November 17, 2016

David Sud
Moorefield Properties Ltd.
2 Farr Avenue
Sharon, Ontario
L0G 1V0

Re: Review of Hydrogeological Assessment and Water Balance
154 and 164 Cemetery Road, Township of Uxbridge
Project No. P16-11144-91

Dear Mr. Sud:

We are pleased to provide the results of our review of the existing hydrogeological report and stormwater management report for the above-noted development. Relevant reports provided to WSP for review include:

- *Hydrogeological Investigation – Cemetery Road Uxbridge Proposed Development*, submitted by Norbert M. Wornes, M.Sc., P.Geo, Hydrogeologist (February 2009);
- Draft version of the *Functional Servicing and Stormwater Management repo*rt, prepared by Cole Engineering Group Ltd. (October 2016); and
- *ORMCP Natural Heritage Evaluation – 164 Cemetery Road, Township of Uxbridge*, submitted by Beacon Environmental (February 2009).

The Hydrogeological and Natural Heritage reports that were provided were prepared in relation to a previous development application for a building complex consisting of 240 retirement units and commercial space, as well as associated parking lot area. The draft stormwater management report was prepared for the current proposed draft plan application which includes total of fifty six (56) townhouse lots on the north parcel of the property and a three-story apartment building on the south parcel of the site. The subject property area between the two applications are generally the same, with the exception of some additional land extending to the north along Cemetery Road being included in the current application.

The Hydrogeological report presents a detailed characterization of the existing hydrogeological conditions at the site and the surrounding area, including descriptions of the main hydrogeological functions for the site as it relates to the groundwater recharge and seasonal groundwater discharge. Current LSRCA requirements for hydrogeological studies have been partially addressed in this report. These LSRCA requirements have changed since this report was prepared. WSP has prepared a work plan to supplement the previous hydrogeological investigations to ensure that a water balance is prepared in accordance with LUP-12 of the South

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Georgian Bay Lake Simcoe Protection Plan in a WHPA-Q2 Zone. A detailed pre-development to post-development water balance study will be carried out to update the previous assessment in accordance with the revised site plans, which will quantify changes to the hydrogeological function of site features, particularly the wetland tributary.

This study may be completed following the initial draft plan application, as the water balance study must be based on the final site plan and be consistent with the detailed stormwater management plan.

Although the details are not necessarily required until the detailed design stage, in order to support the draft plan application Beacon Environmental has identified the need to quantify and confirm that pre-development run-off directed towards the site wetland will be maintained and will not be increased under post-development conditions.

Cole Engineering's Functional Servicing report includes an assessment of target peak flows which were based on existing site flows. The preliminary design for stormwater management was prepared with the intention of matching pre- and post-infiltration and overland flows as closely as possible through controlled flow methodologies, such as the use of orifice controls and infiltration chambers at both the north and south parcels of the development. Cole Engineering has proposed the use of over-controls at the northern parcel of land in order to compensate for a slight increase in flow rates from the southern parcel to ensure that overall release rate targets towards the wetland are met and maintained. They have also indicated that every effort will be made to match post-development infiltration volumes to the pre-development levels on an annual basis, using infiltration storage tanks that will be sized accordingly.

The detailed hydrogeological water balance revision will be completed in sufficient detail to provide a revised site infiltration target, as well as to provide targets for matching pre-development overland run-off directed towards the wetland pre- and post-development in Cole Engineering's detailed stormwater management design. Engineered site design will be modified accordingly to ensure that targets are met in accordance with LUP-12 of the South Georgian Bay Lake Simcoe Source Protection Plan in a WHPA-Q2 Zone and other relevant policies. It is expected that this water balance work will be included as a Condition of draft plan approval.

Based on our review of the existing hydrogeological investigations report, meeting water balance targets is not expected to be a concern for the proposed development. Existing soil and groundwater conditions, as well as proposed site layout, allow for additional infiltration opportunities, such as infiltration trenches in rear yards, which may be implemented if required to meet the targets. Post-development run-off from the site is expected to exceed pre-development flows, however run-off will be detained by the proposed orifice controls and released to the wetland over time to

match pre-development targets as closely as possible, therefore negative impacts to the wetland are not expected. Excess run-off volumes can be discharged downstream at the culvert under Cemetery Road and thereby bypass the wetland, as needed. Flow release targets and site infiltration targets will be revisited at the detailed engineering drainage design stage to ensure that specific targets are met.

We trust that this review will meet your current needs and those of Beacon Environmental. Please contact us if you have any questions or concerns.

Yours truly,
WSP Canada Inc.

Sarah Dignard, P.Eng.
Project Engineer

Reviewed by,

Lloyd Lemon, M.Sc., P.Geo.
Senior Project Geoscientist

SJD:nah

Hydrogeological Investigation
Cemetery Road Uxbridge
Proposed Development

Prepared For :
Hyatt Developments (Uxbridge) Inc.

Prepared By:
Norbert M. Woerns M.Sc. P.Geo.
Hydrogeologist

February 12, 2009

Distribution
1 Client
1 File

Norbert M. Woerns
96 Lund Street, Richmond Hill, Ontario, L4C 5V9
Ph: (905) 883- 0276

February 12, 2009

Jason Pantalone
Hyatt Development (Uxbridge) Ltd.
c/o Forum Development Ltd.
291 Edegely Blvd., Suite 1
Concord, Ontario
L4K 3Z4

Dear Mr. Pantalone:

Re: Cemetery Road, Uxbridge, Ontario Proposed Development
Hydrogeological Investigation

I am pleased to present the attached summary report for the above noted study. Included in this study is the result of a review of available geological and hydrogeological information and field investigation to confirm local and on-site hydrogeological conditions. Hydrogeological characterization of the site is provided along with an assessment of impact of the proposed development. Conclusions and recommendations for mitigation of anticipated impacts are provided in support of the site plan application.

I trust the attached report meets your needs at this time. Please call the undersigned should you have any questions or require additional information.

Yours very truly,

Norbert Woerns

Norbert M. Woerns M.Sc., P. Geo.
Hydrogeologist

Attach:

Table of Contents

List of Figures

List of Tables

Appendices

Hydrogeological Investigation
Cemetery Road, Uxbridge, Ontario

1.0 Introduction

1.1 Background

The subject property is located on part of Lots 26 and 27 Concession 6 at the western edge of the community of Uxbridge, Durham Region. It is located on the north side of Highway 47, Toronto Street South and includes portions of agricultural property formerly owned by the Wood family at 164 Cemetery Road. The portion of the property being considered for development consists of 2.49 hectares (6.15 acres). A site plan for 240 retirement units and commercial office space development is proposed within the existing settlement area boundary for the community of Uxbridge.

The property consists of agricultural fields with small wooded areas in the northwestern and southeastern portions of the subject lands. These wooded areas are associated with seepage areas and wetlands. The site drains from southwest to northeast through an intermittent drainage course that crosses the southern portion of the property. The northern portion of the subject lands contains an existing residence and a number of farm buildings associated with an existing agricultural operation.

The proposed development will be serviced with municipal sewer and water services. The community of Uxbridge is currently served with municipal wells. These are located within the community of Uxbridge and the nearest well is located about a kilometer to the northeast of the subject property.

2.0 Methodology

The hydrogeological evaluation is in support of a site plan approval and provides information to facilitate the layout and design of the proposed development with recommendations for storm water management systems. The hydrogeological evaluation includes the following:

1) Assessment of the hydrogeological setting through secondary source information, on-site subsurface investigations, and a reconnaissance site visit to identify areas where infiltration can occur and areas where site conditions limit or preclude infiltration,
2) Quantification of the existing groundwater recharge contributions through an appropriate long term water balance assessment,
3) Assessment of the groundwater contributions to the tributary stream,
4) Impact assessment to quantify the potential change in groundwater quantity and quality both on-site and off-site and the effects upon local wells including the municipal wells,
5) Screening of infiltration mitigation measures based on available site information collected through background sources and field work, and
6) A mitigation strategy including appropriate infiltration measures.

This investigation does not include an assessment of the contamination potential of on-site fill materials which has been undertaken under separate Environmental Site Assessment investigations.

