Dry soil+tare, g	27.89	27.92			15 17 19 21	23 25 27 29 Nb Blows	31 33 35 37 39		
Mass of water, g	1.03	0.99		70	Soil	Plasticity Chart			
Tare, g	21.47	21.77		70		LL 50			
Mass of soil, g	6.42	6.15		60	Low plasticity Inorganic clay	High plastic Inorganic c	zity Jay		
Water content %	16.0%	16.1%		± 50 −	3 7		н		
Average water content %	16	.1%		<u>a</u> 40 −					
Natural Water	er Content (W ⁿ):		Plasticity Index PI = LL-PL	CL		(MH) and (CH		
Tare no.	Bowl			20	Low compressibilty	- High	and		
Wet soil+tare, g	821.79			10		- Inþrg	n compressibility ganic silt ganic clay		
Dry soil+tare, g	710.18				CL ML	ML and OL - Organic cla	ompressibility ilt ay		
Mass of water, g	111.61			0 +	10 20 3	30 40 50 60 Liquid Limit LL	70 80 90 100		
Tare, g	209.32			Liquid Limit	I	1	1		
Mass of soil, g	500.86			(LL)	Plastic Limit (PL)	, , ,	Natural Water Content W ⁿ		
Water content %	22.3%			30	16	14	22		
Remarks:									
Performed by:		Josh	Sullivan		Date:	M	larch 5, 2021		
Verified by:	Joe Sullivan		Je Sim		Date: M		1arch 8, 2021		

Appendix B MECP Well Records and Well Survey



NAD 1983 UTM Zone 17



Proposed Residential Development Centre Road Phase 2, Uxbridge

Well Location Plan

FIGURE B.1

APPENDIX B.2: WELL SUMMARY - DUG OVERBURDEN WELLS

Well Record Summary
Project No.: 11223795-01
Phase 2 Mason Homes Subdivision, Centre Road, Uxbridge, ON

MECP	Well	Water	Found	Statio	c Level	Tes	t Rate	Well I	Depth	Comments
Well No.	Use	Feet	Metres	Feet	Metres	Igpm	L/min	Feet	Metres	
4604096	Domestic	20.0	6.1	5.0	1.5	2.0	9.1	25.0	7.6	Sandy topsoil to 1', sand to 18', clay and gravel to 25'
4604678	Domestic	14.0	4.3	3.0	0.9	2.0	9.1	18.0	5.5	Topsoil to 1', clay with stones to 10', clay and sand to 18'
4604693	Domestic	14.0	4.3	5.0	1.5	2.0	9.1	21.0	6.4	Topsoil to 1', clay with stones to 12', clay with sand to 21'

Number of wells: 3

	Water	Found	Statio	c Level	Pump	Rates	Well Depth		
	Feet	Metres	Feet	Metres	gpm	L/min	Feet	Metres	
AVERAGE	16.0	4.9	4.3	1.3	2.0	9.1	21.3	6.5	
MAXIMUM	20.0	6.1	5.0	1.5	2.0	9.1	25.0	7.6	
MINIMUM	14.0	4.3	3.0	0.9	2.0	9.1	18.0	5.5	

APPENDIX B.3: WELL SUMMARY - DRILLED OVERBURDEN WELLS

Well Record Summary
Project No.: 11223795-01
Phase 2 Mason Homes Subdivision, Centre Road, Uxbridge, ON

MECP	Well	Wate	r Found	Stati	c Level	Tes	t Rate	Well	Depth	Comments
Well No.	Use	Feet	Metres	Feet	Metres	Igpm	L/min	Feet	Metres	
1904592	Domestic	61.0	18.6	21.0	6.4	6.0	27.2	61.0	18.6	Clay to 6', clayey sand to 18', clay with pebbles and boulders to 48', gravelly sand to 61'
1905494	Domestic	45.0	13.7	3.0	0.9	15.0	68.1	58.0	17.7	Clay with stones to 19', clay to 45', gravelly clay to 54', gravel to 58'
1905784	Domestic	81.0	24.7	23.0	7.0	5.0	22.7	81.0	24.7	Clay to 9', sandy clay to 19', clay with gravel to 74', sand with clay and gravel to 77', sand to 81'
1906753	Domestic	74.0	22.6	25.0	7.6	3.0	13.6	74.0	22.6	Clay to 45', clay with stones to 68', sand with pebles to 74'
1907088	Domestic	41.0	12.5	9.0	2.7	7.0	31.8	51.0	15.5	Sandy clay to 16', clay with pebbles to 41', sand with clay to 48', sand to 51'
1907089	Domestic	45.0	13.7	10.0	3.0	8.0	36.3	54.0	16.5	Clay with sand to 18', clay with pebbles to 45', sand with clay to 50', sand to 54'
1907090	Domestic	46.0	14.0	11.0	3.4	7.0	31.8	50.0	15.2	Sandy clay to 18', clay with pebbles to 46', sand with gravel to 50'
1907119	Domestic	51.0	15.5	22.0	6.7	8.0	36.3	58.0	17.7	Sandy clay to 5', sand to 13', clay to 35', clay with gravel to 51', sand with gravel to 58'
1907294	Domestic	49.0	14.9	12.0	3.7	8.0	36.3	52.0	15.8	Topsoil to 2', sand with clay to 12', clay to 49', sand to 52'
1907346	Domestic	44.0	13.4	9.0	2.7	7.0	31.8	47.0	14.3	Sandy clay to 18', clay to 44', sand to 47'
1907375	Domestic	55.0	16.8	21.0	6.4	8.0	36.3	66.0	20.1	Topsoil to 1', sandy clay to 21', clay to 55', sand with clay to 62', sand to 66'
1908623	Domestic	84.0	25.6	40.0	12.2	10.0	45.4	84.0	25.6	Clay with pebbles to 70', sand to 84'
1910316	Domestic	104.0	31.7	15.0	4.6	6.0	27.2	104.0	31.7	Clay with sand and gravel to 21', clay to 80', silty sand to 98', sand with gravel to 104'
1910916	Domestic	73.0	22.3	24.0	7.3	10.0	45.4	74.0	22.6	Clay with stones to 14', gravel with stones to 49', clay with stones to 56', sand with gravel to 74'
1911609	Domestic	51.0	15.5	25.0	7.6	15.0	68.1	62.0	18.9	Topsoil to 2', sandy clay to 18', clay with sand and gravel to 51', sand and gravel to 62'
1911877	Domestic	83.0	25.3	27.0	8.2	8.0	36.3	86.0	26.2	Clay with sand to 20', clay with stones to 58', sand to 60', clay with stones to 83' gravel with sand to 86'
4604147	Domestic	76.0	23.2	37.0	11.3	5.0	22.7	76.0	23.2	Clay with stones to 12', sand with gravel and clay to 27', clay with boulders to 68', sand and gravel to 76'
4604163	Domestic	50.0	15.2	10.0	3.0	5.0	22.7	56.0	17.1	Clay with gravel and boulders to 50' sand to 56'
4604666	Domestic	84.0	25.6	35.0	10.7	4.0	18.2	103.0	31.4	Clay with stones to 27', gravel to 46', hardpan to 94', sand and gravel to 97', silt to 101', gravel and sand to 103'
4604668	Domestic	85.0	25.9	23.0	7.0	6.0	27.2	89.0	27.1	Fill to 2', Clay with boudlers to 55', clay to 70', clay with gravel to 85', sand to 89'
4604678	Domestic	46.0	14.0	11.0	3.4	7.0	31.8	50.0	15.2	Sandy clay to 18', clay with pebbles to 46', sand with gravel to 50'
4604828	Domestic	100.0	30.5	39.0	11.9	5.0	22.7	108.0	32.9	Topsoil to 2', sand with gravel to 58', clay with boudlers to 90', clay some silt to 100', sand with silt yo 105', gravel with sand and silt'
4604830	Domestic	92.0	28.0	30.0	9.1	3.0	13.6	94.0	28.7	Topsoil to 1', clay with boulders to 25', gravel to 45', sand to 50', clay with boulders to 85', silt to 92', sand to 94'
4604882	Domestic	63.0	19.2	22.0	6.7	8.0	36.3	70.0	21.3	Topsoil to 2', clay with stones to 45', sand with gravel to 55', clay to 63', sand to 70'
4604884	Domestic	95.0	29.0	35.0	10.7	4.0	18.2	105.0	32.0	Sand and clay to 18', clay with boulders to 90', clay with silt to 95', sand with silt to 101' sand with gravel and silt to 105'
4605321	Domestic	72.0	21.9	25.0	7.6	5.0	22.7	76.0	23.2	Clay with stones to 45', clay with sand to 72', sand to 76'
4605567	Domestic	65.0	19.8	21.0	6.4	8.0	36.3	70.0	21.3	Clay to 22', clay with stones to 40', sand with boulders to 63', clay to 65', sand and gravel to 70'
4606383	Domestic	49.0	14.9	1.0	0.3	20.0	90.8	52.0	15.8	Clay to 20', clay with gravel to 46', gravel to 52'
4606657	Domestic	49.0	14.9	2.0	0.6	8.0	36.3	52.0	15.8	Topsoil to 2', clay with stones to 35', gravel to 52'

Number of wells: 29

	Water	Found	Statio	c Level	Pump	Rates	Well Depth		
	Feet	Metres	Feet	Metres	gpm	L/min	Feet	Metres	
AVERAGE	66.0	20.1	20.3	6.2	7.6	34.3	71.1	21.7	
MAXIMUM	104.0	31.7	40.0	12.2	20.0	90.8	108.0	32.9	
MINIMUM	41.0	12.5	1.0	0.3	3.0	13.6	47.0	14.3	

APPENDIX B.4: WELL SUMMARY - ABANDONED AND OTHER WELLS

Well Record Summary
Project No.: 11223795-01
Phase 2 Mason Homes Subdivision, Centre Road, Uxbridge, ON

MECP	Well	Wate	r Found	Stati	c Level	Tes	t Rate	Well	Depth	Comments
Well No.	Use	Feet	Metres	Feet	Metres	Igpm	L/min	Feet	Metres	
7164586	Abandonment							94.0	28.7	No Information Provided
7213790	Abandonment							81.0	24.7	Decommisioned 6" drilled well
7213791	Abandonment							17.0	5.2	Decommisioned 6" drilled well
7311423	Abandonment							74.0	22.6	No Information Provided

Number of wells: 4

	Water	r Found	Statio	c Level	Pump	Rates	Well	Depth
	Feet	Metres	Feet	Metres	gpm	L/min	Feet	Metres
AVERAGE	-		-			-	66.5	20.3
MAXIMUM							94.0	28.7
MINIMUM							17.0	5.2

MINISTRY OF THE ENVIRONMENT The Ontario Water Resources Act 3103E TER WELL RECORD 19608 UXBRIGGE WTARTO DURLIAM CUN ETESS# DAY 29 UXBRILGE 34 NORTH ST LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) GENERAL COLOUR OTHER MATERIALS BLUE 6 CLAY FILL 0 BROWN SAHD CLAY Soft PEBBLES GREY CLAY CREY CLAY BOULDERS 34 GRAUEL BIPOWN SAM 100SF 0006130501 1001862805185 00344051273 00482051373 00618281177 WATER RECORD **CASING & OPEN HOLE RECORD** KIND OF WATER TOHKUN STAIKLES 0 4 MINERAL 2 SALTY 1 G FRESH 3 G SULPHUR 2 G SALTY 4 G MINERAL PLUGGING & SEALING RECORD 0057 4 COPEN HOLE 1 FRESH 3 SULPHUR 2 2 SALTY 4 MINERAL 1 T STEEL 2 🔲 GALVANIZED 3 [] CONCRETE ACKERTOP 4 OPEN HOLE 1 | FRESH 3 | SULPHUR 24-25, 1 D STEEL Z SALTY 4 MINERAL 1 TRESH 3 SULPHUR 3 CONCRETE NIPPLE 2 SALTY 4 MINERAL LOCATION OF WELL 15-16 00 17-18 IN DIA TRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LIFE. INDICATE NORTH BY ARROW. PUMPING Z RECOVERY 60 MIN HOWELL N 5 ABANDONED, INSUFFICIENT SUPPLY 6 ABANDONED POOR QUALITY FINAL 2 OBSERVATION WELL STATUS 3 TEST HOLE 7 UNFINISHED OF WELL DOMESTIC 5 COMMERCIAL Z STOCK 3 IRRIGATION 6 MUNICIPAL 7 PUBLIC SUPPLY WATER USE () 8 COOLING OR AIR CONDITIONING 4 | INDUSTRIAL VI OTHER 9 NOT USED 6 D BORING 7 DIAMOND 1 GABLE TOOL 2 ROTARY (CONVENTIONAL) METHOD 3 | ROTARY (REVERSE) 4 | ROTARY (AIR) OF 8 | JETTING DRILLING COUNTR RD. 8 S AIR PERCUSSION DRILLERS REMARKS

NAME OF WELL CONTRACTOR

WORK ROBER BOADWAYENT, LTD 1413

ADDRESS

BOX 3975 UTT ON WEST ONT

NAME OF DRILLER OR BORER

FOR BOADWAY

SIGNATURE OF CONTRACTOR

SUBMISSION DATE

DATE OF BOTH AND 17

DATA SOURCE / 14/3 SP-62 DATE RECEIVED 63-68 80

DATE OF INSPECTION IMSPECTOR

REMARKS:

CSS.S8

Page 14/7

CSS.S8

The Ontario Water Resources Act

WATER WELL RECORD

COUNTY OR DISTRICT			HIP, BOROUGH, CITY, TOWN, VILL	AGE		VI	BLOCK, THACT, SURVE	Y. ETC		O 33
OWNER (SURNAME FI		28-47	ADDRESS	Road	Thorn		, Ontario			48-53
Ortom Hon		EASTING	146 Weldrick	RC	ELEVATION	RC.	BASIN CODE	DAY	<u>у мо. О С</u>	YR
21	Y 100 2	6.4.9 85 0	#88645D	ध्रा ।	2870	Ş	31		<u> </u>	
	Most		VERBURDEN AND BE	DROCK	MATERIALS	S (SEE 1)	NSTRUCTIONS)		DEPT	1 - FEET
GENERAL COLOUR	COMMON MA	i i	OTHER MATERIALS			GENER	AL DESCRIPTION		FROM	TO
Brown	Clay	Stone	8						0	19
Blue	Clay				Soft				19	45
Gray	Clay	Grave	1		Layers				45	54
Gray	Gravel				Clean				54	58
					-					ļ
		-								ļ
7.									<u></u>	İ
	960512	00453058	5 005420511	74 00	582116.	211		بيا لي		اللا
32	14 15		32	43	<u> </u>	البل	54			75
	TER RECOR		CASING & OPEN HO		ORD	2 (5LOT		31-33 DIAME	1ER 34-38	LENGTH 39
AT - FEET	FRESH 3 SI	INCHES	MATERIAL THICKNESS INCHES	FROM	10	MATE	RIAL AND TYPE		DEPTH TO TOP	41-44
0043	SALTY 4 M	INERAL OZIO	STEEL 12 188	'a.g	55****	σ St	ainless S	teel	00	55 FEET
15-18 1 [□ FRESH ³ □ SI □ SALTY ⁴ □ M	INERAL	3 CONCRETE 4 OPEN HOLE		2055	61	PLUGGIN	G & SEAL		
	FRESH 3 SI	ULPHUR	C GALVANIZED		20-23	FROM	TO	MATERIAL ANI		ACKER ETC)
25-28 1 (FRESH 3 S	ULPHUR 29	3 CONCRETE 4 OPEN HOLE				-13 14-17			
	SALTY 4 M		1 STEEL 26 2 GALVANIZED		27-30	18	22 25 29 30-33 80			7.5
	SALTY 4 M		3 CONCRETE 4 OPEN HOLE			z 6 -	70-77 80			
71 PUMPING TEST ME	THOO 10		11-14 DURATION OF PUMPING GPN	17-18		L	OCATION O	F WEL	L	
STATIC	WATER LEVEL	23 WATER LEVELS DURIN	1 🖂 PUMPING	MINS	IN DIAGE		OW SHOW DISTANCE		FROM ROAD	AND
LEVEL 19-2	PUMPING	15 MINUTES 30 MINUT	ES 45 MINUTES 60 MINU	1 1	V FOLCINI	L. IND	ICATE NORTH BY AF	inow.	1	(I)
003	C25 /EET	DO3 FEET	FEET FEET	35-37 FEET			.ll	200	1	CON
IF FLOWING. GIVE RATE RECOMMENDED PL	38-41	PUMP INTAKE SET AT	WATER AT END OF TEST	42	Ń.		nwe -	6	50-	0
Σ	GPM	RECOMMENDED 4:	3-45 RECOMMENDED	46-49	14 ,		o 4 2	50		
RECOMMENDED PL	W DEEP	SETTING 024	FEET RATE 0015	cau				ንሳ '	35	m
SHALLO		0 27								A .
50-53	54 1 WATE			_					α	(f)
FINAL STATUS	3 🏻 TEST	ER SUPPLY 5 RVATION WELL 6	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED	_			/	6	$op ^n$	7 ()
FINAL STATUS OF WELL	2 OBSE 3 TEST 4 RECH	ER SUPPLY 5 RVATION WELL 6 HOLE 7	ABANDONED. INSUFFICIENT SUP ABANDONED. POOR QUALITY UNFINISHED	_				6	00 "	יוי
FINAL STATUS	2	ER SUPPLY 5 RVATION WELL 6 HOLE 7 HARGE WELL ESTIC 5 COI	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL	_				6	00 "	
FINAL STATUS OF WELL	2 OBSE 3 TEST 4 RECH 55-56 ODM 2 STOC 3 IRRIC 4 INDU	ER SUPPLY S RVATION WELL 6 HOLE 7 HARGE WELL ESTIC 5 COIL KK 6 MU GATION 7 PUI	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL SLIC SUPPLY DLING OR AIR CONDITIONING	_				6	00 "	
FINAL STATUS OF WELL	2 OBSE 3 TEST 4 RECH 55-56 DONI 2 STOC 3 IRRIC 4 INDU	ER SUPPLY 5 RVATION WELL 6 HOLE 7 HARGE WELL ESTIC 5 COINCIN 6 HOLE FOR THE FOR TH	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL SLIC SUPPLY DLING OR AIR CONDITIONING 9 NOT USED	_				6		
FINAL STATUS OF WELL WATER USE	2 OBSE 3 TEST 4 RECH 55-56 DONI 2 STOC 3 IRRIC 4 INDU	ER SUPPLY S CRYATION WELL 6 COMMENT CONVENTIONAL)	ABANDONED. INSUFFICIENT SUP ABANDONED. POOR QUALITY UNFINISHED MMERCIAL NICIPAL BLIC SUPPLY DLING OR AIR CONDITIONING 9 NOT USED 6 BORING 7 DIAMOND	_				6		HH
FINAL STATUS OF WELL	2 OBSE 3 TEST 4 RECH 55-54 DOMI 2 STOC 3 IRRIC 4 INDU	ER SUPPLY S RVATION WELL 6 HOLE 7 HARGE WELL ESTIC 5 COINT	ABANDONED. INSUFFICIENT SUP ABANDONED. POOR QUALITY UNFINISHED MMERCIAL NICIPAL BLIC SUPPLY DLING OR AIR CONDITIONING 1 NOT USED BORING	PLY				6		HH
FINAL STATUS OF WELL WATER USE METHOD OF DRILLING	2 OBSE 3 TEST 4 RECH 55-54 DOMI 2 STOC 3 IRRIC 4 INDU	ER SUPPLY 5 RVATION WELL 6 HOLE 7 HARGE WELL ESTIC 5 COL GATION 7 PUI STRIAL 6 COC COTHER COC COTHER COC COTHER COC COTHER COC COTHER COC COTHER COC COC COTHER COC ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL BLIC SUPPLY DLING OR AIR CONDITIONING 9 NOT USED 6 BORING 7 DIAMOND 1 JETTING 9 DRIVING		ILLERS REMARKS		ONTRACTOR	6		TH	
FINAL STATUS OF WELL WATER USE C METHOD OF DRILLING	2 OBSE 3 TEST 4 RECH 55-54 DOMI 2 STOC 3 INDU 4 INDU 4 AGA CONTRACTOR	R SUPPLY S RVATION WELL 6 HOLE 7 HARGE WELL RSTIC 5 COI	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL BLIC SUPPLY DLING OR AIR CONDITIONING 9 NOT USED 6 BORING 7 DIAMOND 1 JETTING 9 DRIVING		DATA SOURCE		ONTRACTOR 59-62 4743	DATE RECEIVE		HH
FINAL STATUS OF WELL WATER USE C METHOD OF DRILLING NAME OF WELL Sauder	2 G OBSE 3 G TEST 4 RECH 55-54 G OM 2 G STOC 3 G IRRU 4 G INDU CONTRACTOR	R SUPPLY S RVATION WELL STIC S COINCESTIC S COINCESTIC S COINCESTIC S COINCESTIC S COINCESTIC STRIAL SCOOL CONTER STRIAL S COINCESTIC S	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL SLIC SUPPLY DEING OR AIR CONDITIONING O NOT USED 6 BORING 7 DIAMOND O JETTING 9 DRIVING	PLY DR	DATA		ONTRACTOR 59-62 4743 INSPECTOR	DATE RECEIVE		HH
FINAL STATUS OF WELL WATER USE C METHOD OF DRILLING NAME OF WELL ADDRESS R. R. #	2 G OBSE 3 G TEST 4 RECH 55-54 G BONN 2 G STOC 3 G INDU 4 INDU CONTRACTOR Well D LER OR BORER	R SUPPLY S RVATION WELL 6 HOLE 7 HARGE WELL RSTIC 5 COI	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL SLIC SUPPLY DLING OR AIR CONDITIONING O DAIR OND USED 6 BORING O DIAMOND O DRIVING LICENCE NUMBER 4743	PLY R	DATA SOURCE		4743	DATE RECEIVE		HH 5591
FINAL STATUS OF WELL WATER USE C METHOD OF DRILLING NAME OF WELL ADDRESS R.R.# NAME OF DRILL AD Sauder Signature of Sauder	2 G OBSE 3 G TEST 4 G RECH 55-54 G BONN 2 G STOC 3 G IRRIC 4 G INDU CONTRACTOR Well D LER OR BORER LER OR BORER CONTRACTOR	R SUPPLY S CRYATION WELL STIC S COLUMN STRIAL CONTER CONTE	ABANDONED, INSUFFICIENT SUP ABANDONED, POOR QUALITY UNFINISHED WMERCIAL NICIPAL BLIC SUPPLY DLING OR AIR CONDITIONING O DIAMOND O DETTING O DRIVING LICENCE NUMBER A743	FICE USE ONLY	DATE OF INSPECT	JON	4743	DATE RECEIVE		HH