2.1 Data Review

Available geological and hydrogeological maps and reports of the area were obtained and reviewed to provide a characterization of the site in the context of the local and regional setting. Stereo air photography obtained from Northway Maps for the property was examined to determine site terrain conditions. Previous investigations and borehole logs completed on the property as well as Ministry of the Environment well record summaries for the area were reviewed and utilized to characterize local groundwater conditions. Ministry of the Environment well summary information is provided in Appendix 1. Details of the proposed development including a detailed breakdown of the area of land use categories with percent pervious and impervious areas for each proposed land use on the property were provided by Sernas Associates for use in the water balance analysis. Monthly climatic information and a climatic water balance based on climatic data from the nearest long term climate station was provided by Environment Canada Atmospheric Environment Service (AES).

2.2 Field Investigation

Field investigations include an initial site visit, completion of the installation of mini-piezometers in the on-site intermittent drainage channel, groundwater monitors installations, in-situ hydraulic conductivity testing within the monitors, a survey of well water use in the immediate area of the site, and groundwater quality testing to character the local aquifer and on-site conditions. The location of on-site monitoring locations is shown on Figure 1.

Mini-Piezometer Installation: Two shallow groundwater monitors or mini-piezometers were installed within the on-site tributary on May 21, 2008. The purpose of these monitors was to assess vertical hydraulic gradients relative to the water levels beneath the intermittent drainage course and to determine whether it is under discharge or recharge conditions. These consist of 3.8mm diameter threaded steel pipe segments that were fitted with a stainless steel screen. These were installed into the creek bed through a shallow hand auger hole and driven a short distance into the subsurface by pounding with a metal weight. Construction details of the mini-piezometers are shown in Appendix 2.

Drilling /Monitor Installation: Drilling of the boreholes and installation of the groundwater monitors was completed by Lantech Drilling Services Inc. under the supervision and direction of Norbert M. Woerns, Hydrogeologist. The boreholes were drilled using a track mounted CME 75 auger drilling rig and 108mm inside diameter hollow stem augers. The outside of the augers measures about 200mm creating a borehole diameter of between 200mm to 250mm in diameter. Split spoon soil samples were obtained at 1.5m intervals during the drilling of the boreholes. Representative soil samples were submitted for laboratory grain size analysis by Alston Associates Inc. Grain size results are provided in Appendix 2.

Drilling and monitor installations were completed between June 16 and 17, 2008. Groundwater monitors were installed at five (5) locations within the site. One of these locations, BH1 at the northern end of the property had both shallow and deep monitors installed to determine vertical hydraulic gradients. The remaining three sites had one monitor completed at each location into the groundwater table. The depth of the deep monitor is 12.2m from surface. The shallow monitors were installed at depths of between 6.1 and 7.6m.

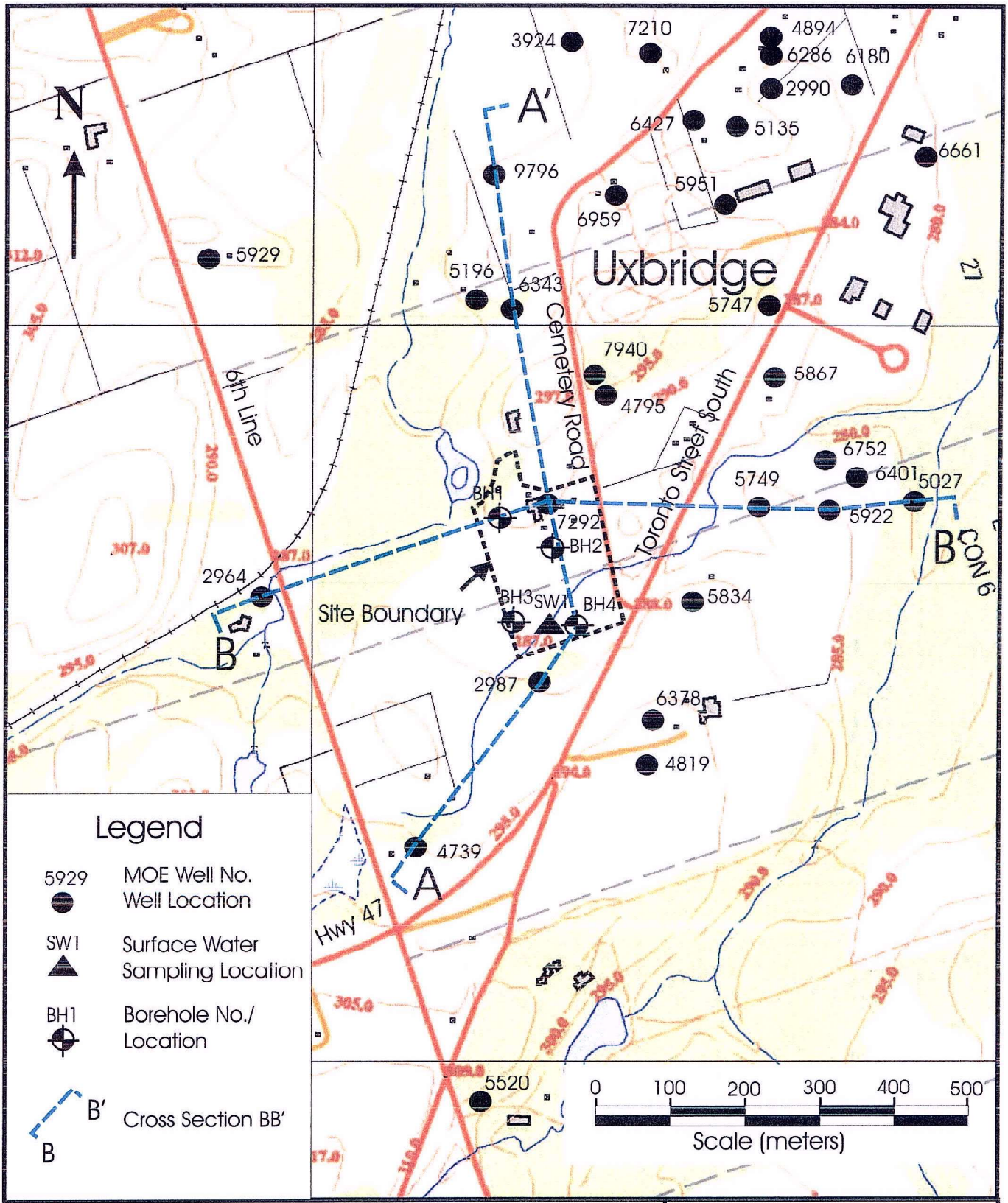

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Figure 1
Location Map

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Groundwater monitors consist of 50mm diameter threaded PVC pipe with no. 10 machine slotted PVC screens. The PVC pipe segments were threaded and the bottom of the screen was fitted with a tapered PVC end. PVC slip caps were fitted to the top of the monitors. A protective steel casing with a locked cap was installed over the PVC monitoring pipes. The steel casing measures about 102mm square and about 1.2m in length.

The borehole annulus around the PVC screens were backfilled with No. 3 silica sand to about 0.6m above the top of the screen. A bentonite gravel seal (holeplug) was installed above the sand for a minimum thickness of about one (1) meter to the surface. The shallow monitor at Borehole 1 had about 0.5m of holeplug above the silica sand. Above this was about 2.0m of bentonite grout which was capped with about a meter of holeplug to surface. The holeplug was hydrated with the addition of clean water from the water tank and the bentonite grout was also mixed with clean water in a pail prior to installation. Bentonite grout (quickgel) was installed above the bentonite gravel seal to just below ground surface. The remaining upper one to two metres of borehole annulus between the PVC monitor and the borehole wall was backfilled to surface with bentonite gravel that was hydrated with clean water. Stratigraphic descriptions of the subsurface units and monitor construction details are provided in Appendix 2. Surface elevations of the monitors were checked in the field with a hand held GPS unit (Garmon Etrex Vista) and were adjusted to conform to the topographic survey plan by J.D. Barnes Limited, April 29, 2008.

In-Situ Hydraulic Conductivity Testing: In-situ hydraulic conductivity testing was completed at each groundwater monitor. In-situ hydraulic conductivity testing was completed with the injection of a clean PVC slug measuring 92.7 cm in length and 3.5 cm in diameter. Water level data was collected manually using a Solinst electronic water level meter. These data were analysed using a computerized analytical analysis, Aquifer Test version 3.5, by Waterloo Hydrogeologic Inc. This testing was completed on June 25, 2008 eight days following completion of the last groundwater monitor. The results of this analysis are provided in Appendix 2.

Well Survey: A field survey of local wells was conducted on May 21, 2008, June25, 2008 and July 10, 2008 for properties adjacent to and in the immediate area of the site. Properties included in the survey are shown on Figure 2. Well survey forms were filled out to the extent possible during on-site interviews with local residents. A survey form was dropped off with a self addressed and stamped return envelop at two residences where no one was home. Information provided on seventeen (17) individual properties is summarized in Appendix 3. A well survey was not completed at the property located at 150 Cemetery Road north of the subject property due to a locked gate and the absence of a mail box in which to deposit a well survey form. Three other properties did not respond to the well survey form left at each residence.

Water Quality Sampling:
A water sample was taken from one private residence up-gradient of the property and one sample was taken from the on-site residence. Additional groundwater quality samples were taken from the deep monitor (BH1D) and the shallow monitor at BH3 on July10, 2008. A surface water sample was also taken from ponded seepage water along the intermittent drainage channel on the property. The sample locations are shown on Figure 1. Water Quality results are reported in Appendix 4.

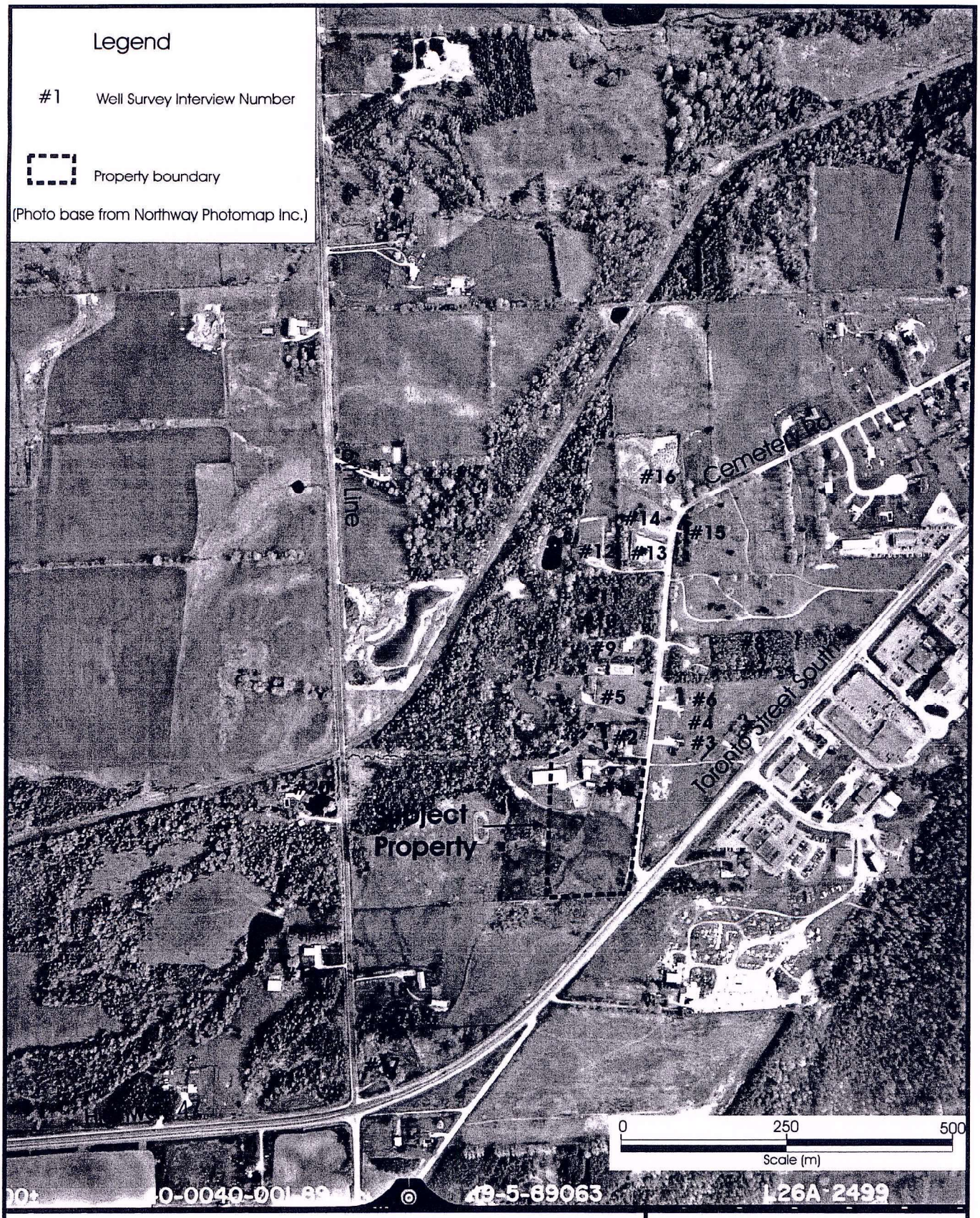

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Figure 2
Welll Survey Area

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3.0 Results

3.1 Physical Setting

The site is located at the northern edge of the Oak Ridges Moraine physiographic region (Chapman and Putnam, 1984). The site is characterized by hummocky to gently rolling topography at the north end of the property and relatively flat low lying terrain at the south end of the property. The latter is associated with wetlands and an intermittent drainage course. This hummocky terrain forms a height of land that rises about 9m above the adjacent areas to the south. In the southernmost portion of the property the land is gently rolling to flat. This area is underlain by glacial outwash deposits consisting predominantly of silt and sand. Glacial meltwaters may have eroded the underlying till deposits and deposited sand, and silt over the till surface.

Regional agricultural soils mapping completed for this area (Olding and Wicklund,1956, reprinted 1990) indicates two soil types underlying the subject, property, the Pontypool Sandy Loam (Psl) and organic soils mapped as Muck (M) as shown on Figure 3. The Pontypool soils are developed on calcareous sand deposits which generally have good drainage and normally occupy rolling to hilly terrain. The areas of organic soil or muck soil units consist of well decomposed organic deposits and occur within topographic depressions at the western end of the property which are generally associated with local wetland features. Drainage within these soil units is therefore very poor. Due to the regional scale of mapping the boundaries of the soil units should be considered approximate.

Surface elevations on the property range from about 296 meters above sea level (mASL) at the northern end of site to about 286 mASL at the southeast corner. The site is drained by an intermittent surface drainage course that flows eastward into a culvert beneath Cemetery road. There is evidence of groundwater seepage along the drainage course with evidence of iron staining.

3.2 Geological Setting

Bedrock Geology

The underlying bedrock consists of light brown to brownish grey shales of the Georgian Bay Formation. (Ontario Geological Survey 1991) formerly identified as the middle member of the Whitby Formation (Liberty 1969). The depth to bedrock within the area varies from 113 m at MOE well no. 14797 northeast of the property to about 126m at MOE well no.14667 southwest of the property. The bedrock in local well records is described as black shale.

Surficial Geology

The thickness of surficial deposits within the area, as noted above, is between 113 and 126 metres thick and consists of a complex sequence of overburden materials. Two major surficial deposits have been mapped within the property, ice-contact stratified consisting primarily of sand and gravel and glaciolacustrine sand. The ice contact deposits are typical of the Oak Ridges Moraine which extends over the entire area. Surficial geological mapping of the area was completed by the Ontario Geological Survey (Barnett, and Dodge, 1996) at a detailed scale of 1:20,000 as shown on Figure 4. Regional Surficial Geology mapping was completed by the Geological Survey of Canada (Barnett and Gwyn, 1997). This encompassed a larger area including Uxbridge at a smaller regional scale of 1:50,000.

Surficial geology was confirmed with the completion of four shallow boreholes holes to depths of between 6.1 and 7.6m and one slightly deeper monitor at 12.2 m. Borehole locations are shown on Figure 1.