The Ontario Water Resources Act 3/03
WATER WELL RECORD

Ontario		RINT ONLY IN SPA				1 9	3057	8 4	MUNICIP.	2/2	CON	1 1	06
COUNTY OR DISTRICT	-			BOROUGH, CITY	1	AGE		CON	BLOCK, TRACT	. SURVEY. ET	C	O.	
mo	ew	11.47		DORESS	go	01	<u> </u>	<u> </u>		DA	TE COMPLETED	12"	80
	ZONE	EASTING C		HORTHING 1		RC. E	0900	1 AT	ASIN CODE	, D	14 (1)	1	1A
ركي		- 1 2 • •	00	7000	200	25	26		31				1 1 1
CENERAL COLOUR	MO		G OF OV	OTHER MAT	<u> </u>	DROCK	MAIERIA		NSTRUCTION AL DESCRIPT			ОЕРТН - F	EET
GENERAL COLOUR	COMMON			OTALK MAI	ENTALS	······································					FRO) M	F '
brown	cla	7			/			·····			9	> ,	19'
electoro	-0	201		ston				1	im			91	65'
ares	cla			crave				lay			6.	5~ '	74'
Clour	20	nel	4	quar	11	Ray		de	ty		79	¥'	78'
brown	Da	nol						fin	<u></u>		7	7-1	81'
						···	<u> </u>	<i>\(\begin{align*} </i>		····································			
													
				<u></u>	 								
<u></u>			· · · · · · · · · · · · · · · · · · ·	·		<u> </u>				· · · · · · · · · · · · · · · · · · ·			»
						 			<u></u>			<u> </u>	
(3) DOO	9605	0019	50528	006	530512	379 100	74205	11174	007862	81115	1008/64	201	
32	14 15												
	TER RECO	RD	(51)	CASING &	OPEN HO			Z SIZE	S) OF OPENING	¥ 31-11	6000	34-38 LEN	4
WATER FOUND AT - FEET	KIND OF WAT		INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	FROM	- FEET	MATE	RIAL AND TYP	<u> </u>	DEPTH TOF SCRE		41-44 30
0065	SALTY 4	MINERAL	07/2	STEEL 1 GALVANIZED	188	J'AG.	77"				leel 00		FEET
0081	FRESH 3 C		06 4	OPEN HOLE STEEL	19		0077	61 DEPTH	PLU(SEALING I	RECOR	
	FRESH 3 C		2	GALVANIZED CONCRETE	:			FROM 10	TO 0-13 14	-17	THE AND THE	LEAD PACK	ER, ETC)
E 1	FRESH S C		24-25 ,	STEEL 2	6		27-30	10	1-21 22	- 25			
1	FRESH 3 C	3 1	3	☐ GALVANIZED☐ CONCRETE☐ OPEN HOLE	! 			26	-29 30	-33 BC			
PUMPING TEST ME	THOD 10	PUMPING RATE	.	-14 DURATION OF P		., ,		L	OCATIO	ON OF	WELL		
1 PUMP	WATER LEVEL END OF	00 /	GP ELS DURING	1 🖸	PUMPING	17-18 MINS	IN DIA		OW SHOW DI		WELL FROM F	ROAD AND)
LEVEL 19-2	PUMPING	4 15 MINUTES	30 MINUTES	45 MINUTES	RECOVERY	1 1	1	THE THE	TEATE NORT	n oi annoi	•		
IF FLOWING		DA3 FEET	FEI		EET	35-37 FEET							
GIVE RATE	GPI		_	EET 1 CLEAR		145-	V. "4"	Nor	th.	51.		_	
RECOMMENDED PU	MP TYPE	RECOMMENDED PUMP SETTING	170	PUMPING RATE	195	46-49 GPM			1	25 '		7	
50-53								# # 7 4 2	. T/. **	3004		≯ }	
FINAL	2 🗆 OB	TER SUPPLY SERVATION WELL	6 🗆 A	BANDONED, INSU		PLY	7	7/100	well			60	
OF WELL		CHARGE WELL		JNFINISHED			5					5	
WATER	1 DO DO STI		5 COMN 6 MUNI 7 PUBL	CIPAL									
USE () [4 🗆 INI	DUSTRIAL OTHER		ING OR AIR COND				2	<i>;</i>				
	57 [] CA	BLE TOOL		6 BORING				y	onge	<u>57.</u>			
METHOD OF	3 🗆 RO	TARY (CONVENTION TARY (REVERSE)	ONAL)	7 DIAMOND 8 DETTING 9 DRIVING			B 31						
DRILLING	Į.	TARY (AIR) R PERCUSSION	<u> </u>	J DRIVING		DR	ILLERS REMAR	KS:	· · · · · · · · · · · · · · · · · · ·			···•••••••••••••••••••••••••••••••••••	
NAME OF WELL	CONTRACTOR	11.11.	()://	1 di	CENCE NUMBER	¥3 \ <u>≥</u>	DATA	/ 51	4743	59-62	377	8(63-68 60
ADDRESS R.	HU	11.	· /	cry just		ساا		ECTION	INS	PECTOR			<u>· </u>
NAME OF DRILL		unor	rolg	1.	ICENCE NUMBER	1 1	REMARKS:	, // 10	7				12 2
SIGNATURE OF	-	ider	s	UBMISSION DATE	<u>د ۳۰</u> ۰۰ بد	FF	ocu	ria D	7 03/	10-		8	
<u>(16.</u>		THE EN	 	DAY MO.		800	(i) C	<i>سکسی</i> ں /	7	462	·		77 FORM 7

FORM NO. 0506-4-77 FORM 7

VATER WELL RECOR

1906753 19012 2. CHECK 🗵 CORRECT BOX WHERE APPLICABLE LOT + 3234 COUNTY OR DISTRICT TOWNSHIP, BOROUGH, CITY, TO TRACT. SURVE DURHAM 032 RIDGE NO OCT DATE COMPLETED YR 83 UXBRIGGE # 33 0925 5 22 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH - FEET MOST COMMON MATERIAL GENERAL DESCRIPTION OTHER MATERIALS DENSE 45 BROWN 0 CLAY GREY 68 CLAY STONE HARD PEBBLES GREY SAND CEMENTED MOE (51) **CASING & OPEN HOLE RECORD** WATER RECORD DEPTH - FEET KIND OF WATER ¹ 💢 FRESH ³ 🗆 SULPHUR STEEL GALVANIZED SALTY 4 MINERAL 0 6070 188 1 FRESH 3 SULPHUR
2 SALTY 4 MINERAL CONCRETE **PLUGGING & SEALING RECORD** 05 4 OPEN HOLE · FEET I STEEL MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.) FRESH 3 SULPHUR
SALTY 4 MINERAL E GALVANIZED K. PACKER TOP 70 **4** □ OPEN HOLE 1 | FRESH 3 | SULPHUR 1 🗌 STEEL 2 SALTY 4 MINERAL ET SCREEN 2 GALVANIZED 1 🗌 FRESH 🕽 🗌 SULPHUR CONCRETE Z SALTY 4 MINERAL 4 OPEN HOLE LOCATION OF WELL 0005 1 D PUMP 2 M BAILER WATER LEVEL END OF PUMPING 22-24 1 PUMPING IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW. WATER LEVELS DURING 15 MINUTES 30 MINUTES 26-20 29 OFEET 05 5 FEET PS 5 FE 03 & FEET OF PUMPING IF FLOWING 1 CLEAR RECOMMENDED PUMP TYPE RECOMMENDED 43-45 RECOMMENDED FEET RATE SETTING OSS SHALLOW TEEP NORTH ST WATER SUPPLY
OBSERVATION W . ABANDONED, INSUFFICIENT SUPPLY FINAL # ABANDONED POOR QUALITY
7 UNFINISHED **STATUS** 3 TEST HOLE OF WELL 4 | RECHARGE WELL DOMESTIC 5 COMMERCIAL WATER O ■ MUNICIPAL IRRIGATION
INDUSTRIAL 7 | PUBLIC SUPPLY COOLING OR AIR CONDITIONING
 NOT USED USE ☐ OTHER 1 CABLE TOOL 6 BORING METHOD 2 X ROTARY (CONVENTIONAL)
3 ROTARY (REVERSE)
4 ROTARY (AIR) 7 DIAMOND DRILLING 2 OF ■ □ JETTING 9 DRIVING S AIR PERCUSSION LICENCE NUMBER 1413 ROGER BOHDWAYEHTLTD 7 SUTTON WESTONT REMARKS OFFICE CSS.S8

The Ontario Water Resources Act WATER WELL RECORD

Ontario		SPACES PROVIDED	<u> </u>	19	070	88	9012	ODN		106
COUNTY OR DISTRICT	DURHAM) TOWNSHIP, BOROUGH C		GE 1	(([])	con Block	MHO I	TC #\$	2 0	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
OWNER (SURNAME FIRS		ADDRESS	C+		$\overline{}$. 0	ATE COMPLETE		-53
Splonick			rvey St					DAY 18	мо <u>УО</u>	vr. <u>84</u>
21)	<u> </u>	17 18	6, 1,5Q	25 2	בראל <u>י</u>	5 3	<u> </u>			1
	MOST	OG OF OVERBURDE		DROCK N	MATERIA			· · ·	DEPTH -	FEET
GENERAL COLOUR	COMMON MATERIAL		MATERIALS	·		GENERAL DES	CRIPTION		FROM	10
	Clay	Sandy								16
Blue	Clay	Pebbles			T			1		<u>41</u> 48
Grey Grey	Sand Sand	Clay		•	Layer Cours			4		40 51
diey	Janu				OOULB			- -	0	
						~ · · · · · · · · · · · · · · · · · · ·	· ·			4
	-	1.				27%				0.400
									O NAL	P 130
				_						
	40581 004	1130512 004	1822805	74 00	5/2/0	ننيا لبلب		لبياا		ıl L
32	14 15					\$1ZE(\$) OF OP	ENING 31-3	55 CIAMETER	34-38 LEN	11
WATER FOUND	ER RECORD	INSIDE	S OPEN HO	LE RECO		SLOT NO I	31-3	_	OCO INCHES	GTH 39-40
744	FRESH 3 SULPHUR 14	DIAM MATERIAL INCHES	THICKNESS INCHES	FROM	10	Stain	less St	DEPT	10 TOP	8
	FRESH 3 SULPHUR 19	2 GALVANIZE	.188	2a.g.	_48³•°					7,22.1
2 0	SALTY 4 MINERAL	4 日 OPEN HOLE	19	-	20-23	DEPTH SET AT .		RIAL AND TYPE	CEMENT	GROUT.
2 0	FRESH 3 SULPHUR 24	GALVANIZE GONCRETE	l l			F ROM 10-13	14-17		LEAD PACK	ER. ETC)
	FRESH 3 SULPHUR 29 SALTY 4 MINERAL	4 OPEN HOLE 24-25 1 STEEL 2 GALVANIZE	26		27-30	18-21	22-25			r
30-33 1 🗆 2 🗅	FRESH 3 SULPHUR 34 80 SALTY 4 MINERAL	CONCRETE			*	26-29	30-33 80			
71 PUMPING TEST METH	. 1			$\neg \sqcap$		LOCA	TION OF	WELL		
1 PUMP	WATER LEVEL 25	CO TO GPINE OI	15-16 HOURS	7-18 INS		GRAM BELOW SHO			ROAD AND)
LEVEL 19-21	PUMPING 22-24 15 MINUTES	30 MINUTES 45 MINUT	RECOVERY	5	LOT LI	NE INDICATE	NORTH BY ARROY	^{м.}		
- ma	032 111 009 11	ET FEET	FEET grands	-37 EET						
IF FLOWING, GIVE RATE	38-41 PUMP INTAKE	SET AT WATER AT EN		42 DY	•	~				
RECOMMENDED PUMP	P TYPE RECONNENDED	D 3-45 RECOMMENDE	ED 46	-49	ר אי	1 3 1	χl		, ż	
50-53	DEEP SETTING	025 FEET RATE	0007	-	X	المرق	0	N.	10	3.
FINAL	WATER SUPPLY 2 OBSERVATION WEL	S ABANDONED, INS		· Y	\ \	1	V		0	12
STATUS OF WELL	3 TEST HOLE 4 RECHARGE WELL	7 UNFINISHED	OK GONETT!		_	133		B'm	1	1,
55-	1 DOMESTIC 2 STOCK	S COMMERCIAL MUNICIPAL		-			Tim	am		7
WATER USE 0	3 IRRIGATION 4 INDUSTRIAL	7 PUBLIC SUPPLY © COOLING OR AIR COM	NDITIONING			104	MIT	-		-
	OTHER	. 2. □ N	NOT USED				116	K D	K,	
METHOD	2 CABLE TOOL 2 CONVENT		I D							i
OF DRILLING	3 ROTARY (REVERSE 4 ROTARY (AIR) 5 AIR PERCUSSION	B DETTING DRIVING				*				<u>.</u> .
NAME OF WELL CO	- Lawrence		LICENCE NUMBER		ERS REMARK	S CONTRACTO	DR 59-62 A	REIVED) O	1 (5-1-) 40
	r Well Drill				OURCE	1 47	43	9.1(184	¥ " "
R.R.	4 Uxbridg	e, Ont. LO	C 1KO	SE	ATE OF INSPEC		INSPECTOR			
NAME OF DRILLER	Sander		4743	llwl	EMARKS		g.*		3	*
SIGNATURE OF CO	ONTRACTOR	SUBMISSION DATE		OFFICI					3.0	
100	ander_	DAY26 M	o6_ yr	<u> </u>						-77 FORM 7

The Ontario Water Resources Act

31 D/3c

VATER WELL RECOR 1907089 2. CHECK 🗵 CORRECT BOX WHERE APPLICABLE COUNTY OF DISTRICT TOWNSHIP, BOROUGH, CITY, TOWN DURHAM **Ontario** Uxbridge O34 Plan m40 OWNER (SURNAME FIRST) 19 Harvey St. Uxbridge, **484** Loc Lko Splonick Const. H.8.86.750 649,750 21 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH - FEET GENERAL COLOUR OTHER MATERIALS GENERAL DESCRIPTION FROM Brown Clay Sand 0 18 Layers Blue Clay Pebbles 18 45 Grey Sand 45 50 Clay Layers Sand 54 Grey Course 50 * 1 DAN 06 1987 00/86052874 0045305/2 00502280574 0054210 (31 SIZE(S) OF OPENING WATER RECORD **5**1 CASING & OPEN HOLE RECORD 41 SCREEN 06000 025 MATERIAL AND TYPE KIND OF WATER FRESH 3 SULPHUR
2 SALTY 4 MINERAL Stainless Steel 0051 .188 0045 2a.g-51 6 2 🗌 GALVANIZED FRESH 3 SULPHUR 3 CONCRETE 0051 **PLUGGING & SEALING RECORD** 06 61 2 SALTY 4 MINERAL 4 OPEN HOLE I ☐ STEEL MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.) 1 | FRESH 3 | SULPHUR
2 | SALTY 4 | MINERAL Z [] GALVANIZED FROM 3 CONCRETE
4 DOPEN HOLE 1 | FRESH 3 | SULPHUR
2 | SALTY 4 | MINERAL 1 🗆 STEEL 27-30 2 GALVANIZED I FRESH 3 SULPHUR
2 SALTY 4 MINERAL 3 CONCRETE 30-33 D OPEN HOLE LOCATION OF WELL 0012 1 D PUMP 2 M BAILER 30 WATER LEVEL END OF PUMPING 22-24 IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND D PUMPING INDICATE NORTH BY ARROW RECOVERY PUMPING TEST 29-3 32-3 35.3 **0** 10 EEF 1 T CLEAR RECOMMENDED RECOMMENDED PUMPING 43-45 O25 FEET RATE ☐ DEEF DOO 8 GPN 1 🇸 WATER SUPPLY ABANDONED, INSUFFICIENT SUPPLY **FINAL** 2 🗆 OBSERVATION WELL . ABANDONED POOR QUALITY **STATUS** 1 TEST HOLE 7 UNFINISHED OF WELL A | RECHARGE WELL , X DOMESTIC 5 COMMERCIAL 2 STOCK
3 RRIGATION
4 INDUSTRIAL 6 | MUNICIPAL
7 | PUBLIC SUE WATER PUBLIC SUPPLY USE 01 COOLING OR AIR CONDITIONING 9 | NOT USED ☐ OTHER 1 CABLE TOOL
2 ROTARY (CONVENTIONAL)
3 ROTARY (REVERSE)
4 ROTARY (AIR)
5 AIR PERCUSSION METHOD C 6 | BORING 7 DIAMOND JETTING
 DRIVING OF DRILLING DRILLERS REMARKS Sauder Well Drilling Ltd. ž DATE OF INSPECTIO USE Uxbridge, Ontario LOC 1KO REMARKS OFFICE Ab Sauder 4743 **484** DAY 26 6

FORM NO. 0536--4-77 FORM 7

WATER WELL RECORD

1907090 Z. CHECK X CORRECT BOX WHERE APPLICABLE DURHAM TOWNSHIP, BOROUGH, CITY UV) M40)Lot **(**)34 Ontario Uxbridge DAY 19 _{vr}84 19 Harvey St. Uxbridge, Ont. LOC 1KO Splonick Const. 21 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH FEET GENERAL COLOUR OTHER MATERIALS GENERAL DESCRIPTION FROM 18 0 Clay Sandy rown 46 18 Blue Clay Pebbles 46 50 Gravel Grey Sand * 08 38 77/ 31 00/860581 DOMESOS/2 DOS922811 LILLI Stainles SIZE(S) OF OPENING 41 WATER RECORD (51) **CASING & OPEN HOLE RECORD** 06 000 03 WATER FOUND KIND OF WATER DEPTH FRESH 3 | SULFINO... FRESH 3 | SULPHUR 0046. STEEL

GALVANIZED 0047 Stainless Steal 64 47" .188 2a.g. FRESH 3 _ SULPHUR 1 CONCRETE 06 0047 **PLUGGING & SEALING RECORD** 61 4 OPEN HOLE 2 SALTY 4 MINERAL · FEET 1 _ STEEL MATERIAL AND TYPE FRESH 3 SULPHUR
SALTY 4 MINERAL T GALVANIZED 1 CONCRETE 1 | FRESH 3 | SULPHUR
2 | SALTY 4 | MINERAL 4 DOPEN HOLE 1 STEEL 22-25 2 GALVANIZED 1 | FRESH 3 | SULPHUR 2 | SALTY 4 | MINERAL OPEN HOLE LOCATION OF WELL 15-16-O 1 D PUMP 2 🛣 BAILER *00*10 GPM IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. 1 - PUMPING WATER LEVELS DURING RECOVERY PUMPING TEST 60 MINUTES 26-24 29-3 32-34 35-3 t T CLEAR 2 CLOUDY FÉET RECOMMENDED RECOMMENDED 43-45 SETTING 025 SHALLOW DEEP FEET S ABANDONED, INSUFFICIENT SUPPLY FINAL OBSERVATION WELL B ABANDONED, POOR QUALITY **STATUS** , UNFINISHED OF WELL 4 | RECHARGE WELL DOMESTIC

DOMESTIC

TOTAL

TOT 5 COMMERCIAL ■ MUNICIPAL WATER 01 7 | PUBLIC SUPPLY USE COOLING OR AIR CONDITIONING OTHER 9 🔲 NOT USED CABLE TOOL ROTARY (CONVENTIONAL) 6 BORING **METHOD** 7 DIAMOND 3 🗖 ROTARY (REVERSE) 4 ROTARY (AIR)
5 AIR PERCUSSION DRILLING 9 DRIVING LICENCE NUMBER ONLY Sauder Well Drilling Ltd. USE Uxbridge, Ontario TOC · JKO REMARKS OFFICE 4743

WATER WELL RECORD

1907119 Ontario 1. PRINT ONLY IN SPACES PROVIDED 2. CHECK S CORRECT BOX WHERE APPLICABLE COUNTY OR DISTRICT TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE CON. BLOCK, TRACT, SURVEY, ETC. Uxbridge **ADDRESS** DATE COMPLETED 19 Harvey St. Uxbridge Ont. LOC 1KO 22 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) MOST **GENERAL COLOUR** DEPTH - FEET OTHER MATERIALS GENERAL DESCRIPTION COMMON MATERIAL FROM ΤO Yellow Clay Sandy 0 Brown Sand Loose 13 Clay Brown 13 19 Clay Blue Soft 19 35 Blue Clay Gravel Layers 35 51 Brown Sand Gravel Clean 51 58 00/342877 00513051174 00586281162 32 **WATER RECORD** 51 SIZE(S) OF OPENING **CASING & OPEN HOLE RECORD** DIAMETER 34-38 Z (SLOT NO) WATER FOUND DEPTH - FEET KIND OF WATER INSIDE WALL FEET AT - FEET MATERIAL DIAM THICKNESS MATERIAL AND TYPE FROM INCHES INCHES FRESH 3 | SULPHUR OF SCREEN Stainless Steel STEEL ao 55 2 - SALTY 4 - MINERAL 2 GALVANIZED 15-18 FRESH 3 SULPHUR 19 3 CONCRETE 06 PLUGGING & SEALING RECORD 61 2 SALTY 4 MINERAL 4 OPEN HOLE 17-18 1 [] STEEL DEPTH SET AT . FEET 20-23 20-23 FRESH 3 D SULPHUR 24 (CEMENT GROUT. MATERIAL AND TYPE 8 🗍 GALVANIZED FROM LEAD PACKER, ETC.) 10 2 C SALTY 4 MINERAL 3 CONCRETE 10-13 14-17 25-28 t | FRESH 3 | SULPHUR 29 4 DOPEN HOLE 24-25 t STEEL 2 SALTY 4 MINERAL 27.30 14-21 22-25 Z GALVANIZED 30-33 FRESH 3 SULPHUR 34 184 3 CONCRETE 26-29 30-33 80 2 SALTY 4 MINERAL ■ □ OPEN HOLE 10 PUMPING RATE MPING TEST METHOD 11-14 DURATION OF PUMPING LOCATION OF WELL ☐ PUMP 2 TO BAILER **20** WATER LEVEL IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND STATIC 1 D PUMPING WATER LEVELS DURING END OF LEVEL INDICATE NORTH BY ARROW. LOT LINE 2 TRECOVERY PUMPING TEST 19.21 22-24 15 MINUTES 30 MINUTES 45 MINUTES 60 MINUTES 26-Z8 29-31 32-34 35-37 022 FEET 030 FEET 022 FEET FEET PUMPING FEET 🖚 FEET IF FLOWING. 38-41 PUMP INTAKE SET AT WATER AT END OF TEST GIVE RATE 1 TCLEAR 2 CLOUDY GPM RECOMMENDED PUMP TYPE RECOMMENDED RECOMMENDED 43-45 46-49 PUMP PUMPING 0008 GPM X SHALLOW DEEP O 2 SEET. RATE SETTING 50-53 1 WATER SUPPLY 5 ABANDONED, INSUFFICIENT SUPPLY FINAL 30 m. Z | OBSERVATION WELL ■ ABANDONED POOR QUALITY **STATUS** 7 🗌 UNFINISHED 3 TEST HOLE OF WELL 4 | RECHARGE WELL 55-56 DOMESTIC 5 COMMERCIAL ≥ □ STOCK 6 MUNICIPAL WATER 3 | IRRIGATION 7 PUBLIC SUPPLY USE O 4 | INDUSTRIAL ■ □ COOLING OR AIR CONDITIONING ☐ OTHER 9 NOT USED CABLE TOOL 6 BORING **METHOD** Z C ROTARY (CONVENTIONAL) 7 DIAMOND OF 3 C ROTARY (REVERSE) ■ D JETTING 4 D ROTARY (AIR) DRILLING 9 DRIVING 5 AIR PERCUSSION DRILLERS REMARKS NAME OF WELL CONTRACTOR 59-62 DATE CECUD LICENCE NUMBER DATA 58 CONTRACTOR SOURCE Sauder Well Drilling Ltd. CONTRACTOR **ADDRESS** DATE OF INSPECTION INSPECTOR R.R. # 4 Uxbridge, Ontario LOC 1KO NAME OF DRILLER OR BORER LICENCE NUMBER REMARKS Ab Sauder 4743 SUBMISSION DATE FORM NO. 0506-4-77 FORM 7

MINISTRY OF THE ENVIRONMENT COPY

WATER WELL RECORD

LOG OF OVERBURDEN AND BEDROCK MATERIALS ISSE INSTRUCTIONS) GENERAL COLOUN COMMON MATERIAL DIACK TOP SOIL Black TOP Soil Brown Sand Clay Soft 2 2 2 Grey Sand Clay Soft 12 1 Grey Sand Grey Sand Clay Soft 12 1 Grey Sand Grey Sa	10
Ontario Uxbridge Diobetas (Seminater Print) Splonick Const. Ltd. P.O. Box 1066 Uxbridge, Ont. Loc Iko Available Const. Ltd. P.O. Box 1066 Uxbridge, Ont. Loc Iko Available Const. Ltd. Diogram Eloy Const. Ltd. Other Materials General Description Black Top soil Brown Sand Clay Soft 2 2 Grey Sand Soft	3.4
Splonick Const. Ltd. P.O. Box 1066 Uxbridge, Ont. LOC 1K0 on 10 04 Const. Ltd. P.O. Box 1066 Uxbridge, Ont. LOC 1K0 on 10 04	
LOG OF OVERBURDEN AND BEDROCK MATERIALS ISSE INSTRUCTIONS) GENERAL COLOUR COMMON MATERIAL OTHER MATERIALS GENERAL COLOUR COMMON MATERIAL OTHER MATERIALS GENERAL COLOUR COMMON MATERIAL Black Top soil Brown Sand Clay Soft 2 2 1 Blue Clay Soft 12 4 Grey Sand 85	
GENERAL COLOUR COMMON ANTERIAL Black Top soil Brown Sand Clay Soft 2 2 5 Brown Sand Clay Soft 2 2 5 Grey Sand 32 32 32 34 3	v 1 1
Black Top soil Brown Sand Clay Soft 2 1 Blue Clay Soft 12 1 Grey Sand 49 31 DANASC SAND SOFT STATE S	47
Brown Sand Clay Soft 2 12 1 Grey Sand 49 49 3 32	то
Blue Clay Sand 49 31 DODAS A SAND 49 32 DOTA SAND 49 32 DOTA SAND 49 32 DOTA SAND 49 33 DOTA SAND 49 34 DOTA SAND 49 35 DOTA SAND 49 36 DOTA SAND 49 37 DOTA SAND 49 38 PRESS 7 DOLPHUR 79 39 DALLY 6 DIMERAL 10 DEFEN 70	2
Grey Sand 31	2
32 DE LES DEPTH SENDE STATE & DULPHUR 22 DESTINATION OF WAITE STATE STAT	9
32 41 WATER RECORD	2
31	
32 41 WATER RECORD	
32 41 WATER RECORD	
STATIC WATER RECORD STATIC STAT	
STATIC WATER RECORD STATIC STAT	
STATIC WATER RECORD STATIC STAT	
STATIC WATER RECORD STATIC STAT	
WATER FOUND AT - FEET WIND OF WATER NIND OF WATER NIND OF WATER WALL WALL WALL WALL WALL WALL WALL OPEPTH - FEET SIZE IS OF OPENING OLO ON NATERIAL AND TYPE OPEPTH TO ITO OF SCREEN	
WATER FOUND AT - FEET Name of water Name of the pumping Name	<u>.</u>
Stainless Steel Stainless	39-40
STATIC SALTY MINERAL STEEL SALTY MINERAL STEEL SALTY MINERAL STEEL SALTY MINERAL STATIC SALTY MINERAL STATIC SALTY MINERAL STATIC SALTY STATIC SALTY STATIC SALTY STATIC SALTY STATIC SALTY	44 30
2 SALTY 4 MINERAL 20-23 1 FRESH 3 SULPHUR 24 2 SALTY 4 MINERAL 25-28 1 FRESH 3 SULPHUR 29 2 SALTY 4 MINERAL 20-23 1 FRESH 3 SULPHUR 29 2 SALTY 4 MINERAL 25-28 1 FRESH 3 SULPHUR 34 2 SALTY 4 MINERAL 20-23 FROM TO 10-13 14-17 4 OPEN HOLE 21 SALTY 4 MINERAL 22-25 1 STEEL 26 23 GALVANIZED 30-33 1 FRESH 3 SULPHUR 34 24-25 1 STEEL 26 2 GALVANIZED 3 CONCRETE 2 GALVANIZED 3 CONCRETE 2 GALVANIZED 3 CONCRETE 2 SALTY 4 MINERAL 27-30 18-21 22-25 24-25 1 STEEL 26 2 GALVANIZED 3 CONCRETE 2 SALTY 4 MINERAL 27-30 18-21 22-25 21 GALVANIZED 3 CONCRETE 25-29 30-33 80 26-29 30-33 80 27-18 MINERAL 27-10 LOCATION OF WELL 3-10 DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.	EET
2 SALTY 4 MINERAL 30-33 I FRESH 3 SULPHUR 24 O SALTY 4 MINERAL 22-25 GALVANIZED 3 CONCRETE 4 OPEN HOLE 71 UMPING TEST NETHOD 10 PUNPING RATE 10-14 DURATION OF PUNPING 1 PUMP 2 XD BAILER STATIC LEYEL STATIC LEND OF EINDEN SULPHUR 25 WATER LEVELS DURING 2 RECOVERY 27-30 18-21 22-25 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 71 DUMPING TEST NETHOD 10 PUNPING 15-16 OO 17-18 1N DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.	rc.)
30-33 1 FRESH 3 SULPHUR 34 0 3 CONCRETE 26-29 30-33 80 TO PUMPING TEST METHOD 10 PUMPING RATE 15-16 OO 17-18 HINS STATIC WATER LEVEL 25 WATER LEVELS DURING 2 PRECOVERY WATER LEVEL END OF WATER LEVELS DURING 2 PRECOVERY WATER LEVEL BURGES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.	
STATIC LEVEL END OF WATER LEVELS DURING STATUS WATER LEVELS DURING STATUS WATER LEVELS DURING STATUS RECOVERY LOCATION OF WELL STATUS OF WATER LEVELS DURING STATUS OF WATER LEVELS DURING STATUS OF WATER LEVELS DURING STATUS OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.	
STATIC WATER LEVEL 25 1 1 1 1 PUMPING IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW.	
Z RECOVERY	
012 FEET 030	
GPM FEET 1 TO CLEAR 2 CLOUDY	7
RECOMMENDED PUMP TYPE RECOMMENDED 43-45 PUMPING 46-49 PUMPING BOOK BONK	Cor
Lot Lot Lot	
FINAL 1	
OF WELL / TEST HOLE 7 UNFINISHED 7 OF WELL 7 O	
STOCK 6 MUNICIPAL	
USE 01 - IRRIGATION 7 - PUBLIC SUPPLY - INDUSTRIAL - COOLING OR AIR CONDITIONING - OTHER - NOT USED	
57 1 & CABLE TOOL 6 BORING	
METHOD 2 ROTARY (CONVENTIONAL) 7 DIAMOND OF 3 ROTARY (REVERSE) # DIETTING	
DRILLING ' ROTARY (AIR) PRIVING DRIVING DRILLERS REMARKS:	
Sauder Well Drilling Ltd. LICENCE NUMBER 4743 SOURCE 1 4743 SOURCE 1 4743 SOURCE 1 4743	68 JO
GATE OF INSPECTION INSPECTION	
R.R. # 4 Uxbridge, Ontario LOE 1KO SET	
SIGNATURE OF CONTRACTOR SUBMISSION DATE DAY 21 NO. 5 YR85	
MINISTRY OF THE ENVIRONMENT COPY FORM NO. 0506—4—77	-0-

The Ontario Water Resources Act 310/3 e WATER WELL RECORD

Ontario	TEONMENT 1. PRINT ONLY IN 2. CHECK 🗵 CORE			Ç	19073	46 [90.12	CØN .	106
COUNTY OR DISTRICT	DURHAM		bridge	VILLAGE	(Ux)	-6 VI	R. TRACT. SURVEY, ETC	40 Lot	£ 034
owner (surname fill Splonick			P.O. Box 1	066	Uxbride	e, Ont.		E COMPLETED y 31 No 05	40-53 YR. 85
21)	17 649	450	4886600				2006		1V
	10 12	17	VERBURDEN AND		29	30 31			47
GENERAL COLOUR	MOST COMMON MATERIAL		OTHER MATERIALS			GENERAL DE	SCRIPTION	DEPT FROM	H - FEET
Brown	Clay	Sand	У		Loos	e		0	18
Blue	Clay				Soft			18	44
Brown	Sand				Clea	in		44	47
									-
							<u>. :</u>	1087	
	-					Han m	4n 1d.6	W 0 8 1987	
							34		
(21) 100 11	VIACO Small I am de		M	(4)					
31 90/8	6058177 00H		0047638						
(41) WA	TER RECORD	51)	CASING & OPEN	HOLE	RECORD	SIZE(S) OF D	PENING 31-33		75 80 LENGTH 39-40
WATER FOUND AT - FEET	KIND OF WATER	INSIDE DIAM. INCHES	WALL MATERIAL THICKNE INCHE	ESS	DEPTH - FEET	SLOT NO.1	ND TYPE	DEPTH TO TOP	41-44 30
1 ~~ · -	FRESH 3 SULPHUR 14 SALTY 4 MINERAL	64	STEEL 12 188	4 *:	a.g. 44"	^o Stain	less Stee		44 FEET
	FRESH 3 SULPHUR 19 SALTY 4 MINERAL	06	CONCRETE OPEN HOLE		20-23	61 DEPTH SET AT	PLUGGING &		
	FRESH ³ SULPHUR ²⁴ SALTY ⁴ MINERAL	, ,,,,	T STEEL 19 C GALVANIZED CONCRETE		20-23	FROM 10-13	TO MATERI		ENT GROUT, ACKER, ETC.)
	FRESH 3 SULPHUR 29 SALTY 4 MINERAL		4 OPEN HOLE 1 STEEL 26	-	27.30	18-25	22-25		
	FRESH 3 SULPHUR 34 O		Z			26-29	30-33 80		
71 JUNPING TEST NET	1		DURATION OF PUMPING		7	274 LOCA	ATION OF V	VELL	
STATIC	WATER LEVEL 25	2008	I D PILMPING	0 MINS			OW DISTANCES OF	WELL FROM ROAD	AND
LEVEL 19-21	PUMPING 22-24 15 MINUTES 26-24	30 MINUTE	2 RECOVER	Y IINUTES 35-37	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	LINE. INDICATE	NORTH BY ARROW.		
	030 FEET 09 FEE	T		FEET				Cor	Con
IF FLOWING. GIVE RATE RECOMMENDED PUT	GPM.		FEET 1 T CLEAR 2	CLOUDY	N	•		VI	· VII
SHALLOW	PUMP	0 28	PUMPING	46-49 7 GPN					
\$0-53	54				10+6	1 Lot Lu	+ Lot Lot Lo	o t	
FINAL STATUS	1 X WATER SUPPLY 2 OBSERVATION WEL 3 TEST HOLE	L 6 🗆	ABANDONED, INSUFFICIENT ABANDONED, POOR QUALITY UNFINISHED	SUPPLY	12 West	~ 5 / 4	(3 2	1	
OF WELL	4 RECHARGE WELL	5 🗆 COM			1 15	1	3		
WATER	2 STOCK 3 REGATION	6 NUN			(Lorr	nich Dr	
USE O	4 INDUSTRIAL OTHER	• 🗆 coo	LING OR AIR CONDITIONING 9						
METHOD	57 CABLE TOOL 2 ROTARY (CONVENT	IONAL)	6 BORING 7 DIAMOND		 		300m·		7
OF DRILLING	P ROTARY (REVERSE A DESCRIPTION OF THE PROTARY (AIR)		DETTING DRIVING						•
NAME OF WELL	5 AIR PERCUSSION		LICENCE NUM	BER	DRILLERS REMAR	KS:	OR 59.62 DERE	Fiven A =	5) es les
1 1	Well Drillin	ng Lto	i		SOURCE	1 47	43	5078	5"
8 R.R. #		, Onta	ario LOC 11		O DATE OF INSPE	CHON	INSPECTOR		
NAME OF DRILLE	Ab Saude	r	LICENCE NUM				-		
SIGNATURE OF C			SUBMISSION DATE DAY 2 MO. 7	YR.85	OFFICE				
MINISTRY	THE ENVIRONME							FORM NO. 0506	—4—77 FORM 7

FORM NO. 0506-4-77 FORM 7

MINISTRY OF THE ENVIRONMENT COPY

The Ontario Water Resources Act

WATER WELL RECORD

Ontario 1907375 1. PRINT ONLY IN SPACES PROVIDED 2. CHECK X CORRECT BOX WHERE APPLICABLE COUNTY OR DISTRICT TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE DURHAM CON., BLOCK, TRACT, SURVEY, ETC Uxbridge Ontario Plan M **ADDRESS** DATE COMPLETED Box 1066 Uxbridge, Ontario LOC 1KO LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) MOST DEPTH - FEET **GENERAL COLOUR** OTHER MATERIALS GENERAL DESCRIPTION ME COMMON MATERIAL ΤO FROM Black Top soil 0 Clay Sandy Brown Loose 21 Clay Blue Soft 21 55 Sand Clay Brown Dirty 62 Sand 66 Brown Clean 00216058177 005550585 00626280567 006642862 SIZE(S) OF DPENING DIAMETER **WATER RECORD CASING & OPEN HOLE RECORD** CREEN (SLOT NO) 06900 WATER FOUND DEPTH - FEET INSIDE WALL KIND OF WATER AT - FEET **A∵** MATERIAL MAIG THICKNESS MATERIAL AND TYPE TO FROM INCHES INCHES OF SCREEN FRESH 3 SULPHUR Stainless Steel 🗶 STEEL 0063 FEET SALTE MINERAL .188 1 2 GALVANIZED CONCRETE FRESH 3 | SULPHUR PLUGGING & SEALING RECORD 006 DPEN HOLE 2 SALTY 4 MINERAL 17-18 | | | STEEL DEPTH SET AT - FEET (CEMENT GROUT. ¹ ☐ FRESH 3 ☐ SULPHUR 🧗 MATERIAL AND TYPE LEAD PACKER, ETC.) FROM E GALVANIZED TO SALTY 4 | MINERAL 3 CONCRETE 14-17 10-13 ¹ ☐ FRESH 3 ☐ SULPHUR ²⁹ 4 🗌 OPEN HOLE 24-25 1 STEEL 27.30 Z SALTY 4 MINERAL 18-21 22-25 Z GALVANIZED 1 SULPHUR 3 CONCRETE 26-29 30-33 | 80 Z SALTY 4 MINERAL 4 OPEN HOLE UMPING TEST METHOD PUMPING RATE 11-14 DURATION OF PUMPING LOCATION OF WELL 15-16 17-1B 1 □ PUMP 2 🛣 BAILER 0010 GPM 30MINS HOURS . WATER LEVEL IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND 1 D PUMPING STATIC END OF WATER LEVELS DURING LOT LINE. INDICATE NORTH BY ARROW. LEVEL * ECOVERY PUMPING TEST 19-21 22-24 15 MINUTES 30 MINUTES 45 MINUJES 60 MINUTES 26-28 32-34 29.31 35-37 6 ton FEET DUS FEET DO 21 FEET FEET PUMPING PUMP INTAKE SET AT IF FLOWING. WATER AT END OF TEST GIVE RATE 1 T CLEAR 2 CLOUDY FEET GPM RECOMMENDED PUMP TYPE RECOMMENDED RECOMMENDED 43-45 46-49 PUMPING PUMP ☐ SHALLOW TO DEEP SETTUNG FEET. RATE 8000 50-53 I **▼** WATER SUPPLY S ABANDONED, INSUFFICIENT SUPPLY **FINAL** 2 OBSERVATION WELL 6 ABANDONED, POOR QUALITY **STATUS** 3 TEST HOLE 7 UNFINISHED ermick Ur. * OF WELL 4 | RECHARGE WELL 55-56 DOMESTIC 5 CONMERCIAL 2 STOCK MUNICIPAL WATER 1 3 | IRRIGATION PUBLIC SUPPLY USE 4 🔲 INDUSTRIAL ■ □ COOLING OR AIR CONDITIONING OTHER 9 NOT USED 1 D CABLE TOOL 6 D BORING **METHOD** ROTARY (CONVENTIONAL) 7 DIAMOND **OF** ROTARY (REVERSE) ■ □ JETTING ROTARY (AIR) 9 DRIVING **DRILLING** 5 AIR PERCUSSION DRILLERS REMARKS: NAME OF WELL CONTRACTOR LICENCE NUMBER CONTRACTOR Sauder Well Drilling Ltd. DATE OF INSPECTION NSPECTOR R.R. # Uxbridge, Ontario SE CONTR LICENCE NUMBER REMAPKS CE Sauder 4743 SIGNATURE OF CONTRACTOR SUBMISSION DATE

MINISTRY OF THE ENVIRONMENT COPY

The Ontario Water Resources Act

FORM NO. 0506 (11/86) FORM 9

WATER WELL RECORD

Envi Ontario	ronment	VVAI	1908623	COM
	_	SPACES PROVIDED 11	10	14 15 22
OUNTY OR DISTRICT		TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON , BLOCK, TRACT, SUR	VEY. ETC LOT
				DAY 21 MOO9
		2105C 180	bridge, ON)!
	M 10 12	2 2 3 10 10 13 13	16 24 (1) 30 31	
	,	OG OF OVERBURDEN AND BEDRO		DEPTH · FEET
SENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	FROM TO
Brown	Clay	Pebbles	Soft	0 40
Grey	Clay	Few Boulders	Hard	40 70
Red	Sand	Gravel	Cemented	70 8
31 1 1 1 1 1 1 1 1 1	<u> </u>	<u>. </u>		<u>. </u>
z 10	TER RECORD	51 CASING & OPEN HOLE	RECORD SIZE(S) OF OPENING	31-33 DIAMETER 34-38 LENGTH
ATER FOUND	KIND OF WATER	INSIDE WALL	DEPTH · FEET # 14	5 INCHES 4
10-13	FRESH 3 SULPHUR 14	INCHES FR	Johnson S,	OF SCREEN
84	FRESH 3 SULPHUR	51 3 CONCRETE 188	0 80 [6-3	NG & SEALING RECORD
	J SALIY 6 □GAS	5 □ PLASTIC 17-18 1 □ STEEL 2 □ GALVANIZED	ZO-Z3 DEPTH SET AT - FEET FROM TO	MATERIAL AND TYPE (CEMENT GROUT
2 0	SALTY 4 MINERALS 6 GAS FRESH 3 SULPHUR 29	3 CONCRETE 4 COPEN HOLE 5 CPLASTIC	0 76 1	K. Packer top 4'
2 [SALTY 4 MINERALS	24-25 1 DSTEEL 26 2 DGALVANIZED	27-30 18-21 22-25	screen nipple
] FRESH 3 □SULPHUR 34 4 □ MINERALS] SALTY 6 □ GAS	3 CONCRETE 4 OPEN HOLE 5 PLASTIC	26-29 30-33 86	
PUMPING TEST MET	THOD 10 PUMPING RA	l l	LOCATION	OF WELL
1 D PUMP	Z EX BAILER WATER LEVEL 25	12 GPM 15-16 30 17-16 HOURS 30 MINS	IN DIAGRAM BELOW SHOW DISTAN	
LEVEL	PUMPING 22-24 IS MINUTE	· · · · · · · · · · · · · · · · · · ·	LOT LINE INDICATE NORTH BY	D/0 (38
	50 1607 45			11
IF FLOWING, GIVE RATE	88-41 PUMP INTAK		50'Dowell	
RECOMMENDED PU	PUMP	ED 43-45 RECOMMENDED 46-41	North St.	
SHALLOW	Z DEEP SETTING	73 FEET RATE 10 GPM		
FINAL	1 X WATER SUPPLY	B ABANDONED, INSUFFICIENT SUPPLY		
STATUS OF WELL	2 OBSERVATION W 3 TEST HOLE	7 UNFINISHED	+	
	4 RECHARGE WELL	9 DEWATERING 5 COMMERCIAL	S	
WATER USE	2 STOCK 3 IRRIGATION 4 INDUSTRIAL OTHER	MUNICIPAL DUBLIC SUPPLY COOLING OR AIR CONDITIONING DNOT USED	78	
METHOD	57 CABLE TOOL		Younge St.	
OF	2 ROTARY (CONVE 3 ROTARY (REVERS	1	, , ,	1200
ONSTRUCTION	B AIR PERCUSSION	,	DRILLERS REMARKS:	13694
NAME OF WELL		WELL CONTRACTOR'S LICENCE NUMBER	DATA SOURCE SOURCE S9-4	OCT 1 5 1987
ADDRESS	Boadway Ent		SOURCE DATE OF INSPECTION INSPECTOR	001 1 3 1307
Box 3	97 Sutton We	ST, ON LOE IRO	N REMAPAS	
Grant	Boadway	TOO29	OFFICE	
SIGNATURE OF	TECHNICIAN/CONTRACTOR	SUBMISSION DATE DAY 21 NO. 09 YR87	le l	