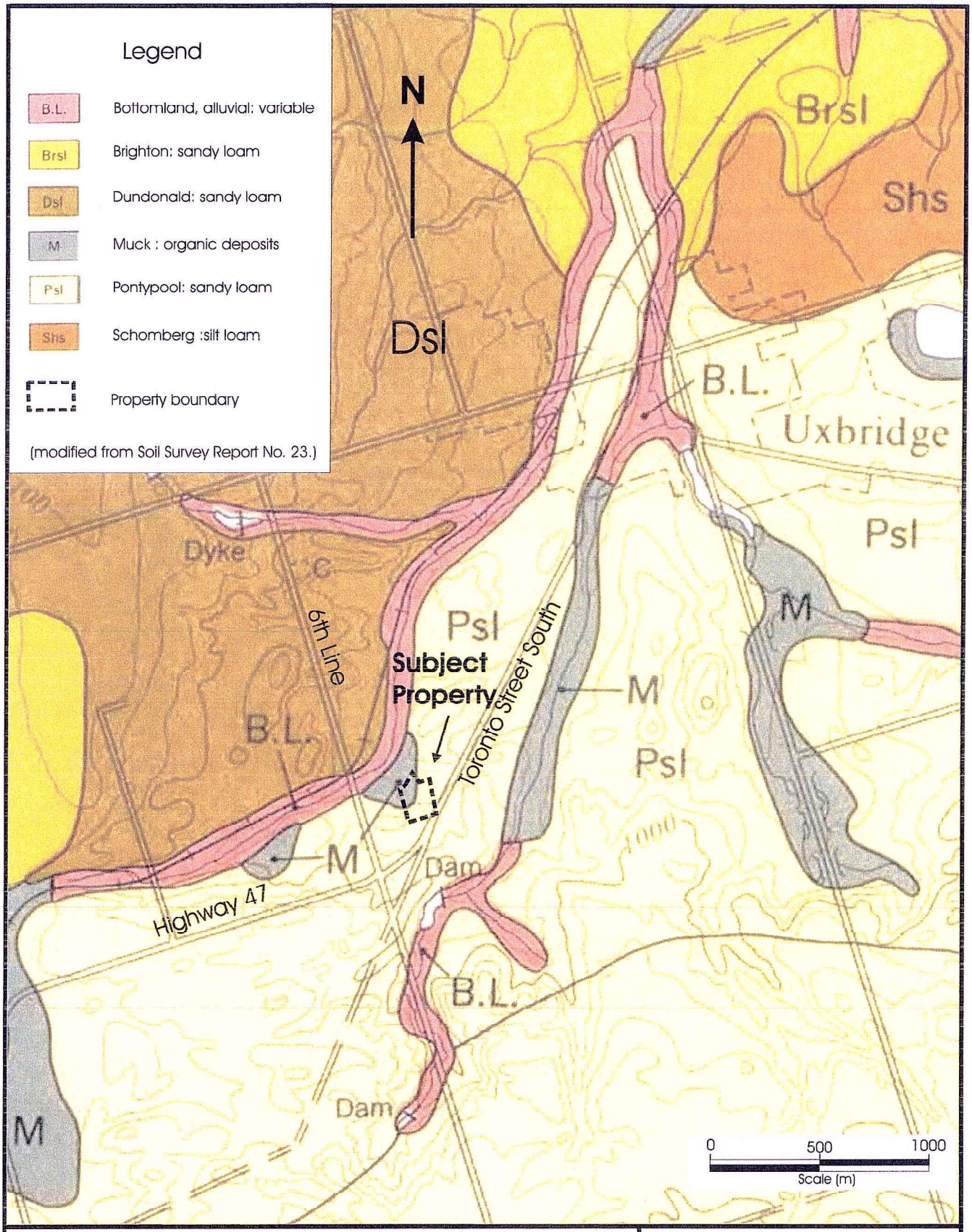

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Figure 3
Agricultural Soil Map

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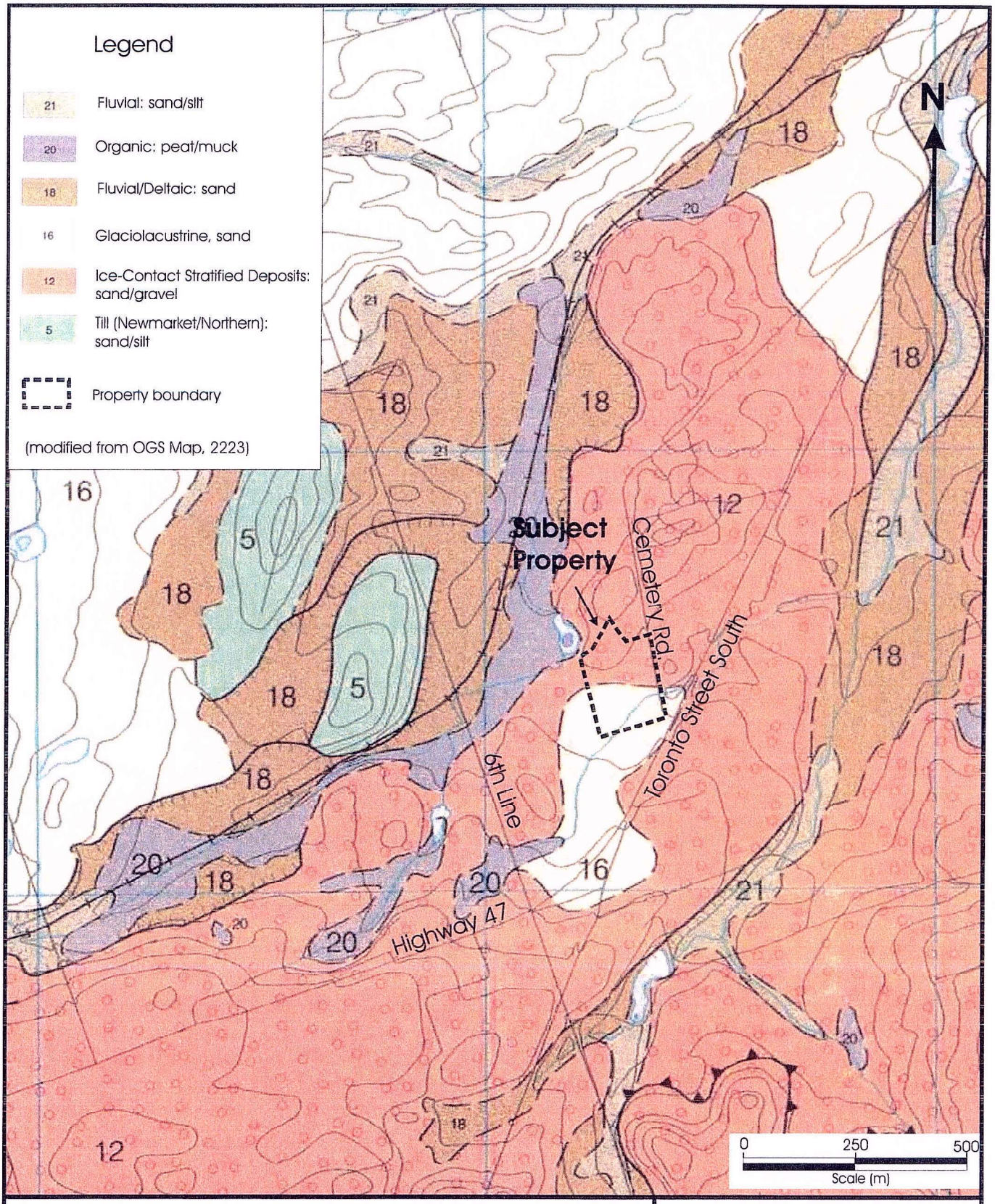

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Figure 4
Surficial Geology

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The subsurface conditions is illustrated in Sections AA', Figure 5 and Section BB', Figure 6 from Ontario Ministry of the Environment well record information summarized in Appendix 1. Well records in the vicinity of the property show sand deposits at surface varying in thickness from 2.6m to 11.9m. Buried sand and gravel deposits are also found at varying depth between 6m and 27m. Finer grained soil described as clay/sand, clay/silt, or sand/clay occur locally at surface with thicknesses of between about 7m and 12m. Finer grained soil units occur at greater thicknesses of between 18m to 116m to the south and west of the property.