The Ontario Water Resources Act WATER WELL RECORD

Ontario	1. PRINT ONLY IN	SPACES PROVIDED RECT BOX WHERE APPLICABLE	1910316 👸 വു	N 1 106
Durham		TOWNSHIP, BOROUGH CITY, TOWN, VILLAGE	CON , BLOCK, TRACT, SURVEY ETC	LOT 25-27
1 Mir II alli		7300	DATE COM	
		entre St. U		9 MO 11 YR 89
1 2	H 10 12	3.8.5.9.8.8	C. ELEVATION 3. RC. BASIN CODE II	67
	Tank	I	OCK MATERIALS (SEE INSTRUCTIONS)	DEPTH - FEET
GENERAL COLOUR	COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	FROM TO
Brown	Clay	Sand, Gravel	Loose	0 21
Grey	Clay	Silt	Hard Fine, Cemented	21 80 80 98
Grey	Sand	Gravel	Mixed	80 98 98 104
			niked	98 104
31 32 32 31 32 31 31 32 31 32 31 32 32			<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>
1 Z 10	TER RECORD	51 CASING & OPEN HOLE	RECORD SIZE: S) OF OPENING 31-33 DIAME	75 80 TER 34-38 LENGTH 39-40
WATER FOUND AT - FEET	KIND OF WATER	INSIDE WALL THICKNESS	RECORD DEPTH - FEET ROW TO SISTINO 1 25 MATERIAL AND TYPE	6 INCHES 3 FEET
	§ FRESH 3 □SULPHUR 14 □ SALTY 4 □ MINERALS 6 □ GAS	10-11 1 LXTEEL 12	Johnson S/S	101 FEET
	FRESH 3 □SULPHUR 19 □ SALTY 6 □GAS	61 3 CONCRETE 188	0 101 61 PLUGGING & SEAI	ING RECORD
	FRESH 3 SULPHUR 24	17-18 1 STEEL 19 2 GALVANIZED 3 CONCRETE	20-23 DEPTH SET AT - FEET MATERIAL AND	O TYPE (CEMENT GROUT LEAD PACKER, ETC.)
25-28 1	FRESH 3 SULPHUR Z9	4 □ OPEN HOLE 5 □ PLASTIC	97 101 K. Pac	ker top 4'
30-33 1	FRESH 3 SULPHUR 34 10	1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE	1 10 20 1	nipple
2 [SALTY 6 GAS	5 □ PLASTIC		
71	2 X BAILER	7 GPM 2 15-16 17-18 MINS	LOCATION OF WEL	
STATIC LEVEL	PUMPING	EVELS DURING 1 X PUMPING 2 RECOVERY	IN DIAGRAM BELOW SHOW DISTANCES OF WELL LOT LINE INDICATE NORTH BY ARROW.	FROM ROAD AND
15	24-2		Davis Dt. 030 027 42850	
S IF FLOWING. GIVE RATE RECOMMENDED PU	38-41 PUMP INTAKE	SET AT WATER AT END OF TEST 42	030 007 42850	
RECOMMENDED PU		1 STATE OF S		
SHALLOV		95 FEET RATE 6 GPM		
FINAL	1 WATER SUPPLY	5 ABANDONED, INSUFFICIENT SUPPLY	men 0 (85)	
STATUS OF WELL	2 OBSERVATION WELL 3 TEST HOLE 4 RECHARGE WELL	L G ABANDONED POOR QUALITY T UNFINISHED DEWATERING		<u> </u>
	5-56 1 DOMESTIC	5 COMMERCIAL		Young St.
WATER	STOCK INDUSTRIAL	MUNICIPAL PUBLIC SUPPLY COOLING OR AIR CONDITIONING		n
	☐ OTHER	9 NOT USED		100
METHOD	CABLE TOOL ROTARY (CONVENT			~
CONSTRUCTI	ON 3 ROTARY (REVERSE 4 ROTARY (AIR) 5 AIR PERCUSSION)	[]	70848
NAME OF WELL		WELL CONTRACTOR'S	DRILLERS REMARKS DATA SB CONTRACTOR 59-62 DATE RECEIVED	63-68 80
Roger ADDRESS	Boadway Ent.	, Ltd. 1413	SOURCE 1413 DEC	0 8 1989
151	7 Sutton Wes	t, ON LOE IRO	SE	
Jim O'	Neill	TOO30	l w	
	Boa dur	SUBMISSION DATE DAY 29 MO. 11 YR. 89	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
MINISTRY	OF THE ENVIRONM	MENT COPY] [RM NO. 0506 (11/86) FORM 9

The Ontario Water Resources Act

WATER WELL RECORD

Ontario		I SPACES PROVIDED	1910916	06
Durham		TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	con. BLOCK, TRACT, SURVEY ETC	6 555655
		North St. U	xbridge, ON DAY O	
		3,8,6,0,5,2	ELEVATION NC. MASIN CODE	
1 2	10 12	OG OF OVERBURDEN AND BEDRO	CK MATERIALS (SEE INSTRUCTIONS)	47
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM TO
Brown	Clay	Stones	Packed	0 14
Brown	Gravel	Sand	Coarse	14 49
Grey Brown	Clay	Stones Gravel	Packed Clean	49 56
BLOWII	Salid	Gravei	Clean	56 74
31	TER RECORD KIND OF WATER	51 CASING & OPEN HOLE	DEPTH - FEET H 14	6 INCHES 3 FEET
73	FRESH 3 SULPHUR 14 SALTY 4 MINERALS 6 GAS FRESH 3 SULPHUR 19	INCHES INCHES FR	O 69 MATERIAL AND TYPE Johnson S/S 61 PLUGGING & SEAL	OF SCREEN 70FEET
20-23 1	□ SALTY	5 PLASTIC	20-23 DEPTH SET AT - FEET MATERIAL AND	
25-28 1	☐ SALTY 6 ☐ GAS ☐ FRESH 3 ☐ SULPHUR 29	3 CONCRETE 4 OPEN HOLE 5 OPLASTIC		ker top 4'
30-33 1	SALTY 6 GAS FRESH 3 SULPHUR 34 B MINERALS SALTY 6 GAS	24-25	27-30 18-21 22-25 SCREEN 26-29 30-33 80	nipple
71 PUMPING TEST ME		25 GPM 2 15-16 17-18 MISS	LOCATION OF WEL	L
STATIC LEVEL 19-2 24 IF FLOWING. GIVE RATE RECOMMENDED PI SHALLO 50-53	22-24 15 MINUTES 26-	LEVELS DURING 1 M PUMPING 2 RECOVERY 10 30 MINUTES 45 MINUTES 60 MINUTES 129-31 32-34 35-37 1ET FEET FEET 1 WATER AT END OF TEST 42 FEET 1 KCLEAR 2 CLDUDY	IN DIAGRAM BELOW SHOW DISTANCES OF WELL LOT LINE INDICATE NORTH BY ARROW.	
FINAL STATUS OF WELL WATER USE	1 XWATER SUPPLY 2 OBSERVATION WE 3 TEST HOLE 4 RECHARGE WELL 55-56 X DOMESTIC 2 STOCK 3 IRRIGATION 4 INDUSTRIAL OTHER	S ABANDONED, INSUFFICIENT SUPPLY O ABANDONED POOR QUALITY O UNFINISHED DEWATERING COMMERCIAL O MUNICIPAL DUBLIC SUPPLY O COOLING OR AIR CONDITIONING O NOT USED	So 010 110	
METHOD OF CONSTRUCTI	5 AIR PERCUSSION	E)	Siloan Rd.	91640
ROGER ADDRESS	Boadway Ent.		DATA SOURCE S8 CONTRACTOR 1 3 DATE RECEIVED DEC	1 0 1990 ""
Hank I	OT Sutton Wes	SUBMISSION DATE	S REMARKS	
	OF THE ENVIRON			RM NO. 0506 (11/86) FORM 9

The Ontario Water Resources Act WATER WELL RECORD

	SPACES PROVIDED 11	1911609	0,11, , , , 106!
Z. CHECK ⊠ CORI	TOWNSHIP, BOROUGH CITY JOWN, VILLAGE	CON BLOCK TRACT, SURVEY ETC	LOT 25-27
OWNER (SURNAME FIRST) 28-47	ADDRESS		MPLETED 48-53
AONE EASTING	NORTHING RC	L Street DAYZ ELEVATION _ BC BASIN CODE 11	
	7.22 4.8.8.6.1.28	ELEVATION RC BASIN CODE II	
L	OG OF OVERBURDEN AND BEDRO	OCK MATERIALS (SEE INSTRUCTIONS)	
GENERAL COLOUR COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM TO
Top Soil			0 7
Brown Clay	Sandy		2 18
Rrow Clay	Sand + Grace	Q	18 51
Brown Sand+ 6	ravel		51 62
31		<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>
32	32	إيباليابا إيباليليا إ	بالبلبليل ا
41 WATER RECORD	51 CASING & OPEN HOLE	RECORD SIZE(S) OF OPENING 31-33 DIA SIZE(S) OF OPENING 31-33 DIA SIZE(S) OF OPENING 31-33 DIA	METER 34-38 LENGTH 39-40
WATER FOUND KIND OF WATER 10-13 FRESH 3 SULPHUR 14	DIAM MATERIAL THICKNESS	DEPTH - FEET ROM TO WATERIAL AND TYPE	DEPTH TO TOP 41-44 30 OF SCREEN
SALTY 4 MINERALS 6 GAS	10-11 1 STEEL 12 2 GALVANIZED 3 CONCRETE	13-16	56 1111
15-18 1 FRESH 3 SULPHUR 19 2 SALTY 4 MINERALS 6 GAS	4 OPEN HOLE 5 PLASTIC	OLDTH SET AT LEFET	
20-23 1 FRESH 3 SULPHUR 24 2 SALTY 4 MINERALS 6 GAS	1 USTEEL 2 GALVANIZED 3 CONCRETE	FROM TO MATERIAL A	ND TYPE LEAD PACKER, ETC.)
25-28 1 FRESH 3 SULPHUR 29 2 SALTY 6 GAS	4 OPEN HOLE 5 PLASTIC 24-25 1 DSTEEL 26	27-30 18-21 22-25	
30-33 1 FRESH 3 SULPHUR 34 MINERALS	2 GALVANIZED 3 GCONCRETE 4 GOPEN HOLE	26-29 30-33 80	
PUMPING TEST METHOD 10 PUMPING RAT	5 PLASTIC	LOCATION OF WE	
71 1 PUMP 2 SAILER	70 GPM	IN DIAGRAM BELOW SHOW DISTANCES OF WEL	
LEVEL BUMBLUC	LEVELS DURING 2 RECOVERY 30 MINUTES 45 MINUTES 60 MINUTES	LOT LINE INDICATE NORTH BY ARROW.	
F 25 50 50 "	29-31 32-34 35-37	Kentre N	Building
IF FLOWING 38-41 PUMP INTAKE	SET AT WATER AT END OF TEST 42	1	# 46
FEET FEET OF F	FEET 1 CLEAR 2 CLOUDY D 43-45 RECOMMENDED 46-49 PUMPING	050 010 128-0	
SHALLOW DEEP SETTING	5 6 FEET RATE 15 GPM		
FINAL 54 I WATER SUPPLY	ABANDONED, INSUFFICIENT SUPPLY		
STATUS	, UNFINISHED		
OF WELL 4 - RECHARGE WELL	D DEWATERING S COMMERCIAL		{
WATER 2 STOCK 3 IRRIGATION	MUNICIPAL PUBLIC SUPPLY		
USE INDUSTRIAL OTHER	COOLING OR AIR CONDITIONING D NOT USED	240>	1 20'
METHOD 1 CABLE TOOL 1 ROTARY (CONVEN	6 DORING TIONAL) 7 DIAMOND	North St	
OF 1 ROTARY (REVERSE CONSTRUCTION 4 ROTARY (AIR)		100 14% 54	116127
s AIR PERCUSSION	DIGGING OTHER	DRILLERS REMARKS	116137
acht be Water Will	LYP SUSSESSED WELL CONTRACTOR'S LICENCE NUMBER 5459	DATE OF INSPECTION DATE OF INSPECTION SOURCE "1 3 1992 "" "	
DANGE WELL TECHNICAN	1 01	DATE OF INSPECTION INSPECTOR	
	WELL TECHNICIAN'S LICENCE NUMBER	AEMARKS	-
SIGNATURE OF TECHNICIAN CONTRACTOR	SUBMISSION DATE	PFICE	
Metalille	DAY 29 ho 7 VR 92		FORM NO. 0506 (11/86) FORM 9

MINISTRY OF THE ENVIRONMENT COPY

The Ontario Water Resources Act

Ontario Env	rironment		1911877	KECORD
COUNTY OR DISTRICT	2. CHECK 🗵 CORR	TOWNSHIP, BOROUGH, CITY, TOWN VILLAGE	CON BLOCK, TRACT, SURVEY	15 22 23 74
		BRIDGE TWP.	Oxhricks) con.6	PT . 133
		7307 CENTE		DAY 38EP NO 9 YR 93
1 2	M 10 12	1NG RC.	ELEVATION RC. BASIN CODE	" " " " " " " " " " " " " " " " " " "
	LC	G OF OVERBURDEN AND BEDRO	CK MATERIALS (SEE INSTRUCTIONS)	
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM TO
BROWN	CLAY	SAND		0 20
GRAY	CLAY	STONES	MED.	20 58
GRAY	SAND		LOOSE	58 60
GRAY	CLAY	STONES	MED.	60 83
GRAY	GRAVEL	SAND	LOOSE	83 86
WATER FOUND AT - FEET	BAILER WATER LEVEL END OF PUNPING 22-24 15 MINUTES 77 24-28 T FEET FEE 38-41 PUMP INTAKE S GPM RECOMMENDED PUMP	MATERIAL TH CANESS FR.	DEPTH - FEET SM TO STAINLESS ST 83 61 PLUGGING	BEEL DEPTH TO TOP 81-44 10 OF SCHEEN 83 FEET BEEL CEMENT GROUT LEAD PACKER ETC.) WELL OF WELL FROM ROAD AND
	2 OBSERVATION WELL 3 TEST HOLE 4 RECHARGE WELL 5-56 1 DOMESTIC 2 STOCK	7 UNFINISHED DEWATERING 5 COMMERCIAL 6 MUNICIPAL	Joseph Jo	į į
WATER USE METHOD OF	3 IRRIGATION 4 INDUSTRIAL OTHER 57 CABLE TOOL 2 20 ROTARY (CONVENT 3 ROTARY (REVERSE)	■ □ JETTING	NORTH	51.
CONSTRUCTI	ON ON ON ON ON ON ON ON	9 DRIVING DIGGING OTHER	DRILLERS REMARKS	133578
ADDRESS OF WELL	GOODWOOD ON	WELL TECHNICIAN'S	DATE OF INSPECTION INSPECTOR	FEB 0 1 1994
Earl	ARL SAUDER TECHNICIAN/CONTRACTOR SELLELL OF THE ENVIRONM	T-0016 SUBNISSION DATE DAY	OFFICE	FORM NO. 0506 (11/86) FORM 9

The Ontario Water Resources Commission Act County or District .Township, Village, Town or City. Date completed 29 Con. 6 Casing and Screen Record **Pumping Test** Inside diameter of casing Total length of casing Type of screen ... Pumping level. DIVISION OF Length of screen.... WATER RESOURCES Duration of test pumping..... Water clear or cloudy at end of test clear Depth to top of screen JUL 1 4 1969 Diameter of finished hole Recommended pumping rate ONTARIO WATER with pump setting of RESOURCES COMMISSION Well Log Depth(s) at which water(s) From Overburden and Bedrock Record found 0] 骞 20' **Location of Well** For what purpose(s) is the water to be used?

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

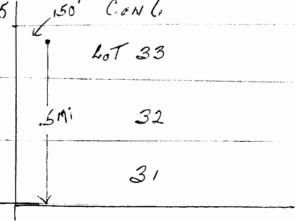
Drilling or Boring Eirm

(Signature of Licensed Drilling or Boring Contractor)

Form 7

OWRC COPY

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





The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management is	n Ontario 1. PRINT ONLY IN S 2. CHECK ⊠ CORRE	PACES PROVIDED CCT BOX WHERE APPLICABLE 1 1	4604147 MUNICIP. CO. 46101019 CO.	n.	22 23 24
ONTA		TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.		LOT 25-27
OWNER (SURNAME FI	RST) 28-47	ADDRESS	DATE	COMPLETED	18-53
		ING RC. RC. RC. RC. 24 425	XBRIGGE ONT DAY. ELEVATION RC. BASIN CODE II 1 9925 5 22	Mo 210	YR 5
		DG OF OVERBURDEN AND BEDRO	26 30 31		47
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION		- FEET
	COMMON MATERIAL			FROM	то
BLUE	CLAY	STONE	HARd	0	12
RES	5/1Nd	GRAUFLE CLAY		12	27
BLBE	CLAY	BOULDERS	HARd	27	68
RES	SANL	GRAUEL	200SE	68	76
32 10 10 10 10 10 10 10 10 10 10 10 10 10	2.305/12	DMM. MATERIAL THICKNESS INCHES	E RECORD DEPTH - FEET ROM TO DOTC 20-23 DEPTH SET AT - FEET FROM TO 10-13 114-17 18-21 22-25 26-29 30-33 BO	INCHES DEPTH TO TOP OF SCREEN AND TYPE (CE	75 80 LENGTH 39-40 FEET 41-44 80 FEET ECORD MENT GROUT, PACKER, ETC.)
71 PUMPING TEST MET	SALTY 4 MINERAL THOD 10 PUMPING RATE	4 □ OPEN HOLE	LOCATION OF W	/FII	
STATIC LEVEL 19-21 STATIC LEVEL 19-21 FEET FEET RECOMMENDED PUI SHALLOW 50-53	PUMPING 22-24 FEET 30-41 PUMP INTAKE GPM. RECOMMENDED PUMP SETTING	28 29-31 35-37 FEET FEET WATER AT END OF TEST 42 FEET CLEAR 2 CLOUDY 43-45 RECOMMENDED 46-49 PUMPING GPM.	IN DIAGRAM BELOW SHOW DISTANCES OF WELL LOT LINE. INDICATE NORTH BY ARROW.		
WATER USE (54 1 WATER SUPPLY 2 OBSERVATION WEI 3 TEST HOLE 4 RECHARGE WELL 55-56 1 DOMESTIC 2 STOCK 3 IRRIGATION 4 INDUSTRIAL OTHER 57 1 CABLE TOOL 2 ROTARY (CONVENT) 3 ROTARY (REVERSE	7 UNFINISHED 5 COMMERCIAL 6 MUNICIPAL 7 PUBLIC SUPPLY 8 COOLING OR AIR CONDITIONING 9 NOT USED 6 BORING 110NAL) 7 DIAMOND	1	EAL EN	
NAME OF WELL OF ADDRESS NAME OF DRILLE	ROTARY (AIR) 5 AIR PERCUSSION CONTRACTOR Boalwa	LICENCE NUMBER LICENCE NUMBER LICENCE NUMBER LICENCE NUMBER	DATE OF INSPECTION INSPECTOR REMARKS:	9 6 9 P/F	63-68 BC
SIGNATURE OF CO	Boadwa Boadwa	SUBMISSION DATE DAY 14 MO any YR 69	OFFICE	C\$5.\$8	J.B

OWRC COPY

. 1 /1717 1/1/1917 2101	in Proceedings				JB.
	爲	}			
4886/13 0 Con U1				460416	3
ev. STR 0900 The Ontario Water	Resources	Commission	Act	,	7
sin 10101 WATER W	ELL	RECO	ORD		
1				Wille:	
County or District Marco				M.	19/0
Con. \mathcal{L} Lot $\mathcal{G} \mathcal{L}$ 3	Date o	completed	day	month	year)
	dre	ss	ybridg		
Casing and Screen Record			Pumpir	g Test	
Inside diameter of casing.	St	atic level	10'		
Total length of casing 52'	Te	est-pumping rat	:e	5	G.P.M.
Type of screen Johnson # 25	IVISION OF	ımpıng level		56	
Length of screen WATE	ir resour	Cat ion of test p	umping) M	2
Depth to top of screen 52 'OCT	6 196	eter clear or clo	udy at end of	test clea	ى س
Diameter of finished hole					G.P.M.
RESOUR	CES COMM	th pump setting	g of	feet belo	w ground surface
Well Log					
Overburden and Bedrock Record		From ft.	To ft.	which water(s)	(fresh, salty,
Boulders - Gravel - clay	*	0	50	50-56	fresh
- Water bearing sand	Active Water Resources Commission Act R WELL RECORD Township, Village, Town or City Date completed Gress Pumping Test Static level Test-pumping rate OCT 6 Recommended pumping rate Recommended pumping rate G.F. ONTARIO WATER RISDERS ion of test pumping RESOURCES COMMISSION Depth(s) at which water(s) free found To the which water(s) free found To the which water(s) free below ground surface with the water(s) found Location of Well In diagram below show distances of well from road and lot line. Indicate north by arrow. HOT 32 ANOTH St. Water Record County Ro Location of Well County Ro County Ro County Ro				
	-				
			l a a subla su	of Well	
For what purpose(s) is the water to be used?		In diagram			l from
2 1		_			
Is well on upland, in valley, or on hillside?			,4	07 32	and \
Wilson Water Wells Lto	1		North	St.	40
Address R.R. # 2 Gormley				1, ,	
<i>T</i>			. 33	14 mi	7
Licence Number 3439		6	•	\ \	,
Name of Driller or Borer Coul Sauder		3 9	1	N CON	lo
Address 187 28m Rd Stouff	The Oritario Woter Resources Commission Act NATER WELL RECORD Township, Village, Town or City Aress The Oritario Woter Resources Commission Act NATER WELL RECORD Township, Village, Town or City Aress Pumping Tost Test-pumping rate Solution of From the County of Township County or Count				
Date Lept 30/69		4 12	1	10	
William Wilson		HWY	Lou	NIY MO.	=
(Signature of Licensed Drilling or Boring Contractor)		//			
Form 7 5M 60-20912					

7 ?