Much of the site is underlain by a fine sand and silt to a depth of between 2.6m in BH 3 to 9.3m at BH 1. Grain size results are provided in Appendix 2. Sandy silt to silty sand till occurs at depths of between 2.6m at BH4 to 9.3m in BH1. This soil unit also occurs at the bottom of boreholes BH1, BH2, and BH3. At BH 4, the silt to sand till unit is about 2.2m thick where it is underlain by silt to sandy silt. Local glaciolacustrine and ice-contact stratified drift deposits consisting of sand and gravel deposits are considered to be of secondary significance from a construction aggregate perspective (OGS, 1980). The upper portion of these deposits are predominantly sand and quantities of crushable aggregate are considered limited. However resources of aggregate for road sub-base course, sand cushion and fill appear to be extensive throughout the area. The distribution of these deposits is shown on Figure 7.

3.3 Hydrogeological Setting

Hydrogeological conditions are shown on the two sections noted above. Groundwater levels vary between flowing conditions west of the subject property to about 14.0m below surface north of the property. Groundwater elevations generally decrease from south to north and from west to east as shown on Sections AA' and BB'.

Well records show that most wells are completed into a shallow buried sand and gravel aquifer between 7m and 30m from surface. Water levels in private wells in the buried sand and gravel indicate groundwater flow directions in a northeasterly and northwesterly direction as shown on Figure 8. The shallow and deep monitor pairs at BH1 shows a slight downward hydraulic gradient indicating groundwater recharge conditions on the site. The two mini-piezometers installed within the on-site creek showed downward hydraulic gradients as shown in Appendix 2. This indicates groundwater recharge conditions along the creek at the time of the water level measurements. This may change seasonally.

Wells yields in the buried sand and gravel aquifer vary between 0.38L/sec to 0.076 L/sec (5 igpm and 10 igpm). A few wells have been tested at rates of between 1.51L/sec and 2.27L/sec (20 igpm to 30 igpm). The test pumping rates indicates that there is generally more than adequate groundwater availability for most private domestic wells. The majority of water use is reported to be for domestic consumption although some minor industrial and commercial use and stock water is also reported. A few wells have been completed for municipal water use. Water quality is reported to be fresh with one exception in well 2987 south of the site which recorded salty water. This well was completed into shale bedrock which typically has poor water quality.

3.4 Well Survey/Water Use

A well survey was completed for the immediately adjacent areas of the property that were not serviced by municipal services. This included residences within about 500m of the property. A total of 20 residences were included in the survey including the existing property. Interviewed for 15 residences were completed on three dates, May 21/08, June 25/08 and July 10/08. Two residences sent in a

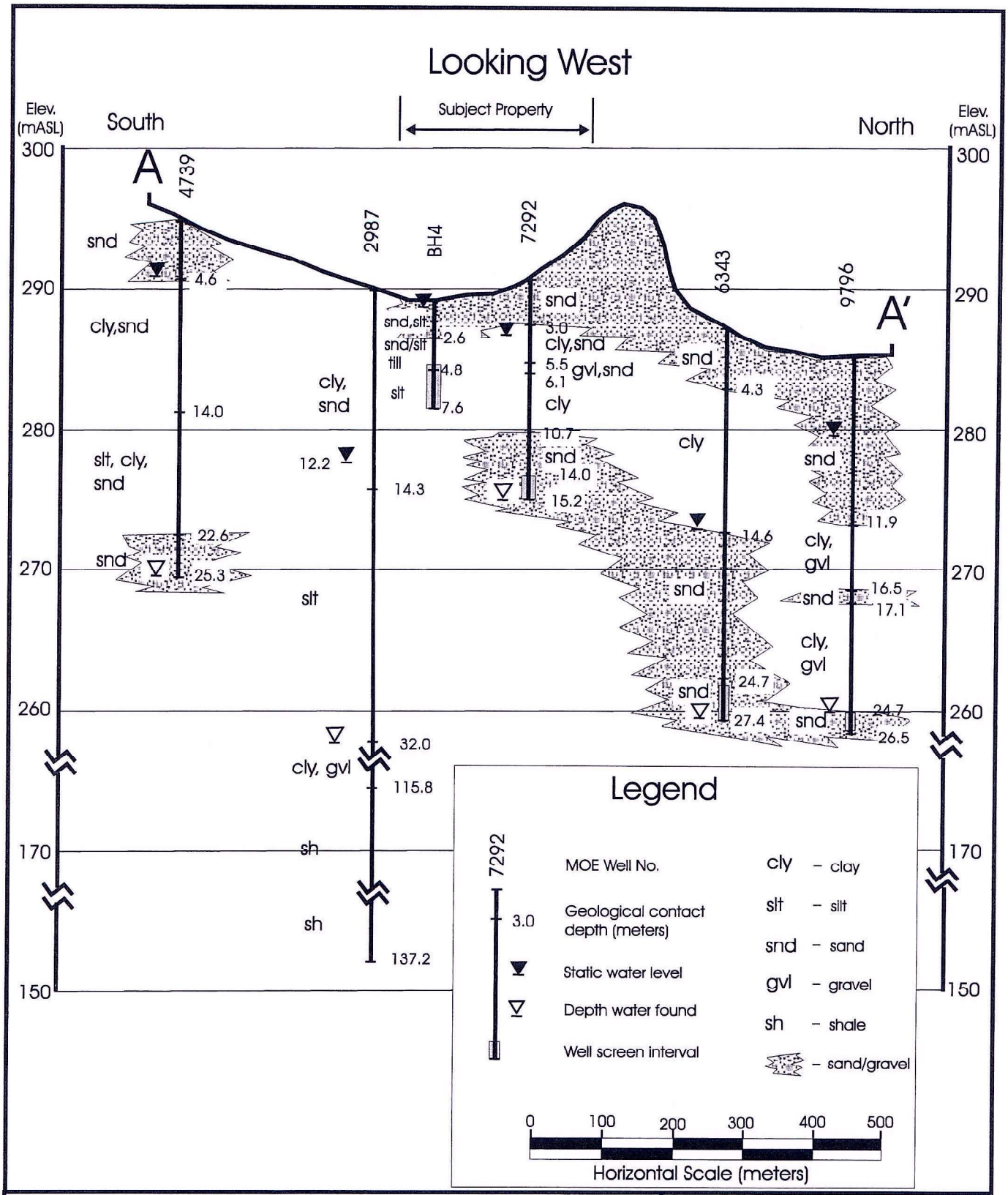

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Figure 5
Section A-A'

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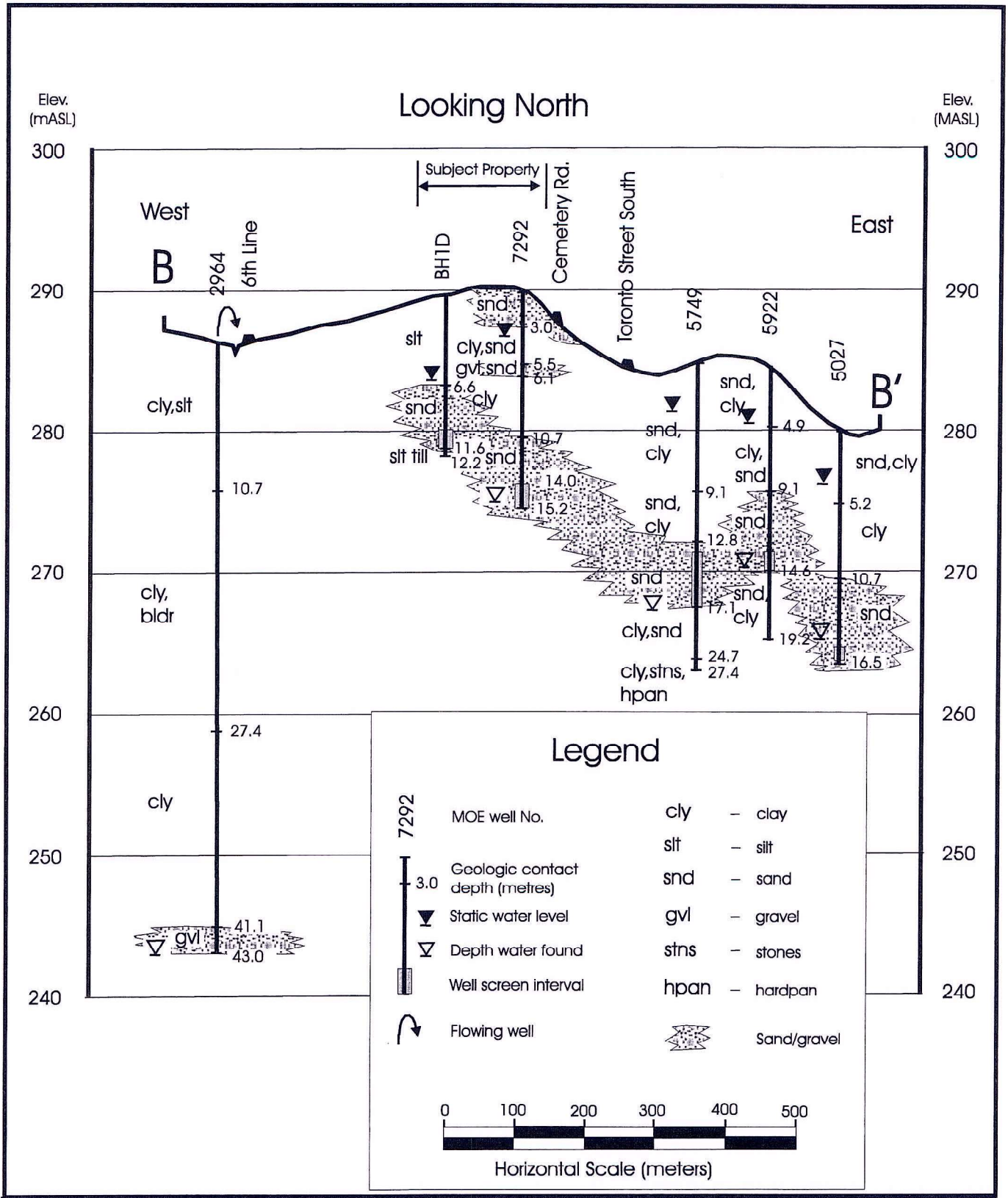

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Figure 6
Section B-B'

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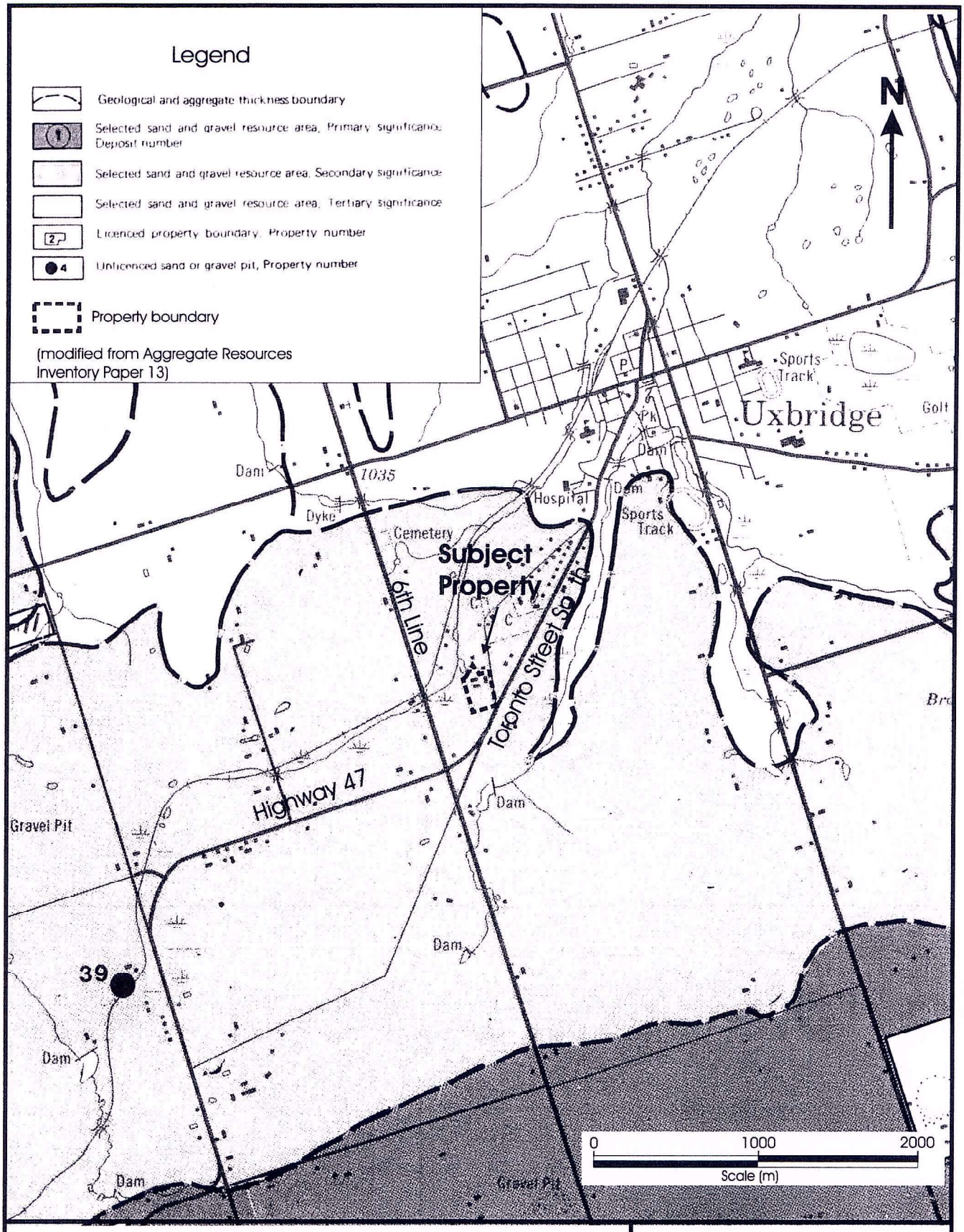

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Figure 7
Aggregate Resources

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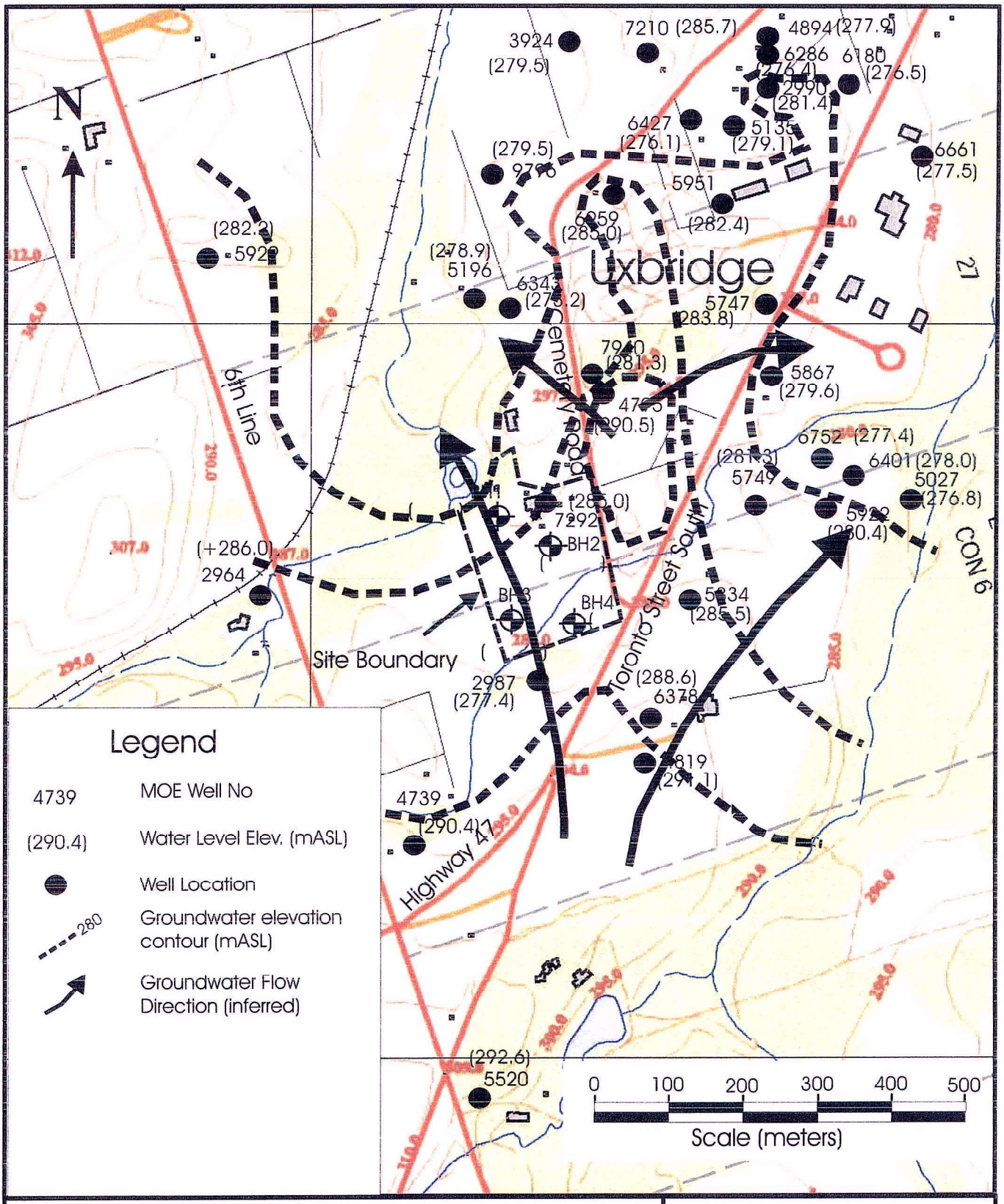