OWRC COPY

The Ontario Water Resources Commission Act VATER WELL RECORD 30 4604666-46009 1. PRINT ONLY IN SPACES PROVIDED 2. CHECK CORRECT BOX WHERE APPLICABLE CONG Uxbridge 032 DATE COMPLETED _yr.*]0* DAY 30 0925 5 22 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH - FEET MOST GENERAL DESCRIPTION OTHER MATERIALS GENERAL COLOUR COMMON MATERIAL FROM 0' Clar Brown stones 27 hard Boulders 94 94 97 31 agatasta | agadan/13 | agadan/13 | lagatasta | lagatas 10 14 15 21 21 32 43 43 54 54 54 65 65 75 32 SIZE(S) OF OPENING (SLOT NO.) MATERIA' MATERIA' 51 CASING & OPEN HOLE RECORD WATER RECORD 06.000 KIND OF WATER MATERIAL 009 1 DEFRESH 207 3 □ SULPHUR TEEL 2 GALVANIZED 4 MINERAL 1 🗆 FRESH 3 ☐ CONCRETE 3 SULPHUR 0099 PLUGGING RECORD SEALING 4 OPEN HOLE 2 SALTY 4 MINERAL DEPTH SET AT - FEET 1 STEEL (CEMENT GROUT, LEAD PACKER, ETC.) MATERIAL AND TYPE 1 ☐ FRESH 3 ☐ SULPHUR 2 GALVANIZED 2 SALTY 4 MINERAL 3 ☐ CONCRETE 4 ☐ OPEN HOLE ¹ ☐ FRESH 27-30 22-25 1 STEEL 4 MINERAL 2 SALTY 2 GALVANIZED 1 FRESH 3 SULPHUR 3 ☐ CONCRETE 4 MINERAL 2 SALTY 4 OPEN HOLE LOCATION OF WELL 15-16 00 17-18 HOURS 00 MINS ² ☐ BAILER IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. ☐ PUMPING WATER LEVELS DURING NUTES 60 MI North CLEAR 2 ☐ CLOUDY ā PUMP SETTING () 95 ☐ SHALLOW DEEP _ GPM./FT. SPECIFIC CAPACITY WATER SUPPLY 5 ☐ ABANDONED, INSUFFICIENT SUPPLY **FINAL** OBSERVATION WELL ABANDONED, POOR QUALITY **STATUS** 3 TEST HOLE 7 UNFINISHED OF WELL 4 ☐ RECHARGE WELL DOMESTIC 2 STOCK 5 COMMERCIAL 6 MUNICIPAL WATER 3 | IRRIGATION 7 PUBLIC SUPPLY 4 INDUSTRIAL 8 COOLING OR AIR CONDITIONING 9 D NOT USED OTHER CABLE TOOL 6 BORING **METHOD** ROTARY (CONVENTIONAL) 3 | ROTARY (REVERSE) 7 DIAMOND 8 | JETTING 4 ROTARY (AIR) 5 AIR PERCUSSION DRILLING 9 DRIVING DRILLERS REMARKS: 5459 5459 020371 USE LICENCE NUMBER OFFICE CSS.S8 SUBMISSION DAT DAY 19 JB OWRC COPY

The Ontario Water Resources Commission Act ATER WELL RECORD 4604668 -1. PRINT ONLY IN SPACES PROVIDED 2. CHECK X CORRECT BOX WHERE APPLICABL TOWNSHIP ROPOLICH DATE COMPLETED 0930 22 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) MOST DEPTH - FEET GENERAL COLOUR OTHER MATERIALS GENERAL DESCRIPTION COMMON MATERIAL FROM то 0 brown 2 2 55 55 70 70 89 1000,3601 | 1 00,5561,310,51,4 100,70,310,5 | 1 1 100,851,20,5 1/1 1 100,851,20,5 1/1 10 14 15 21 32 43 54 54 32 51 CASING & OPEN HOLE RECORD WATER RECORD 06.000 04 WALL THICKNESS INCHES DEPTH KIND OF WATER MATERIAL INCHES FRESH 3 SULPHUR 0085 STEEL 25 89 2 SALTY 85 4 MINERAL 2 GALVANIZED .188 3 CONCRETE 1 ☐ FRESH 3 SULPHUR 61 PLUGGING SEALING RECORD 0085 4 OPEN HOLE 2 SALTY 4 MINERAL DEPTH SET AT - FEET 1 STEEL (CEMENT GROUT, LEAD PACKER, ETC.) MATERIAL AND TYPE 3 ☐ SULPHUR ¹ ☐ FRESH 2 GALVANIZED 4 MINERAL 2 SALTY 3 ☐ CONCRETE 4 OPEN HOLE 1 🗆 FRESH 3 SULPHUR 4 MINERAL 2 SALTY 2 GALVANIZED 1 ☐ FRESH 3 SULPHUR 3 ☐ CONCRETE 2 ☐ SALTY LOCATION OF WELL ² ☐ BAILER IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. WATER LEVEL END OF PUMPING 22-2 PUMPING WATER LEVELS DURING 2 RECOVERY 2 ☐ CLOUDY _ PUMP SETTING 075 DEEP GPM./FT. SPECIFIC CAPACITY WATER SUPPLY 5 ABANDONED, INSUFFICIENT SUPPLY **FINAL** 6 ☐ ABANDONED, POOR QUALITY STATUS OF WELL 3 ☐ TEST HOLE 7 UNFINISHED 4 RECHARGE WELL DOMESTIC 2 STOCK 5 COMMERCIAL 6 MUNICIPAL WATER 3 | IRRIGATION 7 PUBLIC SUPPLY USE 0/ 4 INDUSTRIAL 8 COOLING OR AIR CONDITIONING ☐ OTHER 9 NOT USED CABLE TOOL CONVENTIONAL 6 D BORING METHOD 3 ROTARY (REVERSE) 8 | JETTING DRILLING 9 DRIVING 5 AIR PERCUSSION DRILLERS REMARKS:

5459

ICENCE NUMBER

USE

OFFICE

REMARKS

020371

J.B.

32.22**9**

5459

The Ontario Water Resources Commission Act MATER WELL RECORD 31D 4604678 -.1. PRINT ONLY IN SPACES PROVIDED 2. CHECK X CORRECT BOX WHERE AF DATE COMPLETED 12 649460 וביו י 2 2 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH - FEET OTHER MATERIALS GENERAL DESCRIPTION COMMON MATERIAL FROM TO 0 Rsoi / 10 18 10 32 Z (SLOT NO.) M (MATERIAL AND TYP) 34-38 LENGT 51 CASING & OPEN HOLE RECORD WATER RECORD KIND OF WATER MATERIAL AND TYPE FRESH 3 ☐ SULPHUR 4 MINERAL GALVANIZED 18 B 2.5 CONCRETE OPEN HOLE 1 G FRESH 3 SULPHUR 61 SEALING RECORD PLUGGING 0018 2 SALTY 4 MINERAL DEPTH SET AT - FEET (CEMENT GROUT, LEAD PACKER, ETC.) 1 STEEL 20-23 MATERIAL AND TYPE 1 🗆 FRESH 3 SULPHUR 4 MINERAL 2 GALVANIZED 2 SALTY 3 ☐ CONCRETE 4 OPEN HOLE 1 🗆 FRESH 3 SULPHUR 27-30 22-25 ! ☐ STEEL 2 SALTY 4 MINERAL 2 GALVANIZED 3 ☐ SULPHUR 4 ☐ MINERAL 1 🗌 FRESH 3 ☐ CONCRETE 2 SALTY 4 OPEN HOLE LOCATION OF WELL 2 BAILER IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. WATER LEVEL END OF PUMPING 22-24 1 D PUMPING WATER LEVELS DURING 15 MINUTES FEE? FEET TEST 2Mi 2□ CLOUDY RECOMMENDED PUMP TYPE 46-4 51. NORTH PUMP SETTING 017 FEET RATE 0002 X SHALLOW | DEEP GPM./FT. SPECIFIC CAPACITY CONG Lot 32 1 WATER SUPPLY 2 ○ OBSERVATION WELL ⁵ ABANDONED, INSUFFICIENT SUPPLY **FINAL** 6 ABANDONED, POOR QUALITY **STATUS** 3 ☐ TEST HOLE 7 UNFINISHED OF WELL 4 RECHARGE WELL DOMESTIC 2 STOCK 3 IRRIGATION 5 COMMERCIAL 6 MUNICIPAL 7 PUBLIC SUPPLY WATER USE 0/ 4 INDUSTRIAL B COOLING OR AIR CONDITIONING 9 | NOT USED ☐ OTHER 6 BORING 1 CABLE TOOL **METHOD** 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 8 🗆 JETTING OF 4 D ROTARY (AIR) DRILLING 9 DRIVING DRILLERS REMARKS LICENCE NUMBER CONTRACTOR 020371 ONLY 5459 5459 DATE OF INSPECTION LICENCE NUMBER Ρ OFFICE 1988 66 WΙ J-B DAY 25 OWRC COPY

The Ontario Water Resources Commission Act

WATER WELL RECORD

31D 3E

Water management in Ontai	ITIO 1. PRINT ONLY IN SPACE	DOV WHERE ARRIVEABLE	4604	4.6.0.0.9	$C\phi N$	1196
COUNTY OR DISTRICT	2. CHECK & CORRECT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	3	CON., BLOCK, TRACT, SURVEY	, ETC.	LOT 25-27
OWNER (SURNAME FIRST)	28-47	Appriologe		ion 6	DATE COMPLETED /	/8-53
anterian	e Develo	p. Wybrid	ge		DAY_15 NO.	VR. 70
21 1	zone Easting 17 6494	60 4886050	C ELEVATION 0191215	RC. BASIN CODE 5 2 2 1	<u> </u>	
	10 12	OF OVERBURDEN AND BEDI	5 26	30 31		47
	MOST		COCK MATERIA		DEP	TH - FEET
GENERAL COLOUR	COMMON MATERIAL	OTHER MATERIALS		GENERAL DESCRIPTION	FROM	то
Vark (sproul				3	,
Proun	clay	stones				12
Lilue	day	4 sand			12	21
	1					
-						
31) aaa1 6	22 1 1 1 1 1 1 1 1 2 1 1 2	dast/21 1 baa/3/asta9 1	لبلليبا		لىللىسا لى	
32 10 14 15	5 1 1 1 21 1	32	43	54	65	75 80
	RECORD	51 CASING & OPEN HOL		Z SIZE(S) OF OPENING 31	1-33 DIAMETER 34-3	8 LENGTH 39-40
AT TEET	D OF WATER	DIAM. MATERIAL THICKNESS INCHES	DEPTH - FEET FROM TO	MATERIAL AND TYPE	DEPTH TO TO OF SCREEN	P 41-44 BO
0/4 10-13 1 FRES		10-11 1 STEEL 12	13-16	SC	Or SCIECE.	FEET
15-18 1 FRES	SH 3 SULPHUR 19	2 GALVANIZED 3 CONCRETE 4 OPEN HOLE	0021	61 PLUGGING &	SEALING	RECORD
2 SALT	TY 4 MINERAL SH 3 SULPHUR 24	17-18 1 STEEL 19	20-23	DEPTH SET AT - FEET MAT	EDIAL AND TYPE	(CEMENT GROUT,
2 SALT	Y 4 MINERAL	2 ☐ GALVANIZED 3 ☐ CONCRETE		FROM TO 10-13 14-17		THEREIN, ETC.,
1 FRES		4 OPEN HOLE 24-25 1 STEEL 26	27-30	18-21 22-25		<u>-</u>
30-33 1 ☐ FRES 2 ☐ SALT		2 ☐ GALVANIZED 3 ☐ CONCRETE		26-29 30-33 80		.,
PUMPING TEST METHOD	10 PUMPING RATE	4 OPEN HOLE	1			·
/ 71	BAILER POR	15-16 17-18		LOCATION O		
STATIC WAT	TER LEVEL 25 WATER L	EVELS DURING 1 PUMPING 2 RECOVERY	IN	DIAGRAM BELOW SHOW DISTANCES O LINE. INDICATE NORTH BY ARROW.		ND.
LEVEL PI	22-24 15 MINUTES 26-28	30 MINUTES 45 MINUTES 32-34 60 MINUTES 35-3:	,			
O FEET	FEET FEET	FEET FEET FEET AT WATER AT END OF TEST 42			10	
Z IF FLOWING, GIVE RATE	38-41 PUMP INTAKE SET	1 FAR 2 CLOUDY		.JMi		
RECOMMENDED PUMP TYPE	GPM. RECOMMENDED PUMP	43-45 RECOMMENDED 46-49	†	NORTH ST		
SHALLOW D	DEEP SETTING		-			
54	GPM./FT. SPECIFIC					
FINAL STATUS	WATER SUPPLY OBSERVATION WELL	5 ABANDONED, INSUFFICIENT SUPPLY 6 ABANDONED, POOR QUALITY		CON6 4	.1.32	
OF WELL	3 ☐ TEST HOLE 4 ☐ RECHARGE WELL	7 UNFINISHED		CONG	<i>y</i> ,	
55-56	DOMESTIC 2 STOCK	5 COMMERCIAL 6 MUNICIPAL				
WATER USE 01	3 IRRIGATION 4 INDUSTRIAL	7 PUBLIC SUPPLY 8 COOLING OR AIR CONDITIONING				
	OTHER	9 \(\text{NOT USED}		UX	BRIDGE	
METHOD 57	1 CABLE TOOL	6 BORING				
OF	POTARY (CONVENTION ROTARY (REVERSE)	8 🗌 JETTING				
DRILLING	FOTARY (AIR) AIR PERCUSSION	9 DRIVING	DRILLERS REMAR	KS:		
NAME OF WELL CONTR	ACTOR /	A ALICENCE NUMBER	DATA	58 CONTRACTOR 59-62 D	ATE RECEIVED	63-68 80
O Milson	stelaters for	Vello 14. 3459	SOURCE DATE OF INSPE	5459	02037	· ·
TO RESIDENCE OF RE	# 2 Sor	m ley	REMARKS:			
NAME OF DEPULLER OF	BORER	LICENCE NUMBER				Р
O SIGNATURE OF CONTRA	ACTOR / 1	SUBMISSION DATE	OFFICE		79 9 80	
o Willia	m W tson	W DAY 25 MO 0 2 YR 7'	ō		CSS SS.B.	WI
OWRC COP	Υ					Æ



The Ontario Water Resources Commission Act

310/3E

WATER WELL RECORD

COUNTY OR DISTRICT	Ontario 1. PRINT ONLY IN SP. 2. CHECK X CORREC	T BOX WHERE APPLICABLE	11 1 2 Y,≥10WN, VILLAG	<u> </u>	604828	CON., BLOCK, TRACE	019 C15	<u> </u>	22 23 LOT 25-2
Ontari	10	Uxbridg	9.6			Con	DATE COM	PLETED	032
		(/ X	BRID	GE EL	EVATION	RC. BASIN CODE	DAG 2	мо.	06. yr 2 .
12	10 12	8 85	990	25 2	965	5 22			<u> </u>
	LO	G OF OVERBURDEN		ROCK				DEPTH	- FEET
GENERAL COLOUR	COMMON MATERIAL	OTHER MAT	ERIALS			GENERAL DESCRIPTIO	N	FROM	70
P. Brown Brown	Topsoil Sand	Gravel	+ Re	Idage		50ft 00se		2'	58
Blue	Clay	Boulch		CIED	ha	1		58'	90
Blue	Clay	some	51/7	L		011		90'	100
grey	Sand	sila	<i>L</i>		<i>f</i>	ine		100	105
grey	gravel	Sand	+ 511	<i>'</i> +	، م	ac ked		105'	108
31 10002		\$ dag 1113 qqq			adzastad	1 1 1 1 1 1 1 2 1 2 1 2 1 2		(982/11/0	
20-23 1 2 25-28 1 2 30-33 1 1	KIND OF WATER FRESH 3 SULPHUR 14 SALTY 4 MINERAL	INSIDE DIAM. INCHES MATERIAL I	WALL THICKNESS INCHES 2 //88	DEPTH- FROM	13-16 10 10 10 10 10 10 10 10 10 10	7-8-4	G & SEA	INCHES IN	TEE
71 PUMPING TEST METH	PUMPING RATE	11-14 DURATION OF P	16 17-1			LOCATION	OF WE	LL	
	PUMPING 22:24 15 MINUTES 26:26 65 FEET 38-41 PUMP INTAKE SI GPM. P TYPE P TYPE P DEEP GPM./FT. SPECIFI	30 MINUTES 30 MINUTES 30 MINUTES 30 MINUTES 37 MINUTES 39 MINUTES 39 MINUTES 39 MINUTES 39 MINUTES 30 MINUTES 31 MINUTES	37 553 SET 3 7 FEE OF TEST 4 2 CYCOUDY 46-4 5 GPM	9	IN DIAGE	AM BELOW SHOW DISTALL INDICATE NORTH BY	ARROW.	CM ROAD AND	30
FINAL STATUS OF WELL 55- WATER USE	1 LL DOMESTIC 2 STOCK 3 IRRIGATION 4 INDUSTRIAL OTHER	5 ABANDONED, INSU 6 ABANDONED, POOF 7 UNFINISHED 5 COMMERCIAL 6 MUNICIPAL 7 PUBLIC SUPPLY 8 COOLING OR AIR CONT	QUALITY		Centre	LOT 32 E.17 Mi NORT	£0,2	2 7	
METHOD OF DRILLING	57 1 CABLE TOOL 2 ROTARY (CONVENTION 3 ROTARY (REVERSE) 4 ROTARY (AIR) 5 AIR PERCUSSION	8 JETTING 9 DRIVING		=	ERS REMARKS:		W .		VI
- ~ //	Water U 4.2 Gorm	lella Ital	ENCE NUMBER	USE ONLY	DATA SOURCE DATE OF INSPECTION OU. 2 REMARKS:	INSPEC		4097 Z	1 2/J
SIGNATURE OF CO	em Wilso	SUBMISSION DATE DAY 2 MO	9 yn7/	OFFICE			∪ \$\$.\$8		J.



WATER WELL RECORD

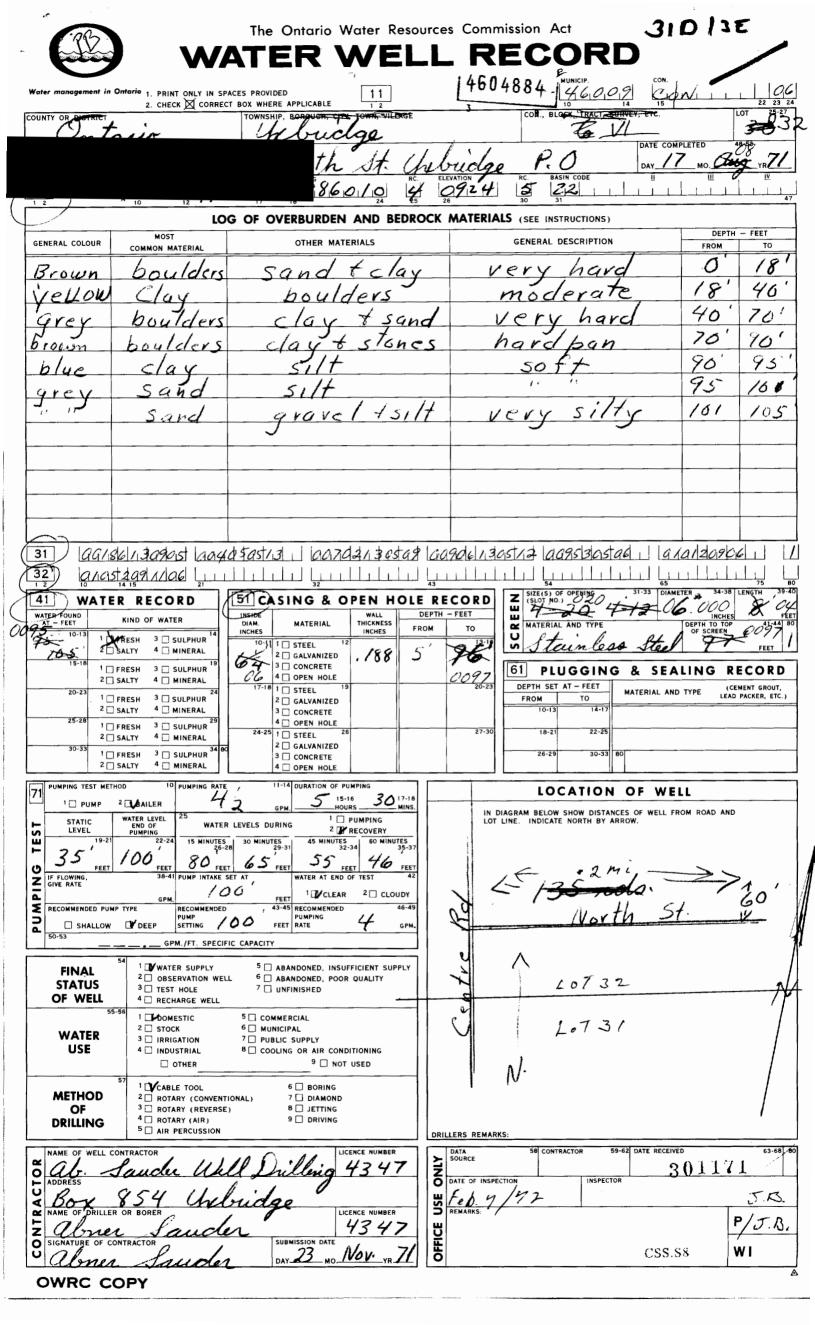
Water	management in	Ontario 1. PRINT ONLY IN SE	PACES PROVIDED 11	4604830 MUNICIP. 46009 CON.	N
COUNTY	OR STRICT		TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BELOW, TRACT, SORWET, ETC.	22 23 24 LOT 25-27
OWNER	nTari	0	Uxbridge	DATE COME	232 PLETED 48:53
			Ulbride	DAY 04	Mo 1705
			386040 RC	ELEVATION RC BASIN CODE II	<u> </u>
		LO	G OF OVERBURDEN AND BEDRO	DCK MATERIALS (SEE INSTRUCTIONS)	47
GENE	RAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH ~ FEET
12.	Brown	Topsoil		dense	PROM TO
	own	Clay	Boulders	cicnsc	1' 25'
		273	D 04 / 0 4 / 2		, ,
Ye	llow	Gravel	Boulders	loose	25' 45'
Br	own	Sand		packed	45' 50'
	lue	Clav	Boulders	very hard	50' 85'
_	Grev	5,17		very soft	85' 92'
1	vey	Sand		very fine	92' 94'
7	J			,	
31) baa	1602 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	560513 1 1 QQ4551113 1	laasadag laasstaast13 laa	92206 11 1
32) <u>Q</u> a94	4298	32	43 54 65	75 80
41		R RECORD	51 CASING & OPEN HOLE		6 000 04
WAIE AT	FOUND - FEET	KIND OF WATER FRESH 3 SULPHUR 14	DIAM MATERIAL THICKNESS	OM TO MATERIAL AND TYPE	DEPTH TO TOP 41-44 80
7.2	092 20	FRESH 3 SULPHUR SALTY 4 MINERAL	10-11 1 STEEL 12 2 GALVANIZED , 188 - 6	Stainless Steel	0090' FEET
		FRESH 3 SULPHUR 19	3 □ CONCRETE 06 4 □ OPEN HOLE	0090 61 PLUGGING & SEA	
	, –	FRESH 3 SULPHUR 24	17-18 1 STEEL 19 2 GALVANIZED	DEPTH SET AT - FEET	TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
	25-28 1	FRESH 3 SULPHUR 29	3 ☐ CONCRETE 4 ☐ OPEN HOLE 24-25 1 ☐ STEEL 26	27-30 18-21 22-25	
-	30-33	SALTY 4 MINERAL STREET BY SALTY BY SALT	1	26-29 30-33 80	1
حط		SALTY 4 MINERAL	4 OPEN HOLE		
71	UMPING TEST MET	HOD 10 PUMPING RATE	11-14 DURATION OF PUMPING 04 15-16 00 17-18 GPM HOURS 00 MINS.	LOCATION OF WEL	.L
ST	STATIC LEVEL	WATER LEVEL 25	R LEVELS DURING 1 PUMPING 2 RECOVERY	IN DIAGRAM BELOW SHOW DISTANCES OF WELL FRO	DM ROAD AND
TES	19-21	22-24 15 MINUTES	30 MINUTES 45 MINUTES 60 MINUTES	900	1 The second
9 5	FLOWING,	38-41 PUMP INTAKE	SET AT WATER AT END OF TEST 42	To the	45
_	IVE RATE	41 M.	O' FEET CLEAR 2□ CLOUDY	(Mosth y!	
P C M	ECOMMENDEO PUN	PUMP /	93' FEET RECOMMENDED 46-49 PUMPING ARATE ON 3 GPM.	v /or 33	
	o-53 <i>QQ</i>	O GPM./FT. SPECI	IC CAPACITY	1 1	<i>9</i> 1
	FINAL	WATER SUPPLY OBSERVATION WE	5 ABANDONED, INSUFFICIENT SUPPLY 6 ABANDONED, POOR QUALITY	Z 20732 3	
	STATUS OF WELL	3 ☐ TEST HOLE 4 ☐ RECHARGE WELL	7 UNFINISHED	(7)	
		DOMESTIC 2 STOCK	5 COMMERCIAL	< .24Mi → \$	
	WATER USE ()	3 IRRIGATION	7 Description of the conditioning		Brey
		OTHER	9 \(\text{NOT USED}	71	
	METHOD	CABLE TOOL		· ·	1/11
	OF DRILLING	3 ☐ ROTARY (REVERSE 4 ☐ ROTARY (AIR)			
	AME OF WELL O	5 AIR PERCUSSION	A A LICENCE NUMBER	DRILLERS REMARKS: DATA 58 CONTRACTOR 59-62 DATE RECEIVE	D 63-68 80
0 2	Wilson	~ Water 6	Vella Ital.	\$\frac{1}{2} \square 1 5420 14	0971
5	R. R. =	# 2 Harry	leu		PITR
TRA	AME OF PRILLE	R OR BORER	LICENCE NUMBER	# NOV- 23/7/	S.C/0B.
Z S	IGNATURE OF S	ONTRACTOR 1 5	SUBMISSION DATE	CSS.SE	5
0	Will	ion Wel	100 DAY 2 MO 09 YR 7/	0	J.B.
\circ	WRC C	OPV			

The Ontario Water Resources Commission Act

310/3E

WATER WELL RECORD

	Ontario 1. PRINT ONLY IN SPACE 2. CHECK ∑ CORRECT	BOX WHERE APPLICABLE	4604882 - MUNICIP. 46 90.9	CON. 016 15 22 23 24
On tal	rio	Clxbridge	E VI	033
		orth St.		Y 24 MO. Sept YR 71
		886050		<u> </u>
	LOG	OF OVERBURDEN AND BEDR	ROCK MATERIALS (SEE INSTRUCTIONS)	47
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM TO
black	Topsoil			0' 2'
brown	clay	stones	Loose	2' 16'
Yellow	clay	boulders	hard	16' 45'
brown	sand	gravel	Loose	45' 55'
yellow	clay		soft	55' 63'
brown	Sand		coarse	63' 70
31 0000	89211100/60	astra lagyststastra	100055tda9111111111111111111111111111111111111	109701010111111111111111111111111111111
7	14 15	32	43 54 54 31-33 31-33	65 75 80 DIAMETER 34-38 LENGTH 39-40
WATER FOUND	KIND OF WATER	CASING & OPEN HOL	DEPTH - FEET (SLOT NO.)	06.000 04 FEET
10-13	RESH 3 □ SULPHUR 14	DIAM. MATERIAL THICKNESS INCHES 10-11 1 MSTEEL 12	TO MATERIAL AND TYPE Statuless S	DEPTH TO TOP 41-44 80 OF SCREEN OOG 6
0005	SALTY 4 ☐ MINERAL FRESH 3 ☐ SULPHUR 19	2 GALVANIZED ./88	5 64	SEALING RECORD
20-23	SALTY 4 MINERAL 24 FRESH 3 SULPHUR	06 4 □ OPEN HOLE 17-18 1 □ STEEL 19 2 □ GALVANIZED	20-23 DEPTH SET AT - FEET	AL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
25-28	SALTY 4 MINERAL FRESH 3 SULPHUR 29	3 □ CONCRETE 4 □ OPEN HOLE	10-13 14-17	
2 2	SALTY 4 MINERAL FRESH 3 SULPHUR 34 80	24-25 ! ☐ STEEL 26 2 ☐ GALVANIZED	27-30 18-21 22-25	
	SALTY 4 MINERAL	3 CONCRETE 4 OPEN HOLE	26-29 30-33 80	
71 PUMPING TEST METH	2 BAILER 0009	11-14 DURATION OF PUMPING 15-16 00 17-18 GPM 03 HOURS 00 MINS.	,	
STATIC LEVEL	WATER LEVEL 25 END OF WATER LE	VELS DURING 1 PUMPING 2 RECOVERY	IN DIAGRAM BELOW SHOW DISTANCES OF W LOT LINE. INDICATE NORTH BY ARROW.	ELL FROM ROAD AND
7 7 19-21		30 MINUTES 45 MINUTES 32-34 022 35-37		wells o
Z IF FLOWING, GIVE RATE	FEET FEET 38-41 PUMP INTAKE SET	AT WATER AT END OF TEST 42	- 25mi.	> 165
F FLOWING, GIVE RATE RECOMMENDED PUMP		43-45 RECOMMENDED 46-49	Nor	th 572
SHALLOW 50-53	DO. 2 GPM./FT. SPECIFIC	FEET PUMPING COOR GPM.	The state of the s	-
	54 1 WATER SUPPLY	5 ABANDONED, INSUFFICIENT SUPPLY	$\mathbf{A} = \mathbf{A} \mathbf{A} \mathbf{A} \mathbf{A} \mathbf{A} \mathbf{A} \mathbf{A} \mathbf{A}$	/
FINAL STATUS	2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE	6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED		. 32
OF WELL	DOMESTIC	5 COMMERCIAL	4 401	
WATER USE	3 T IRRIGATION	6 MUNICIPAL 7 PUBLIC SUPPLY 8 COOLING OR AIR CONDITIONING	207	3/ //
	□ OTHER	8 COOLING OR AIR CONDITIONING 9 NOT USED		/
METHOD	1 CABLE TOOL 2 ROTARY (CONVENTION			/
OF DRILLING	3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION	8 ☐ JETTING 9 ☐ DRIVING		/
NAME OF WELL CO	ONTRACTOR	LICENCE NUMBER	DATA 58 CONTRACTOR 59-62 DATE	
O ADDRESS	Sander De	Milling 4743	SOURCE / 4743 3	01171
& Bax 8	154 Uybr	dge Untario	3 Feb. 7/7/	J.B.
NAME OF DRILLER	Sunder	1 LICENCE NUMBER 4743	1 1 3	P/J.O.
SIGNATURE OF COL	Auctor	DAY MO NAV. YR 7	CSS	S.88 WI
OWRC CO	PY			





The Ontario Water Resources Commission Act 3/b/3E

WATER	WEL	L RE	CORD

Water	r management ir	Ontario 1. PRINT ONLY IN SE 2. CHECK X CORRE	CT BOX WHERE APPLICABLE	1 2	460532	10	CON	22 23 24 LOT 25-27
COUNT	TY OR D	t i a	TOWNSHIP, BOROLOM CH	La C	3	9 CON., BLOCK, TARAST, SUR	YL	032
			1/	P.O BOX	NORT	- 4 CF 6	DATE COMPLETED A DAY 18 MO. 6	18 yr 72
			86	0001 18	10925	RC. BASIN CODE	<u> </u>	<u>iv</u>
1 2		10 / 12	G OF OVERBURDEN	AND BEDROC	K MATERIA	30 31		47
GEN	IERAL COLOUR	MOST	OTHER MAT		T TOTAL	GENERAL DESCRIPTION	DEP	TH - FEET
-		COMMON MATERIAL	1 Tours				0	45
		class	Sand	1			45	72
		sand			w	ter bearing	72	76
						<i>d</i>	'	
_								
_	-							
								-
	<u></u>							
-								
-								
	`							~
31	004	5 105/2 1 1007	2 195128 1 10076	28 11				
32		14 15 21	32	43		54	65	75 80
41	WAT	ER RECORD	51 CASING & C	PEN HOLE F	RECORD	SIZE(S) OF OPENING (SLOT NO.)	06.000	8 LENGTH 39-40
A1	T - FEET 13	KIND OF WATER FRESH 3 SULPHUR 14	DIAM. MATERIAL INCHES 1.	THICKNESS INCHES FROM	TO [3-16]	MATERIAL AND TYPE	DEPTH TO TO	OP 41-44 80
17	ω	SALTY 4 MINERAL FRESH 3 SULPHUR	2 GALVANIZED	188 0	007 23-16		& SEALING	PECOPO
-	20-23	SALTY 4 MINERAL FRESH 3 SULPHUR 24	06 4 □ OPEN HOLE	9	2D-23	DEPTH SET AT - FEET	AATERIAL AND TYPE	(CEMENT GROUT,
_	2 [SALTY 4 MINERAL	2 ☐ GALVANIZED 3 ☐ CONCRETE DPEN HOLE	À	2 0	FROM TO 10-13 14-17		
_	2 [SALTY 4 MINERAL	24-25 1 STEEL 2	6	27-30	18-21 22-25		
	2 [FRESH 3 SULPHUR 34 80	3 ☐ CONCRETE 4 ☐ OPEN HOLE			26-29 30-33 80		
71	UMPING TEST ME	THOD 10 PUMPING RATE	S 15.	16 17-18		LOCATION	OF WELL	
	STATIC LEVEL	WATER LEVEL 25	LEVELS DIIPING	PUMPING PECOVERY		DIAGRAM BELOW SHOW DISTANCES LINE. INDICATE NORTH BY ARRO		4D
HES	19-2			60 MINUTES	MI	المام ما دلا	04a . 7	
121	IF FLOWING,	FEET PUMP INTAKE	SET AT WATER AT END	OF TEST 42		North	SIRECT	# 4
<u>-</u>	RECOMMENDED PU		FEET 1 CLEAR 43-45 RECOMMENDED		AIK	77 m. > 0		
2		V DEEP SETTING		15 GPM.		~ ×		
		54 1 WATER SUPPLY	5 ABANDONED, INSU	IEEICIENT SIIDDI V	2 5		K	7
	FINAL	2 ☐ OBSERVATION WEI			7 7	40132	K	´
	OF WELL	4 ☐ RECHARGE WELL 55-56 1 M DOMESTIC	5 COMMERCIAL		2 12	111	W	
	WATER	2 STOCK 3 IRRIGATION	6 MUNICIPAL 7 PUBLIC SUPPLY		4	V	PA	
	USE O	4 INDUSTRIAL OTHER	8 COOLING OR AIR CON	i ($-\prod V$	107	32	VII
	METHOD	1 CABLE TOOL 2 ROTARY (CONVENT	6 BORING TIONAL) 7 DIAMOND			LOT	3/	
	OF DRILLING	F (A TOTARY (REVERSE 4 □ ROTARY (AIR)				-	,	
	NAME OF WELL	5 AIR PERCUSSION	L	CENCE NUMBER	DRILLERS REMARI		DATE RECEIVED	63-68 80
20	ADDRESS	Ison Water	Well Ital	5459	SOURCE DATE OF INSPE	/ 5459	13017	(3
V V	R.R	#2 Born	Ley		MAR	160	·	J.B.
Z	RAME OF DRILLE	Lauder		CENCE NUMBER	REMARKS:	/		P/J.B.
8	SIGNATURE OF	CONTRACTOR	SUBMISSION DATE DAY / 2 MO	01 73	LOT	556	CSS.S8	W1/5.13
	MARKET STATE	CONTRACTOR	1=,		F-0,0			-/

1001216/05 1 1 1 100403/05/12 1 10063/21/13/218 1 1 1006/57/25 1 1 1 1007/02/25/1/1 1 1 1 1 1

CASING & OPEN HOLE RECORD

188

PUMPING

RECOVERY

DEPTH

0

0068

61

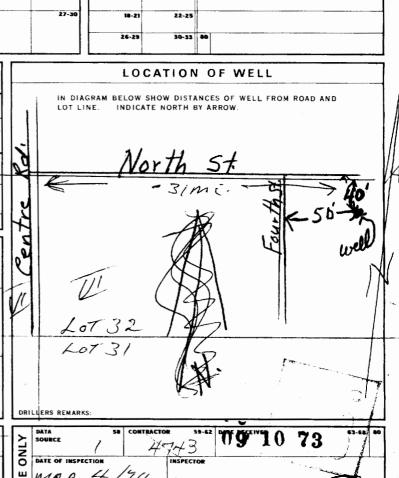
DEPTH SET AT - FEET

31D/3E

FROM 0

22

40



PLUGGING & SEALING RECORD

MATERIAL AND TYPE

PIB.B.

FORM 7

31

32

(41)

0065- 20

WATER FOUND AT - FEET

WATER RECORD

KIND OF WATER

1 ☐ FRESH 3 ☐ SULPHUR

2 SALTY 4 MINERAL

1 FRESH 3 SULPHUR
2 SALTY 4 MINERAL

FRESH 3 SULPHUR
SALTY 4 MINERAL

1 | FRESH 3 | SULPHUR

2 D BAILER

1 | FRESH

2 | SALTY

SHALLOW TEEP

1 - PUMP

STATIC

FINAL

STATUS

OF WELL

WATER

USE

3 SULPHUR

4 | MINERAL

4 | MINERAL

WATER SUPPLY

3 TEST HOLE

1 DOMESTIC z 🗌 STOCK

IRRIGATION
INDUSTRIAL

2 OBSERVATION WELL

☐ OTHER

4 T RECHARGE WELL

0008

PUMP SETTING 050

WATER LEVELS DURING

15 MINUTES | 30 MINUTES 46-28 FEET Q

(51

1
☐ STEEL
2 ☐ GALVANIZED

CONCRETE
OPEN HOLE

2 GALVANIZED CONCRETE

4 D OPEN HOLE

3 GALVANIZED

4 OPEN HOL

FEET RATE 0008

■ ABANDONED, POOR QUALITY

7 UNFINISHED

5 COMMERCIAL

☐ PUBLIC SUPPLY

■ MUNICIPAL

5 ABANDONED. INSUFFICIENT SUPPLY

■ □ NOT USED.

1 🗌 STEEL

24-25 1 STEEL

29-31

MINISTRY OF THE ENVIRONMENT 3/0/3 The Ontario Water Resources Act WELL RECORD 1. PRINT ONLY IN SPACES PROVIDED 2. CHECK ☑ CORRECT BOX WHERE APPLICABLE TOWNSHIP, BORDUGE DATE COMPLETED мо. LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) MOST COMMON MATERIAL GENERAL DESCRIPTION GENERAL COLOUR OTHER MATERIALS то 0 20 lai 46 46' 002920511 0046305111 0052211111 CASING & OPEN HOLE RECORD WATER RECORD 51 #050 OG · SO INCHES KIND OF WATER MATERIAL 1 TRESH 3 SULPHUR 2 SALTY 4 MINERAL 3 🔲 SULPHUR 004 47 IAG. 1 FRESH 3 SULPHUR 2 SALTY 4 MINERAL 3 CONCRETE 4 OPEN HOLE **PLUGGING & SEALING RECORD** 61 0047 Z 🗆 SALTY 1 STEEL MATERIAL AND TYPE 1 | FRESH 3 | SULPHUR 2 | SALTY 4 | MINERAL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 25-28 3 SULPHUR 27.30 1 ☐ STEEL SALTY 4 | MINERAL Z GALVANIZED 3 SULPHUR 1 | FRESH 3 CONCRETE 30-33 LOCATION OF WELL 00 1 D PUMP IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. WATER LEVELS DURING 10734 £100 in PUMP SETTING 020 FEET GPM./FT. SPECIFIC CAPACITY FEET S ABANDONED, INSUFFICIENT SUPPLY FINAL 6 ABANDONED, POOR QUALITY OBSERVATION WELL **STATUS** 7 UNFINISHED TEST HOLE OF WELL RECHARGE WELL DOMESTIC 5 COMMERCIAL WATER 3 | IRRIGATION 7 D PUBLIC SUPPLY USE () COOLING OR AIR CONDITIONING INDUSTRIAL ☐ OTHER 9 D NOT USED CABLE TOOL ROTARY (CONVENTIONAL) ROTARY (REVERSE) 5 BORING **METHOD** 7 DIAMOND ROTARY (AIR) 9 DRIVING DRILLING DATE RESIVED 1275 OFFICE USE ONLY 4743 C 52.3

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT The Ontario Water Resources Act R WELL RECORD 31036 19608 4606657 1 2. CHECK X CORRECT BOX WHERE APPLICABLE Durham 0,900 LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS) DEPTH - FEET GENERAL DESCRIPTION OTHER MATERIALS GENERAL COLOUR COMMON MATERIAL 0 â 2 35 *3*5 52 OWRC 003560512 0052211 11 32 **CASING & OPEN HOLE RECORD** WATER RECORD 51 SCREEN #020 05 06.000 DEPTH - FEET KINE OF WATER MATERIAL AND TYPE 0049 FRESH 3 SULPHUR STEEL 2 SALTY 4 MINERAL 2 ☐ GALVANIZED 3 ☐ CONCRETE 0042 .122 1 TRESH 3 SULPHUR PLUGGING & SEALING RECORD 61 2 SALTY 4 MINERAL 4 G OPEN HOLE - FEE1 1 [] STEEL FRESH 3 SULPHUR SALTY 4 MINERAL 2 GALVANIZED 3 CONCRETE 4 🗌 OPEN HOLE 1 | FRESH 3 | SULPHUR 2 SALTY 4 MINERAL 1 🗍 STEEL 18-21 22.25 1 TRESH 3 SULPHUR 30-33 3 CONCRETE 4 DPEN HOL 2 SALTY 4 MINERAL LOCATION OF WELL 0002 007-18 PUMPING IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW. WATER LEVEL END OF PUMPING 045 X-50 .3 Mi < 04 5 29.31 04 6 FEET LoT 33 PUMP O FEET RATE DOO 8 SHALLOW DEEP GPM. / FT. SPECIFIC CAPACITY 1 WATER SUPPLY 5 ABANDONED, INSUFFICIENT SUPPLY FINAL 6 ABANDONED POOR QUALITY **STATUS** 3 TEST HOLE 4 RECHARGE WELL 7 🖺 UNFINISHED OF WELL 1 DOMESTIC 2 STOCK 3 IRRIGATION 6 MUNICIPAL WATER 7 DUBLIC SUPPLY USE D 8 COOLING OR AIR CONDITIONING 4 🔲 INDUSTRIAL OTHER 9 🗌 NOT USED 6 DBORING 7 DIAMOND I P CABLE TOOL **METHOD** Z ROTARY (CONVENTIONAL) ROTARY (REVERSE) OF 8 . JETTING ROTARY (AIR) **DRILLING** DRILLERS REMARKS S459 DATE 201511 ONLY 5459 OFFICE USE May 1/27 ar SUBMISSION DATE

CSS.S8

WΙ FORM 7 MOE 07-091 Ministry of the Environment

A 091436 Measurements recorded in: Metric Imperial

Well Record

Regulation 903 Ontario Water Resources Act Page of

Address of Well L	ocation (Street Num	nber/Name)		To	Wyship UXBRIOGE	99ريانا		Concessio	on 1	
County/District/N UTM Coordinates NAD 8 3	Iunicipality AM Zone Easting		rthing 6 2	M	ty/Town/Village UXBRIDGE unicipal Plan and Suble	E tot Number	Ont:	ario	Postal Code	
		als/Abando	V Water	ALC: UNKNOWN	d see instructions on the				Bright	MINUE
General Colour	Most Comm	non Material		Othe	er Materials	General Descript	on		From	oth (m/ft) To
	NATIVE F	FILL							0	2
	BENTONITE	51116	ev l						2	27.4
	CLEAN SI	2010							27.4	28.6
	C Carrier 5)									
Depth Set at (r		Annular Type of Sea	lant Used		Volume Placed	Results of After test of well yield, water was:	Di	raw Down	R	Recovery
From	Го	(Material an	d Type)		(m³/ft³)	☐ Clear and sand free ☐ Other, specify	Time (min)	Water Lev (m/ft)	vel Time (min)	Water Level (m/ft)
				-		If pumping discontinued, give reas	on: Static			
							1		1	
						Pump intake set at (m/ft)	2	-	2	
									1	
Method	of Construction			Well Us	e	Pumping rate (I/min / GPM)	3		3	
Cable Tool	Diamond		-	Commer		Duration of pumping	4		4	
Rotary (Conve		- Allera	mestic estock	Municipa Test Hol		hrs + min	5		5	
Boring Air percussion	☐ Digging	I Irrig		Cooling	& Air Conditioning	Final water level end of pumping (/	n/ft) 10		10	
Air percussion Other, specify			ner, specify			If flowing give rate (I/min / GPM)	15		15	
	Construction R	ecord - Cas			Status of Well		20		20	
	en Hole OR Material Ilvanized, Fibreglass,	Wall Thickness	Depth (n		☐ Water Supply ☐ Replacement Well	Recommended pump depth (m/			25	
	ncrete, Plastic, Steel)	(cm/in)	From	То	☐ Test Hole	Recommended pump rate	710			<u> </u>
15.9 5	TEEL	.635	1	28.6	Recharge Well Dewatering Well	(Vmin / GPM)	30		30	
					Observation and/or	Well production (l/min / GPM)	40		40	
			100		Monitoring Hole Alteration	Disinfected?	50		50	
					(Construction) Abandoned,	Yes No	60		60	
	Construction R	ecord - Scre	en	anumi	Insufficient Supply Abandoned, Poor	Map of	Well Lo	cation	main	
Outside Diameter (am/in) (Plas	Material stic, Galvanized, Steel)	Slot No.	Depth (n	n/ft) To	Water Quality Abandoned, other, specify NOT WUSE Other, specify	Please provide a map below follow	ing instruction (%)		690m	12
(m/ft) Water found at (m/ft) Water found at (m/ft)	Water De Depth Kind of Wate Gas Other, spe Depth Kind of Wate Gas Other, spe Depth Kind of Wate Gas Other, spe Well Contractor Of Well Contractor	er: Fresh ecify ecify ecify r: Fresh ecify ecify ecify	Untested	Dept From	ole Diameter h (m/ft) Diameter To (cm/in) ition Il Contractor's Licence No.	CENTRE RO BROCK	ST.	780m	C	Ith Concession Uxbridge
045	The state of the s	ime) VE	SERVICE	Mu	URHAM	Comments: Well owner's Date Package Deli		Min	istry Us	se Only
905 85	o. (inc. area code) Na 23888 Joence No. Signature 48	ARMSTK of Technicia	RONG	SceT ractor Dat	T	information package delivered Date Work Completed No.		Audit No.	10! N 2 8 7	5317 2011