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Figure 8
Groundwater Flow

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completed survey form and no interviews or responses were available from the remaining three residences. The location of the well survey interviews is shown on Figure 2. The results of the well survey are summarized in Appendix 3. Well depths are reported to be between about 11.3 m and 61m. Most residents reported adequate supplies of water although in a couple of cases it was reported that there was limited water supply. This was corrected in one case by deepening the well and in another case the problem was resolved though changes in water use. In most cases, the water was reported to have high iron and was hard with high calcium. Sulphur was noted in three cases. Water softening is commonly used as a treatment method. One resident reported using ultra violet light and another reported using a reverse osmosis treatment system. One well was reported to flow periodically.

Two well water samples were taken on May 21/08 during the well survey. Water quality results for one resident north of and down-gradient of the site and the on-site well is provided in Appendix 4. These results show generally good water quality for domestic consumption. Hardness and turbidity are elevated above the aesthetic objective in the Ontario Drinking Water Standards (ODWS) for both wells. Iron is elevated for the up-gradient well as summarized below:

Table 1. Well Water Quality Summary

Parameter	Sample 1 On-site	Sample 2 Down-gradient	ODWS
Iron (mg/L)	ND	0.86	0.3 (AO)
Hardness (mg/L)	130	250	80-100 (OG)
Turbidity (NTU)	5.1	8.9	5 (AO)

Notes: ODWS – Ontario Drinking Water Standards AO – Aesthetic Objective
OG – Operational Guideline ND – Not Detected NTU – Nephelometric Turbidity Units

The reported levels of iron and hardness can be readily treated with water softening and iron filtration. Turbidity level in the on-site well, 5.1 NTU is only slightly above the aesthetic objective of 5.0 NTU. In the down-gradient well, the level 8.9 NTU is quite likely related to the elevated iron levels. The bacteriological results are summarized as follows:

Table 2. Well Water Microbiological Quality Summary

Parameter	Units	Sample 1 On-site	Sample 2 Down-Gradient	ODWS[+]
Fecal Coliform	CFU/100ml	0	0	0
Coliform	CFU/100ml	0	0	0
E. coli	CFU/100ml	0	0	0
Heterotrophic plate count	CFU/ml	130	6	500
Background	CFU/100ml	35	370	200

[+]- *Ontario Drinking Water Standard for treated water supplied through a water works as defined under Section 52 of the Ontario Water Resources Act. (OWRA). Not directly applicable for untreated raw water samples such as domestic well samples.*

The microbiologic parameters for the on-site sample and the down-gradient sample meets the ODWS for treated water supplied for domestic consumption for most bacteriological parameters. The exception to this is the background colonies within the down-gradient well sample with 370 CFU/100 which exceeds ODWS of 200 background colonies on a total Coliform membrane filter for treated (i.e disinfected) water supplied through a distribution system. A re-sample of this water for bacteriological results should be completed to confirm this result.

Two on-site groundwater samples and one surface water sample were taken on July 10/08. One groundwater sample was taken from shallow monitor (BH3) and the deep monitor (BH1-D). A surface water sample was taken from standing water within the low lying wet area along the intermittent creek at the south end of the property. The groundwater samples were taken from BH 1-D and BH 3 using a dedicated Waterra pump and polyethylene tubing. Three volumes of water were removed from the deep monitor BH 1-D prior to sampling. The water was very silty and was therefore decanted into a pail and allowed to settle for a few minutes before decanting through a 0.45 micron filter. A duplicate sample was taken for quality control purposes on the laboratory results. Sampling of BH3 was completed without removal of water prior to sampling. The resulting sample was relatively clear but was also filtered through a 0.45 micron filter. The surface water sample was not filtered in the field but was filtered in the lab prior to analysis.

The groundwater quality results within the shallow and deep on-site monitors shows generally good water quality. The aesthetic objective for iron (0.3 mg/L) was slightly exceeded at 0.33 mg/L within the shallow monitor and the operational guideline level for hardness (80-100 mg/L) was exceeded in both the shallow and deep monitor at 380 mg/L and 120 mg/L respectively. The sodium levels were 74 mg/L for BH1-D and 63 mg/L for BH3. These are within the 200 mg/L aesthetic objective but exceed the 20 mg/L level at which the local medical officer of health should be advised should this be used as a source of drinking water. The surface water quality from the intermittent drainage channel is similar to the on-site groundwater quality. Iron and hardness are in excess of their respective aesthetic objective and operational guideline. The chloride and sodium levels are elevated above those found within the on-site groundwater. The ratio of sodium to chloride within surface water suggests the source of these parameters is salt, probably from local winter road maintenance activities. The level of chloride in surface water (280 mg/L) exceeds the aesthetic objective (250 mg/L) for drinking purposes and the sodium level (180 mg/L) is in excess of the health advisory level of 20 mg/L but below the 200 mg/L aesthetic objective for drinking water purposes. These results are summarized in Table 3 below.

Table 3. Water Quality Results Summary – On-site Groundwater and Surface Water

Parameter	BH 1-D	BH3	Surface Water	ODWS
Iron (mg/L)	ND	0.33	0.33	0.3 (AO)
Hardness (mg/L)	120	380	300	80-100 (OG)
Colour (TCU)	5	4	55	5 (AO)
Chloride (mg/L)	23	170	280	250 (AO)
Sodium (mg/L)	74	63	180	200 (AO);20 (advisory level)

Notes: AO – Aesthetic Objective
OG – Operational Guideline

The water quality in the on-site groundwater and surface water appears to be relatively good, however there are indications of urban impacts with increased sodium and chloride in the surface water and to a lesser extent the on-site shallow to intermediate depth groundwater.

The property lies along the edge of a wellhead protection zone for the Uxbridge municipal wells. It also lies within an area identified within the Regional Official Plan as a high aquifer vulnerability area as shown on Schedule B Map B2 of the Official Plan of the Regional Municipality of Durham Region . These designations impose restrictions upon certain land uses as outlined in Tables E5 and E6 of Appendix E of the Regional Municipality of Durham Official Plan. The Oak Ridges Moraine provisions relating to wellhead protection apply to the property as well as relevant provisions of the regional and local municipal official plans. The implications of this are discussed in Section 6.2 Wellhead Protection.