Ontario Ministry of the Environment	Well Tag No. (Place Sticker and/or Print Belo		Well Record
Measurements recorded in: Metric mperial		Regulation 903 Ontario	age of
Well Owner's Information Customer		•	
First Name Last Name / Organization	C-ave I to	lress	☐ Well Constructed
Home land Development Mailing Address (Street Number/Name)	Group Ltd. Municipality Province	Postal Code Teleph	by Well Owner one No. (inc. area code)
15 Wyldewood Court	Port Perry On		5985131517
Well Location Address of Well Location (Street Number/Name)	Tauashia	Lat. Conso	
246 Main St NORTH	Township Uxbridge	Lot Conce	6
County/District/Municipality	City/Town/Village	Province	Postal Code
UTM Coordinates Zone Easting Northing	Municipal Plan and Sublot Number	Ontario Other	
NAD 8 3 1 7 6 4 9 8 9 8 4 8 8 6 7	1/19	eta.	
Overburden and Bedrock Materials/Abandonment Sealing General Colour Most Common Material	ng Record (see instructions on the back of this form		Depth (m/ft)
Decomm. a 6in. Steel	Other Materials	General Description	From To
DECOMM. 4 6/N. 5/88/	cased arilled well	81 Fr deep	2
Washed Pea Gravel		· · · · · · · · · · · · · · · · · · ·	81 70
Bentonite Hole Plug/GR	Distriction of the Control		
clean Clay Fill	OUV MIX	The state of the s	10 0
Crear City 1111			70 0
Note: States 4FT. Chlor	inate and Pump St	andina Water K	emare Pina
Note: Static 4FT. Chlori Lines and 3 m. of	Casina Corp with	hale Plua	The volume,
	custing. cusp with	1000	
Annular Space		Results of Well Yield Test	ing
Depth Set at (m/ft) From To Type of Sealant Used (Material and Type)	Volume Placed After test of wel (m³/ft³) ☐ Clear and	yield, water was: Draw Dov	vn Recovery
See above	Other, spe	cify (min) (m	
	If pumping disc	ontinued, give reason: Static Level	
		1	
	Pump intake se	et at (<i>m/ft</i>) 2	2
Method of Construction	Woll Lies Pumping rate (V/min / GPM) 3	- 1 3 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Commercial Not used	4	4
	Municipal Dewatering Duration of pur	nping 5	5
☐ Boring ☐ Digging ☐ Irrigation ☐	Test fible Mornitoring	end of pumping (m/ft) 10	10
☐ Air percussion ☐ Industrial ☐ Other, specify ☐ Other, specify			
Construction Record - Casing	Status of Well	ate (I/min / GPM) 15	15
Inside Open Hole OR Material Wall Depth (<i>m</i> Diameter (Galvanized, Fibreglass, Thickness	D Bardanana A Mail	pump depth (m/ft) 20	20
(cm/in) Concrete, Plastic, Šteel) (cm/in) From	Test Hole Recommended	Numa rata	25
	Recharge Well ((/min / GPM)	30	30
	Observation and/or Monitoring Hole Well production	(l/min / GPM) 40	40
	☐ Alteration ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	50	50
	Abandoned, Yes N	60	60
Construction Record - Screen Outside	Insufficient Supply Abandoned, Poor	Map of Well Location	
Diameter (cm/in) Material Depth (m/ Cm/in) Clastic, Galvanized, Steel) Slot No. From	(ff) Water Quality Please provide a	map below following instructions on the	ne back.
	specify		1
	Other, specify	LE BROOK DR	IVE N
Water Details			
Water found at Depth Kind of Water: Fresh Untested	Hole Diameter Depth (m/ft) Diameter	Driveu	
(init) Gas Gother, specify	From To (cm/in)	Microso	CONTROL CONTRO
Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify		300	9 /
Nater found at Depth Kind of Water: Fresh Untested		8 11 THE	1 /5
(m/ft) Gas Other, specify		wal.	F
Well Contractor and Well Technician In Business Name of Well Contractor	formation Well Contractor's Licence No.		M. A.
2024257 Ontario Ltd.	4102		1 -
Business Address (Street Number/Name) 3661 Mt. Olbert Rd	Municipality Comments:		
Province Postal Code Business F-mail Address			
Bus. Telephone No. (inc. area code) Name of Well Technician (Last I	Nome First Name First		nistry Use Only
105418/643 Morre D	allia delivered	Y Y M M D D	154846
Vell Technician's Licence No. Signature of Technician and/or Contract	ctor Date Submitted Yes		
506E (2007/12) © Queen's Printer for Ontario, 2007	Del / B My BO VE No 5	4011 B 11/1 14 RECEIVA	EC 2 7 2013

Ontario	Ministry of the Environmen		Well Ta	g No. (Place Sticker a	nd/or Print Below)	Regulation	n 903 C			Record
Measurements recorded	d in: 🗌 Metric 🏌	Imperial						Page		of
Well Owner's Inform		tomer	-							
First Name		Organization	au t	Ermin 1To	E-mail Address					Constructed ell Owner
Home lan Mailing Address (Street N	Number/Name)	ewpine	CVCI	Group LTO	Province	Postal Code	- 1		No. (inc.	area code)
	dewood C	'ourt	Milanda complete peda e carace	Port Perry	ON	14942	B4 4	1050	785	3 157.
Well Location Address of Well Location	/Street Number/Name	a)		ownship		Lot		Concessio		
246 Mai	` 1	ORTH		UXbrid City/Town/Village	90	33		Concessio		
County/District/Municipal	lity		(City/Town/Village		·	Provin		Posta	Code
UTM Coordinates Zone .	Easting	Northing		ハスカイ Municipal Plan and Subl	i age.	THE COURT PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADD	Onta	ario		
المردي الراب	614981911	18867			Aireilaneachin, eile		Ou io			
Overburden and Bedro	ock Materials/Aband	lonment Seal	ling Reco		back of this form)				- A	11- / /6)
The second of the second	Most Common Materi			er Materials	and the second s	ral Description	<u> </u>		From	oth (m/ft)
DECOM A 51	H STEEL	EASED	DR	UED WELL	17FT DE	P	··			
					-				******************	
WASHED T							***************************************		17	14
BENTONITE	HOLE F	LUG (G	ROU	TMIX					14	7
CLEAN CLA	14 FILL						********************************		7	0
							***************************************	The state of the s		
				,						
NOTE: STA	TIC 3FT	CHOR	WA7	E AND POW	IP STAND	1266	JAT	ER	2 de	Dela-
				G. CAPWITH						
		r Space			F	Results of We	ell Yiel	d Testing		
Depth Set at (<i>m/ft</i>) From To	Type of Se (Material a	ealant Used and Type)		Volume Placed (m³/ft³)	After test of well yield,			w Down		ecovery Water Level
		hove.			Other, specify	ee	(min)	vvater Leve (m/ft)	(min)	vvater Level (m/ft)
		000			If pumping discontinue	d, give reason:	Static Level			
		<u>er Graff Fried.</u> Total Amerika					1		1	
					Pump intake set at (m	n/ft)	2		2	
							3			
Method of Const	A A CONTRACTOR OF THE STATE OF		Well Us	——————————————————————————————————————	Pumping rate (I/min / (ЭРМ)	3.11		3	
	☐ Diamond ☐ Pt ☐ Jetting ☐ Do		Commer Municipa		Duration of pumping		4		4	
Rotary (Reverse)	☐ Driving ☐ Li	vestock	Test Hole	☐ Monitoring		in	5		5	
☐ Air percussion		igation [_ Cooling &	& Air Conditioning	Final water level end of	pumping (m/ft)	10		10	
Other, specify		her, specify			If flowing give rate (I/m	in / GPM)	15		15	
Consti	ruction Record - Ca		(B)	Status of Well			20		20	
Diameter (Galvanized, F	ibreglass, Thickness	Depth (r	To	☐ Water Supply☐ Replacement Well	Recommended pump	depth (m/ft)	25		25	
Correcte, Flas	itic, Steel) (cm/in)			☐ Test Hole ☐ Recharge Well	Recommended pump	rate				
				☐ Recharge Well	(I/min / GPM)		30		30	
				Observation and/or Monitoring Hole	Well production (I/min /	(GPM)	40		40	
				☐ Alteration	Disinfected?		50		50	
				(Construction) Abandoned,	Yes No		60		60	
Const	ruction Record - Scre			Insufficient Supply Abandoned, Poor		Map of We	II Loca	tion		
Diameter (cm/in) Materia	zed, Steel) Slot No.	Depth (m		Water Quality Abandoned, other,	Please provide a map b	elow following ir	struction	ns on the ba	ick.	
(GIDNI)		110111	То	specify	MAPA	E BRO	nosk'	DR	1	11
				not in use □ Other, specify		E BRO		<i></i>	-	M
						WELL		346'		1
Vater found at Depth Kind	/ater Details			le Diameter			Drive	way	1	
(m/ft) Gas C		Untested	Depth From	(m/ft) Diameter To (cm/in)		WELL	N ax	1	Z	
Vater found at Depth Kind	of Water: Fresh	Untested					Thos			
(m/ft) Gas G	Other, specify								15	
Vater found at Depth Kind (m/ft) ☐ Gas ☐ C		Untested							1 2	
Well C	ontractor and Well	Technician In	formation						Mair	
usiness Name of Well Con	tractor			Contractor's Licence No.					3	
JOD 4257 Usiness Address (Street Nu	ON TARIO	LTD.	14	102					1	
3661 M+	umber/Name) CUbert k	21	Munic	cipality 0	Comments:					
rovince Postal	Code Business	∸⊖ E-mail Address	3	haron						
DN HOK	SINVO Sal	es@on-	tari	odrilling com	Well owner's Date Pac	kage Delivered		Ministr	y Use C	Only
us.Telephone No. (inc. area d	code) Name of Well Te	echnician (Last	Name, Fir	st Name)	nformation package	YATATE	A	ıdit No.		
/ell Technician's Licence No.	Signature of Technician	and/or Contra	ctor Date 9	Submitted C	delivered Date Wor	k Completed		Z 1	54	845
0099	Kaud	Moore	20		ZNO DOY	13/11/1	stt.	CSheekhaa		
506E (2007/12) © Queen's Prir	nter for Ontario, 2007			Ministry's Copy		12 19 19 11		DEC	27	2013 -



Ministry of the Environment and Climate Change

Imperial

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

Tag#: A 228051

Regulation 903 Ontario Water Resources Act
Page of

Address of Well Lo	ocation (Street Nun	nber/Name)	<u>1</u> T	ownship		Lot	Concess	ion	
20.	JORTH ST			UXBRIOGE		55 -	Į Į	6	
County/District/Mu	unicipality		C	ity/Town/Village			Province Ontario	Postal	Code Prich
UTM Coordinates	Zone Easting	Northing		Junicipal Plan and Sublo			Other		<u>" </u>
NAD 8 3	176496	2 2 2 48 8 1	2238	30 BLK 46	<u> </u>				
Overburden and General Colour		non Material	100 m to 100	rd \see instructions on the er Materials	**************************************	al Description			th (<i>m/ft</i>)
	141031 001111	moti macciai				<u> </u>	,	From	24
 	Ω				DAJEMENT.			7 GL	213
	OBNITON ITE							21.3	22.5
	JANU()			<u></u>				61.0	4.4.5
					A. P. L.				
						<u> </u>			
									
	,							····	
	***************************************				· · · · · · · · · · · · · · · · · · ·				
						LLUIG LEART	II Yield Testin	and the second description is a second description of the second description of the second description is a second description of the second description is a second description of the s	
Depth Set at (m	ı/ft)	Annular Space Type of Sealant Us	ed	Volume Placed	After test of well yield, w	vater was:	Draw Dowr	*****************	есочегу
From To	, I	(Material and Type)		(m³/ft³)	☐ Clear and sand fre ☐ Other, specify	ee	Time Water Le	, t	Water Level (m/ft)
					If pumping discontinued	i. give reason:	Static		***************************************
<u></u>			,			, 9	Level 1	1	
					Pump intake set at (m/fi	})			
						7	2	2	
	f Construction		Well Us		Pumping rate (I/min / GF	PM)	3	3	
Cable Tool	☐ Diamond	=	Commer		Duration of pumping		4	4	
☐ Rotary (Convent☐ Rotary (Reverse	· <u> </u>	☐ Domestic☐ Livestock	☐ Municipa ☐ Test Hok		hrs + m	in	5	5	
Boring	☐ Digging	Imigation	_	& Air Conditioning	Final water level end of	pumping (m/ft)	10	10	
Air percussion Other, specify		☐ Industrial☐ Other, spec	ify		If flowing give rate (Vmin	/CDMA	15	15	
	Construction R	ecord - Casing		Status of Well	I in nowing give rate (vitili)	7 GEWIJ	20	20	
	n Hole OR Material vanized, Fibreglass,	Wall C	epth (<i>m/ft</i>)	☐ Water Supply	Recommended pump of	lepth <i>(m/ft)</i>			
	crete, Plastic, Steel)	(cm/in) From	т То	Replacement Well	Recommended pump re	ate .	25	25	
BAS	iem eut		2.4	Recharge Well Dewatering Well	(Vmin / GPM)	ale	30	30	
13.3 52		oG35 2.4	1	☐ Observation and/or	Well production (Vmin / 0	GPM)	40	40	
				Monitoring Hole☐ Alteration			50	50	
				(Construction) Abandoned,	Disinfected? Yes No		60	60	
::::::::::::::::::::::::::::::::::::::	Construction R	ecord - Screen		Insufficient Supply		Map of We	ell Location		
Outside	Material	Ī	epth (<i>m/ft</i>)	☐ Abandoned, Poor Water Quality	Please provide a map			n the back	•
Diameter (Plasti (cm/in)	ic, Galvanized, Steel)	Slot No. Fron	п То	Abandoned, other, specify				71	
				NOT USED				i V	
				Other, specify				, 0	
	Water Det	tails		ole Diameter			······································		
		: Fresh Unte	sted Dept From	h (<i>m/ft</i>) Diameter To (<i>cm/in</i>)	20m 804		1754 ×	n ***	3
	Gas Other, <i>spe</i>	cify To FreshUnter				***************************************	— indica		
	Gas Other, spe				House ->				
	ļ	: Fresh Unte	ted						
(m/ft)	Gas Other, <i>spe</i>					,	Youngst.		
Business Name of		or and Well Techni	<u>e proceso de la la colonida del lel proceso de la colonida de la colonida de la colonida de la colonida de la</u>	on Il Contractor's Licence No.					
DY5 (CLL SERVICT		7 3 8 6		C	Oいできるういい	7 1	
Business Address	(Street Number/Na			nicipality	Comments:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		_	
Province	Postal Code	<u> </u>	Address	14KHAM			POFUE		J
02	LAPUR		A.		Well owner's Date Pa	ckage Delivere	d Mir	istry Use	Only
	(inc. area code) Nă	me of Well Technicia	an (Last Name, I	First Name) -	information package	1803	Audit No	Zon Command	1257
Well Technician's Lic	ence No. Signature	TRM51 RUVC gf Technician and/o	r Contractor Date	e Submitted	delivered Date Wo	ork Completed		8 & V - 4 -	0040
171714	8 200	1 Dinorto	´ . ।उ।	0180016	DN0 201	िश्विश्विश्व	29 Received	-	2018
0506E (2014/11)		- Comment of the comm	<u> </u>	Ministry's Copy		· · · · · · · · · · · · · · · · · · ·	© Quee	n's Printer fo	r Ontario, 2014



Source: Compiled from Google Earth. Aerial photo dated October, 2019

Scale:

Refer to Scale Bar Coordinate System: NAD 1983 UTM Zone 17





Geotechnical and Hydrogeologic Investigation Mason Homes Limited Proposed Residential Development Centre Road Phase 2, Uxbridge

Well Survey Locations

11223795-01

March, 2021

Appendix B.5

APPENDIX B.6: WATER WELL INFORMATION SURVEY

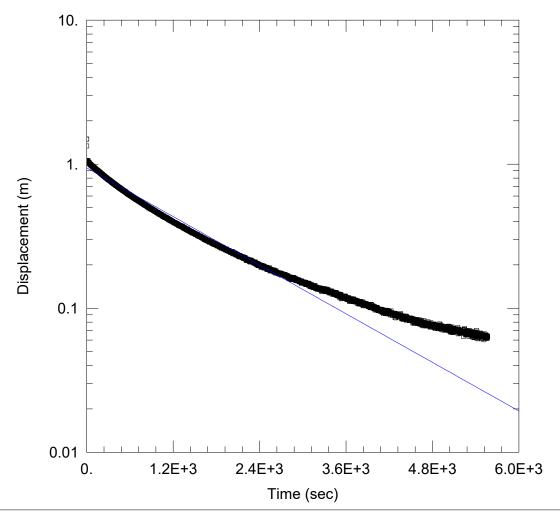
PROJECT: 11223795-01

LOCATION: Centre Road Phase 2, Uxbridge, ON

Address	Well ID for Map		Northing (m)	Well Type	Top of Well (m)	Water Level (m)	Depth (m)	Quality	Quantity	Comments
7609 Centre Road	L-1	648903.8	4887001.2	Drilled		1	1	1		Resident not home, steel drilled well casing observed.
7639 Centre Road	L-2	648867.32	4887118.81	Dug						Resident not home. Concrete dug well casing observed.
7555 Centre Road	L-3	649019.48	4886414.83	Drilled						Redsident not home, steel drilled well casing observed.
39 Oakside Drive	L-4	649466.25	4886330.08			1				Resident not home. No well observed. Fire hydrant observed outside home.
45 Oakside Drive	L-5	649525.87	4886359.11							Resident not home. No well observed. Fire hydrant observed outside home.
623 Ball Road	L-6	648304.48	4887227.73	Dug			10.5	No known issues	No known issues	Homeowner stated the dug well is located on site. No Access to well.

March 10, 2021

Appendix C Hydraulic Conductivity Data



BH-1 FALLING HEAD TEST

Data Set: G:\...\BH-1 Falling Head Test.aqt

Date: 03/11/21 Time: 14:13:44

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-1

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 4.27 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-1)

Initial Displacement: 1.492 m

Total Well Penetration Depth: 4.27 m

Casing Radius: 0.0254 m

Static Water Column Height: 4.27 m

Screen Length: 1.52 m Well Radius: 0.0254 m

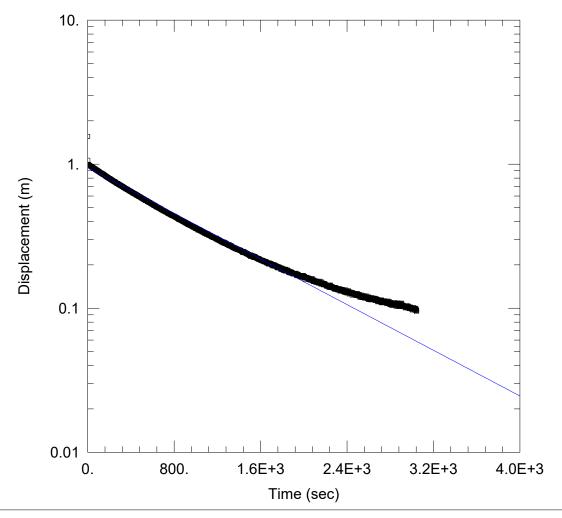
SOLUTION

Aquifer Model: Confined

K = 4.872E-5 cm/sec

Solution Method: Bouwer-Rice

y0 = 0.9409 m



BH-1 RISING HEAD TEST

Data Set: G:\...\BH-1 Rising Head Test.aqt

Date: 03/11/21 Time: 14:14:31

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-1

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 4.27 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-1)

Initial Displacement: 1.558 m

Total Well Penetration Depth: 4.27 m

Casing Radius: 0.0254 m

Static Water Column Height: 4.27 m

Screen Length: 1.52 m Well Radius: 0.0254 m

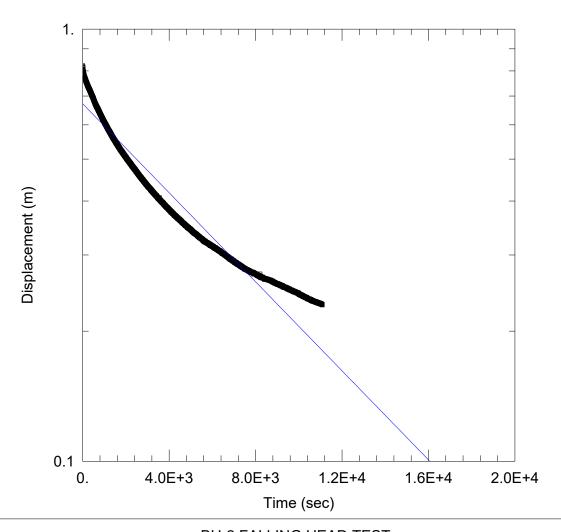
SOLUTION

Aquifer Model: Confined

K = 6.866E-5 cm/sec

Solution Method: Bouwer-Rice

y0 = 0.9464 m



BH-2 FALLING HEAD TEST

Data Set: G:\...\BH-2 Falling Head Test.aqt

Date: 03/11/21 Time: 14:07:19

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-2

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 0.56 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-2)

Initial Displacement: 0.8224 m

Total Well Penetration Depth: 1.52 m

Casing Radius: 0.0254 m

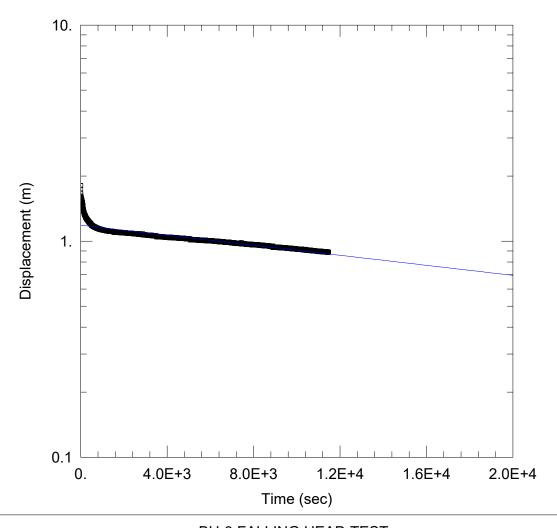
Static Water Column Height: 1. m

Screen Length: 1.52 m Well Radius: 0.02654 m

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 1.819E-5 cm/sec y0 = 0.6717 m



BH-3 FALLING HEAD TEST

Data Set: G:\...\BH-3 Falling Head Test.aqt

Date: 03/11/21 Time: 14:09:35

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-3

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 1.81 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-3)

Initial Displacement: 1.81 m

Total Well Penetration Depth: 1.52 m

Casing Radius: 0.0254 m

Static Water Column Height: 0. m

Screen Length: 1.52 m Well Radius: 0.0254 m

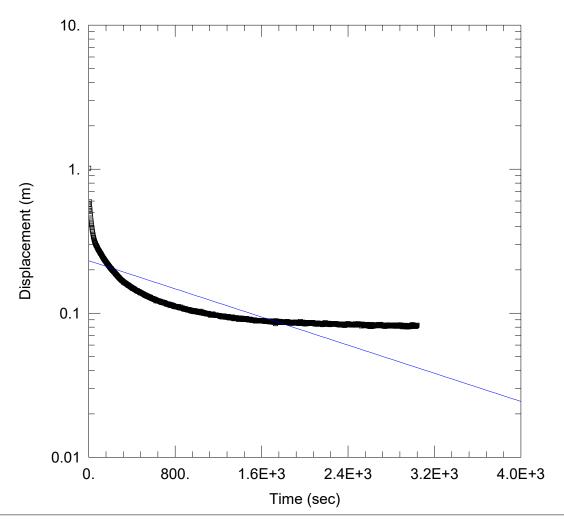
SOLUTION

Aquifer Model: Confined

K = 1.534E-6 cm/sec

Solution Method: Bouwer-Rice

y0 = 1.186 m



BH-4 FALLING HEAD TEST

Data Set: G:\...\BH-4 Falling Head Test.aqt

Date: 03/11/21 Time: 14:11:50

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-4

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 3.74 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-4)

Initial Displacement: 1.014 m

Total Well Penetration Depth: 3.74 m

Casing Radius: 0.0254 m

Static Water Column Height: 3.74 m

Screen Length: 3.04 m Well Radius: 0.0254 m

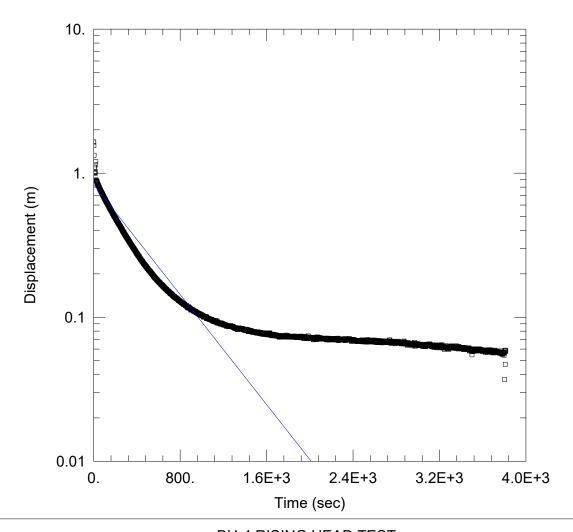
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.14E-5 cm/sec

y0 = 0.2313 m



BH-4 RISING HEAD TEST

Data Set: G:\...\BH-4 Rising Head Test.aqt

Date: 03/11/21 Time: 14:12:57

PROJECT INFORMATION

Company: GHD

Client: Mason Homes Limited

Project: 11223795-01

Location: Centre Road Phase 2, Uxbridge

Test Well: BH-4

Test Date: March 10, 2021

AQUIFER DATA

Saturated Thickness: 3.74 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH-4)

Initial Displacement: 1.644 m

Total Well Penetration Depth: 3.74 m

Casing Radius: 0.0254 m

Static Water Column Height: 3.74 m

Screen Length: 3.04 m Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Confined

K = 8.361E-5 cm/sec

Solution Method: Bouwer-Rice

y0 = 0.8326 m

Appendix D Analytical Data



CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G89204 REPORT No. B21-06975

Report To:

GHD Limited

455 Phillip Street,

Waterloo Ontario N2L 3X2 Canada

Attention: Wesley Moore

DATE RECEIVED: 12-Mar-21
DATE REPORTED: 18-Mar-21

SAMPLE MATRIX: Groundwater

Caduceon Environmental Laboratories

110 West Beaver Creek Rd Unit 14

Richmond Hill ON L4B 1J9

Tel: 289-475-5442 Fax: 289-562-1963

JOB/PROJECT NO.: 11223795-01

P.O. NUMBER: 73522789

WATERWORKS NO.

			Client I.D.		BH - 1	BH - 2	BH - 4	
			Sample I.D.		B21-06975-1	B21-06975-2	B21-06975-3	
			Date Collect	ed	10-Mar-21	10-Mar-21	10-Mar-21	
Parameter	Units	R.L.	Reference Date/Site Method Analyzed					
pH @25°C	pH Units		SM 4500H	15-Mar-21/O	7.81	7.61	7.92	
Conductivity @25°C	µmho/cm	1	SM 2510B	15-Mar-21/O	926	1070	652	
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	15-Mar-21/O	255	357	177	
Hardness (as CaCO3)	mg/L	1	SM 3120	16-Mar-21/O	456	482	309	
Chloride	mg/L	0.5	SM4110C	16-Mar-21/O	66.7	32.5	59.3	
Fluoride	mg/L	0.1	SM4110C	16-Mar-21/O	< 0.1	< 0.1	< 0.1	
Nitrite (N)	mg/L	0.1	SM4110C	16-Mar-21/O	0.1	< 0.1	< 0.1	
Nitrate (N)	mg/L	0.1	SM4110C	16-Mar-21/O	14.3	11.2	9.8	
Sulphate	mg/L	1	SM4110C	16-Mar-21/O	69	122	22	
Colour	TCU	2	SM 2120C	17-Mar-21/O	< 2	< 2	< 2	
Turbidity	NTU	0.1	SM 2130	17-Mar-21/O	42.7	249	332	
Ammonia (N)-Total	mg/L	0.01	SM4500- NH3-H	15-Mar-21/K	0.10	0.11	0.06	
o-Phosphate (P)	mg/L	0.002	PE4500-S	15-Mar-21/K	< 0.002	0.005	0.007	
Potassium	mg/L	0.1	SM 3120	16-Mar-21/O	2.5	1.6	1.4	
Sodium	mg/L	0.2	SM 3120	16-Mar-21/O	22.9	81.2	14.3	
Calcium	mg/L	0.02	SM 3120	16-Mar-21/O	157	166	86.9	
Magnesium	mg/L	0.02	SM 3120	16-Mar-21/O	15.5	16.2	22.3	
Iron	mg/L	0.005	SM 3120	16-Mar-21/O	< 0.005	0.021	< 0.005	
Copper	mg/L	0.002	SM 3120	16-Mar-21/O	< 0.002	< 0.002	< 0.002	
Manganese	mg/L	0.001	SM 3120	16-Mar-21/O	0.208	0.155	0.024	
Zinc	mg/L	0.005	SM 3120	16-Mar-21/O	< 0.005	0.011	< 0.005	
Anion Sum	meq/L		Calc.	18-Mar-21/O	9.44	11.4	6.38	
Cation Sum	meq/L		Calc.	18-Mar-21/O	10.2	13.2	6.83	
% Difference	%		Calc.	18-Mar-21/O	3.79	7.30	3.43	

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an * Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke Lab Manager



CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G89204 REPORT No. B21-06975

Report To:

GHD Limited

455 Phillip Street,

Waterloo Ontario N2L 3X2 Canada

Attention: Wesley Moore

DATE RECEIVED: 12-Mar-21
DATE REPORTED: 18-Mar-21

SAMPLE MATRIX: Groundwater

Caduceon Environmental Laboratories

110 West Beaver Creek Rd Unit 14

Richmond Hill ON L4B 1J9

Tel: 289-475-5442 Fax: 289-562-1963

dx: 200 002 1000

JOB/PROJECT NO.: 11223795-01

P.O. NUMBER: 73522789

WATERWORKS NO.

			Client I.D.		BH - 1	BH - 2	BH - 4	
			Sample I.D.		B21-06975-1	B21-06975-2	B21-06975-3	
			Date Collect	ed	10-Mar-21	10-Mar-21	10-Mar-21	
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Ion Ratio	AS/CS		Calc.	18-Mar-21/O	0.927	0.864	0.934	
Sodium Adsorption Ratio	-		Calc.	18-Mar-21/O	0.467	1.61	0.354	
TDS(ion sum calc.)	mg/L	1	Calc.	18-Mar-21/O	551	684	356	
Conductivity (calc.)	µmho/cm		Calc.	18-Mar-21/O	951	1116	664	
TDS(calc.)/EC(actual)	-		Calc.	18-Mar-21/O	0.595	0.637	0.547	
EC(calc.)/EC(actual)	-		Calc.	18-Mar-21/O	1.03	1.04	1.02	
Langelier Index(25°C)	S.I.		Calc.	18-Mar-21/O	0.939	0.901	0.655	

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an * Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke Lab Manager

Appendix E Water Balance Calculations

Appendix E.1

Revised Water Budget (Thornthwaite Method) - Average Values*

Weather Station: Udora

Climate Stati	Climate Station: 6119055		262 masl	Distance Awa	y:	: ~ 16.3 km					
Month	Mean	Heat	Unadjusted	Daylight	Adjusted	Total					
	Temperature	Index	Potential ET	Correction	ET	Precipitation					
	(°C)		(mm)	Factor	(mm)	(mm)					
January	-7	0	0	0.78	0	64.9					
February	-6.6	0	0	0.88	0	45.9					
March	-1.3	0	0	0.99	0	53.1					
April	5.7	1.22	26.2	1.12	29.4	67.9					
May	12.2	3.86	58.9	1.22	71.8	82.1					
June	18	6.95	89.0	1.28	114.0	106.6					
July	19.9	8.10	99.1	1.25	123.8	86.4					
August	19.3	7.73	95.9	1.15	110.3	73.9					
September	15.1	5.33	73.9	1.04	76.8	87.3					
October	8.6	2.27	40.6	0.92	37.4	74.9					
November	2.4	0.33	10.5	0.8	8.4	83.2					
December	-4	0	0	0.76	0	60					
TOTAL	6.9	35.8	494.0		571.8	886.2					
	TOTAL WATER SURPLUS: 314.4 mm										

Notes:

^{*}Average values of precipitation were used. Average values of temperature were also used.

Appendix E.2Water Budget Pre-Development

	PRE-DEVELOPMENT SITE										
Catchment Designation	Agricultural	Naturalized	Forested	Е	xisting Re	sidential	TOTAL				
5	Area	Areas	Area			Gravel Drive					
Area (m²)	89320	28140	2060	10715	430	335	131000				
Pervious Area (m²)	89320	28140	2060	10715	0	335	130570				
% Pervious	68.2%	21.5%	1.6%	8.2%	0%	0.3%	99.7%				
Impervious Area (m²)	0	0	0	0	430	0	430				
% Impervious	0%	0%	0%	0%	0.3%	0%	0.3%				
76 Impervious		TION FACTOR		070	0.070	070	0.070				
Topography Infiltration Factor	0.15	0.15	0.15	0.2	0	0.2					
Soil Infiltration Factor	0.2	0.2	0.2	0.2	0	0.2					
Land Cover Infiltration Factor	0.1	0.15	0.2	0.15	0	0					
MECP Infiltration Factor	0.45	0.5	0.55	0.55	0	0.4					
Actual Infiltration Factor	0.45	0.5	0.55	0.55	0	0.4					
Runoff Coefficient	0.55	0.5	0.45	0.45	1	0.6					
Runoff from Impervious Surfaces*	0	0	0	0	0.8	0.8					
·	INPUTS (I	ER UNIT ARE	A)		•	•					
Precipitation (mm/yr)	886	886	886	886	886	886	886				
Run On (mm/yr)	0	0	0	0	0	0	0				
Other Inputs (mm/yr)	0	0	0	0	0	0	0				
Total Inputs (mm/yr)	886	886	886	886	886	886	886				
	OUTPUTS	(PER UNIT AR	EA)		ı	I.					
Precipitation Surplus (mm/yr)	314	314	314	314	709	709	317				
Net Surplus (mm/yr)	314	314	314	314	709	709	317				
Evaportranspiration (mm/yr)	572	572	572	572	177	177	570				
Infiltration (mm/yr)	141	157	173	173	0	284	148				
Rooftop Infiltration (mm/yr)	0	0	0	0	266	0	1				
Total Infiltration (mm/yr)	141	157	173	173	266	284	149				
Runoff Pervious Areas	173	157	141	141	0	425	167				
Runoff Impervious Areas	0	0	0	0	443	0	1				
Total Runoff (mm/yr)	173	157	141	141	443	425	168				
Total Outputs (mm/yr)	886	886	886	886	886	886	886				
Difference (Inputs - Outputs)	0	0	0	0	0	0	0				
	INPUT	S (VOLUMES)		-							
Precipitation (m³/yr)	79155	24938	1826	9496	381	297	116092				
Run On (m³/yr)	0	0	0	0	0	0	0				
Other Inputs (m³/yr)	0	0	0	0	0	0	0				
Total Inputs (m³/yr)	79155	24938	1826	9496	381	297	116092				
		TS (VOLUMES		3430	301	251	110032				
Duration to the Committee (1) 34 m		,	ĺ	0000	005	200	44404				
Precipitation Surplus (m³/yr)	28079	8846	648	3368	305	238	41484				
Net Surplus (m³/yr)	28079	8846	648	3368	305	238	41484				
Evaportranspiration (m³/yr)	51076	16091	1178	6127	76	59	74608				
Infiltration (m³/yr)	12636	4423	356	1853	0	95	19363				
Rooftop Infiltration (m³/yr)	0	0	0	0	114	0	114				
Total Infiltration (m ³ /yr)	12636	4423	356	1853	114	95	19477				
Runoff Pervious Areas (m³/yr)	15444	4423	291	1516	0	143	21816				
Runoff Impervious Areas (m³/yr)	0	0	0	0	191	0	191				
Total Runoff (m³/yr)	15444	4423	291	1516	191	143	22007				
Total Outputs (m³/yr)	<u> </u>		i								
Difference (Inputs - Outputs)	79155	24938	1826	9496	381	297	116092				
Dillerence (inputs - Outputs)	0	0	0	0	0	0	0				

Notes:

Naturalized areas are open, vacant areas that are not used for agriculture and are not forested areas Assume 37.5% of rooftop runoff infiltrates the ground in this scenario.

Downspout disconnection is indicated to result in the infiltration of 25-50% of rooftop runoff

Appendix E.3 Water Budget Post-Development - No Mitigation Strategies

Catchment Designation				I		PO	ST-DEVI	ELOPMENT SITE				
-	Low Den:	sity - Single	Detached	Med. De	nsity - To	wnhouses	EP	Roads & Laneways	Parkland	SWM Pond	TOTAL	
	Lawns	Rooftops	Driveways	Lawns	Rooftops	Driveways		Asphalt		Pond		
Area (m²)	15126	36302	9076	4769	17883	1192	4499	37923	3500	730	131000	
Pervious Area (m ²)	15126	0	0	4769	0	0	4499	0	3500	0	27893	
% Pervious	11.5%	0%	0%	4%	0%	0%	3.4%	0%	2.7%	0%	21.3%	
Impervious Area (m ²)	0	36302	9076	0	17883	1192	0	37923	0	730	103107	
% Impervious	0%	27.7%	6.9%	0%	13.7%	0.9%	0%	28.9%	0%	0.6%	78.7%	
•		•	•	•	IN	FILTRATIC	N FACTO	RS	-			
Topography Infiltration Factor	0.2	0	0	0.2	0	0.15	0.1	0.15	0.15	0		
Soil Infiltration Factor	0.2	0	0	0.2	0	0	0.2	0	0.2	0		
Land Cover Infiltration Factor	0.15	0	0	0.15	0	0	0.2	0	0.15	0		
MECP Infiltration Factor	0.55	0	0	0.55	0	0.15	0.5	0.15	0.5	0		
Actual Infiltration Factor	0.55	0	0	0.55	0	0	0.5	0	0.5	0.05		
Runoff Coefficient	0.45	1	1	0.45	1	1	0.5	1	0.5	0.95		
Runoff from Impervious Surfaces*	0	0.8	0.8	0	0.8	0.8	0	0.8	0.8	0.8		
					IN	PUTS (PER	UNIT ARI	EA)				
Precipitation (mm/yr)	886	886	886	886	886	886	886	886	886	886	886	
Run On (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	
Other Inputs (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	
Total Inputs (mm/yr)	886	886	886	886	886	886	886	886	886	886	886	
		OUTPUTS (PER UNIT AREA)										
Precipitation Surplus (mm/yr)	314	709	709	314	709	709	314	709	314	709	625	
Net Surplus (mm/yr)	314	709	709	314	709	709	314	709	314	709	625	
Evaportranspiration (mm/yr)	572	177	177	572	177	177	572	177	572	177	261	
Infiltration (mm/yr)	173	0	0	173	0	0	157	0	157	35	36	
Rooftop Infiltration (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	
Total Infiltration (mm/yr)	173	0	0	173	0	0	157	0	157	35	36	
Runoff Pervious Areas	141	0	0	141	0	0	157	0	157	0	31	
Runoff Impervious Areas	0	709	709	0	709	709	0	709	0	674	558	
Total Runoff (mm/yr)	141	709	709	141	709	709	157	709	157	674	589	
Total Outputs (mm/yr)	886	886	886	886	886	886	886	886	886	886	886	
Difference (Inputs - Outputs)	0	0	0	0	0	0 INPUTS (V	٥	0	0	0	0	
3								_				
Precipitation (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
Run On (m³/yr)	0	0	0	0	0	0	0	0	0	0	0	
Other Inputs (m³/yr)	0	0	0	0	0	0	0	0	0	0	0	
Total Inputs (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
						OUTPUTS (VOLUMES	3)				
Precipitation Surplus (m³/yr)	4755	25737	6434	1499	12679	845	1414	26886	1100	518	81867	
Net Surplus (m ³ /yr)	4755	25737	6434	1499	12679	845	1414	26886	1100	518	81867	
Evaportranspiration (m³/yr)	8650	6434	1609	2727	3170	211	2572	6722	2001	129	34225	
Infiltration (m ³ /yr)	2615	0	0	825	0	0	707	0	550	26	4723	
Rooftop Infiltration (m³/yr)	0	0	0	0	0	0	0	0	0	0	0	
Total Infiltration (m³/yr)	2615	0	0	825	0	0	707	0	550	26	4723	
Runoff Pervious Areas (m³/vr)	2140	0	0	675	0	0	707	0	550	0	4072	
(1,7)	0	25737	6434	0	12679	845	0		0	492		
Runoff Impervious Areas (m³/yr) Total Runoff (m³/yr)								26886			73073	
` ' ' ' '	2140	25737	6434	675	12679	845	707	26886	550	492	77144	
Total Outputs (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	

Notes:

*Evaporation from impervious areas was assumed to be 20% of precipitation.

Asphalt has 0% infiltration capability

Low Density Single Lots: Assume rooftops cover about 60% of the lot. Driveways cover about 15% of the lot; Grass (lawns) cover about 25% of the lot.

Medium Density Townhouse Lots: Assume rooftops cover about 75% of the lot. Driveways cover about 5% of the lot; Grass (lawns) cover about 20% of the lot.

Appendix E.4 Water Budget Post-Development - With Downspout Disconnection Mitigation Strategies

Catchment Designation							POST-DEVELOPMENT SITE					
_	Low Dens	sity - Single	Detached	Med. De	nsity - To	wnhouses	EP	Roads & Laneways	Parkland	SWM Pond	TOTAL	
	Lawns	Rooftops	Driveways			Driveways		Asphalt		Pond		
Area (m²)	15126	36302	9076	4769	17883	1192	4499	37923	3500	730	131000	
Pervious Area (m ²)	15126	0	0	4769	0	0	4499	0	3500	0	27893	
% Pervious	11.5%	0%	0%	4%	0%	0%	3.4%	0%	2.7%	0%	21.3%	
Impervious Area (m ²)	0	36302	9076	0	17883	1192	0	37923	0	730	103107	
% Impervious	0%	27.7%	6.9%	0%	13.7%	0.9%	0%	28.9%	0%	0.6%	78.7%	
					IN	FILTRATIC	N FACTO	RS				
Topography Infiltration Factor	0.2	0	0	0.2	0	0.15	0.1	0.15	0.15	0		
Soil Infiltration Factor	0.2	0	0	0.2	0	0	0.2	0	0.2	0		
Land Cover Infiltration Factor	0.15	0	0	0.15	0	0	0.2	0	0.15	0		
MECP Infiltration Factor	0.55	0	0	0.55	0	0.15	0.5	0.15	0.5	0		
Actual Infiltration Factor	0.55	0	0	0.55	0	0	0.5	0	0.5	0.05		
Runoff Coefficient	0.45	1	1	0.45	1	1	0.5	1	0.5	0.95		
Runoff from Impervious Surfaces*	0	0.8	0.8	0	0.8	0.8	0	0.8	0.8	0.8		
						PUTS (PER		,				
Precipitation (mm/yr)	886	886	886	886	886	886	886	886	886	886	886	
Run On (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	
Other Inputs (mm/yr)	0	0	0	0	0	0	0 886	0	0	0	0	
Total Inputs (mm/yr)	886	886	886	886	886	886		886	886	886	886	
Decision (Complete Association)	044	700	700	044	OUTPUTS (PER UNIT AREA)					700	005	
Precipitation Surplus (mm/yr)	314	709	709	314	709	709	314	709	314	709	625	
Net Surplus (mm/yr)	314	709	709	314	709	709	314	709	314	709	625	
Evaportranspiration (mm/yr)	572 173	177 0	177 0	572 173	177 0	177 0	572 157	177 0	572 157	177 35	261 36	
Infiltration (mm/yr) %Rooftop Required to Meet Pre-Development		38%			38%							
Rooftop Infiltration (mm/yr)	0	272	0	0	272	0	0	0	0	 0	113	
Total Infiltration (mm/yr)	173	272	0	173	272	0	157	0	157	35	149	
Runoff Pervious Areas	141	0	0	141	0	0	157	0	157	0	31	
Runoff Impervious Areas	0	437	709	0	437	709	0	709	0	674	445	
Total Runoff (mm/yr)	141	437	709	141	437	709	157	709	157	674	476	
Total Outputs (mm/yr)	886	886	886	886	886	886	886	886	886	886	886	
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	
						INPUTS (V	OLUMES)				·	
Precipitation (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
Run On (m³/yr)	0	0	0	0	0	0	0	0	0	0	0	
Other Inputs (m³/yr)	0	0	0	0	0	0	0	0	0	0	0	
Total Inputs (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
Total inputs (iii /yr)	13403	32171	6043	4220		OUTPUTS (3102	047	110092	
D 1 1 1 1 2 1 1 1 3 1 1	1755	05707	2424	4400				<i>'</i>	4400	540	0.400=	
Precipitation Surplus (m³/yr)	4755	25737	6434	1499	12679	845	1414	26886	1100	518	81867	
Net Surplus (m³/yr)	4755	25737	6434	1499	12679	845	1414	26886	1100	518	81867	
Evaportranspiration (m³/yr)	8650	6434	1609	2727	3170	211	2572	6722	2001	129	34225	
Infiltration (m ³ /yr)	2615	0	0	825	0	0	707	0	550	26	4723	
Rooftop Infiltration (m³/yr)	0	9885	0	0	4869	0	0	0	0	0	14754	
Total Infiltration (m³/yr)	2615	9885	0	825	4869	0	707	0	550	26	19477	
Runoff Pervious Areas (m³/yr)	2140	0	0	675	0	0	707	0	550	0	4072	
Runoff Impervious Areas (m³/yr)	0	15852	6434	0	7809	845	0	26886	0	492	58319	
Total Runoff (m³/yr)	2140	15852	6434	675	7809	845	707	26886	550	492	62390	
Total Outputs (m³/yr)	13405	32171	8043	4226	15848	1057	3987	33608	3102	647	116092	
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	
Notes:		<u> </u>		-								

Notes:

*Evaporation from impervious areas was assumed to be 20% of precipitation.

Asphalt has 0% infiltration capability

Low Density Single Lots: Assume rooftops cover about 60% of the lot. Driveways cover about 15% of the lot; Grass (lawns) cover about 25% of the lot.

Medium Density Townhouse Lots: Assume rooftops cover about 75% of the lot. Driveways cover about 5% of the lot; Grass (lawns) cover about 20% of the lot.

Appendix E.5Water Budget Summary

	SITE										
PARAMETER	Pre- Development	Post-Development No Mitigation	Difference Pre- vs. Post-	Post-Development With Mitigation	Difference Pre- vs. Post-						
Precipitation (m ³ /yr)	116092	116092	0%	116092	0%						
Run On (m ³ /yr)	0	0	0%	0	0%						
Other Inputs (m ³ /yr)	0	0	0%	0	0%						
Total Inputs (m³/yr)	116092	116092	0%	116092	0%						
	OUTPUTS (VOLUMES)										
Precipitation Surplus (m³/yr)	41484	81867	97%	81867	97%						
Net Surplus (m³/yr)	41484	81867	97%	81867	97%						
Evapotranspiration (m³/yr)	74608	34225	-54%	34225	-54%						
Infiltration (m ³ /yr)	19363	4723	-76%	4723	-76%						
% Rooftop Runoff to balance infiltration				38%							
Rooftop Infiltration (m ³ /yr)	114	0	0%	14754							
Total Infiltration (m ³ /yr)	19477	4723	-76%	19477	0%						
Runoff Pervious Areas (m³/yr)	21816	4072	-81%	4072	-81%						
Runoff Impervious Areas (m³/yr)	191	73073		58319							
Total Runoff (m³/yr)	22007	77144	251%	62390	184%						
Total Outputs (m³/yr)	116092	116092	0%	116092	0%						

To maintain pre-development infiltration values;

38%

of post-development rooftop runoff needs to be infiltrated.



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

David Workman, P.Geo David.Workman@ghd.com 905-728-1500

Nyle McIlveen, P.Eng Nyle.Mcilveen@ghd.com 705-749-3317

www.ghd.com