3.5 Groundwater Recharge/Discharge

The property lies within a regional groundwater recharge area the Uxbridge Infiltration Area. This area is recognized as requiring storm water infiltration measures, LSRCA (1997). There is visual evidence some localized groundwater discharge associated the onsite intermittent stream at the south end of the property. Recharge conditions are reflected by well record information and the on-site groundwater monitors showing downward hydraulic gradients. Groundwater recharge is facilitated by the relatively permeable soils beneath most of the property and downward hydraulic gradients. Locally the small unnamed creek has cut into overburden materials at the south end of the property where the groundwater table is very close to surface and likely intersects the ground surface during seasonally higher groundwater levels within the spring and fall of the year.

The surficial soil consisting mostly of silt, sand and trace of clay, has a moderate permeability and groundwater recharge potential depending upon the sand and silt content. Silt till soil which occurs at depth below the site is expected to have a relatively low permeability. Typical recharge rates for the silty soil are in the range of 125 to 150 mm/yr (MOEE 1995). Recharge rates could vary depending upon the density of the soil, the degree of weathering and local topographic conditions. Maintenance of the recharge and discharge functions of the property are important in maintaining the ecological health of the on-site wetland and down stream aquatic and terrestrial habitats associated with the river valley systems.

4.0 Pre-Development Water Balance

4.1 Meteorological Data and Climatic Water Balance

Long term meteorological data from the Uxbridge Meteorological Station (42°12'N, 79°10'W) was used to prepare the water balance. The data from this station was selected as it represents the longest period of record available locally and is considered representative of long term climatic trends for the area. These data include temperature and precipitation data for the period between 1954 and 1975. Environment Canada requires a continuous period of climate data over a period of at least 10 years for calculating long term climatic water balance. The mean annual water surplus was calculated using the method described in Thornthwaite and Mather (1957). These data were tabulated on a monthly basis which is summarized in Appendix 5. Soil moisture storage of 200 mm/yr is assumed for moderately deep rooted plants including pasture which is characteristic of this property. This is considered representative of both sandy silt and the fine grained silty till surface soils found on the property as documented in subsurface soil investigations.

A summary of the climatic water balance for existing conditions is provided in Table 1 below. This table shows average conditions from the meteorological data for moderately deep rooted plants typical of pasture lands. The property consists primarily of agricultural pasture fields. There is a small forested area adjacent the north western portion of the site. In addition there is a riparian area associated with the creek in the southeastern portion of the property. The riparian area contains tree cover with a shrub understory. Both the forest and the riparian area are to remain undisturbed under post-development conditions. For purposes of the water balance a soil moisture of 350 mm/yr has been used due to the tree cover. The mean annual precipitation is 783 mm/yr. The total annual surplus is the amount of water available after evapotranspiration has occurred. Evapotranspiration is the largest component of the water balance and increases with increasing depth of the roots of plants. The remaining surplus is available for runoff and infiltration. The pre-development climatic water balance is summarized below:

Table 4 Water Balance Summary 1954 – 1975, Uxbridge, Ontario

Soil Moisture	Precipitation (mm/yr)	Potential ET (mm/yr)	Actual ET (mm/yr)	Surplus (mm/yr)
Soil Moisture 100 mm/yr (shallow rooted plants – lawns)	**783**	**598**	**518**	**265**
Soil Moisture 200 mm/yr (moderately deep rooted plants – pasture)	**783**	**598**	**570**	**213**
Soil Moisture 300 mm/yr (deep rooted plants – trees)	**783**	**598**	**592**	**191**

Note : Data from Meteorological Service of Canada, 2008
ET – Evapotranspiration
Numbers rounded off

The potential evapotranspiration is the amount of evapotranspiration that could take place if there was sufficient precipitation available during the drier summer months. This becomes relevant where runoff from impervious surfaces is directed to pervious areas under post-development conditions as discussed below.

The site includes a wetland associated with and adjacent to the un-named creek flowing across the southern portion of the property. The wetland represents a small portion of the property and will remain unchanged under post-development conditions. It will therefore be included as part of the riparian area for purposes of the water balance analysis. Since there are no significant areas of standing water or ponds on the property, pond evaporation is therefore not applicable to the water balance. Storm water management ponds are also not proposed for the post-development condition.

4.2 Infiltration Factors

The partitioning of the water surplus between runoff and infiltration depends upon soil type, topography and cover type. Water infiltrates relatively easily through sands compared to clay. Flatter slopes tend to promote infiltration over steeper slopes and naturally vegetated areas promote infiltration over bare soils. Infiltration factors take into account these main factors in estimating the amount of infiltration that will occur under given site conditions.

Infiltration factors were calculated according to a method cited in MOEE (1995), and MOE (2003). Infiltration factors were calculated by summing individual sub-factors representative of the topography, soil type, and cover conditions.

The development area has varying conditions across the property. Infiltration factors have taken these conditions into account and reflect the predominant or typical conditions. Pre-development cover conditions consist predominantly of pasture lands characterized as containing plants with moderately deep roots. This cover type is assigned an infiltration sub-factor of 0.15. The topography is predominantly gently rolling with generally moderate gradients with the exception of the extreme southern portion of the property adjacent to the intermittent drainage channel and the wetland area which is relatively flat. The wetland area has a high groundwater table and is considered a discharge area. Therefore there will be little or no infiltration within this area. An average sub-factor of 0.20 is assigned to the topography representative of rolling topographic conditions.

Surface soils consist primarily of fine sand and silt underlying most of the property. The hydraulic conductivity of the major hydrogeological units was determined with in-situ hydraulic conductivity testing. Slug injection and withdrawal tests were performed on the on-site groundwater monitors on June 25, 2008. The analytical results are provided in Appendix 2. A Hvorslev analytical method was used to determine the hydraulic conductivity of the screened hydrogeological units. Groundwater monitors were screened into the different soil units found beneath the site including silty sand, silt, and silt till (BH1D),silt and sand (BH1S), sand and silt (BH2), sandy silt till/sand/silt (BH3), silt/silt and sand till (BH4). The analysis was completed using the Waterloo Hydrogeologic Inc. software package called Aquifer Test v3.5.

Hydraulic conductivity results varied from 2.23E-05 m/s for the sandy materials at BH1S to 3.74E-07 m/s for fine sand /silt/silt till at BH3. The geometric mean of the combined hydraulic conductivity results for the surficial sand and silt soil is 5.76E-06 m/s. The grain size analysis completed by Alston Associates Inc. (Appendix 2) indicates the predominant soil types to consist primarily of sand and silt. The equivalent soil percolation rate for the predominant soil type, sand and silt (SM soil classification) is estimated to be in the range of 75 mm/hr to 30 mm/hr (8 to 20 min/cm) as per Supplementary Guide SG-6 of the Ontario Building Code 1997 (Appendix 6). Infiltration trenches and pervious pipe infiltration systems require a minimum percolation rate of 15mm/hr (MOE, 2003). The predominantly fine sand and silt surficial soil types are considered to be suitable for infiltration trenches and pervious pipe infiltration systems.

Grading of the property and compaction of the soil due to heavy equipment movement may reduce the infiltration capability of the surficial soil until weathering processes and the action of roots from vegetation restore the pre-development conditions. As a conservative measure, a slightly lower infiltration sub-factor for the soil component of 0.25 has been selected to account for the reduced infiltration capacity under post-development conditions. The change in cover type from pasture lands to urban lawns will also result in a slight increase in runoff and a reduced infiltration factor from 0.15 for pasture lands to 0.05 for urban lawns. Summation of the infiltration sub-factors for the study area provides an infiltration factor of 0.65 for pasture lands under pre-development conditions. The sum of the post-development infiltration sub-factors changes to 0.50 under post-development conditions due to soil compaction and the change from pasture to manicured lawns. These are consistent with that indicated from the Base Flow Index for the area (Moin and Shaw, 1986) which indicates 55% to 60% of the water surplus is accounted for as stream base flows for this area. The slightly higher infiltration estimated for the site under pre-development conditions is due to the localized presence of more permeable soils. The Moin and Shaw analysis is based upon stream flows which are influenced by a

wider variety of soil conditions within the stream catchment areas. The wooded riparian area associated with the wetland remains unchanged under post-development conditions. For water budget purposes the wooded riparian area is treated as wetland. Infiltration factors for the site under pre-and post-development conditions are summarized in Table 2.

Table 5. Average Infiltration Factors

Sub Factors	**Description**	**Pre-Development**	**Post-development**
Pasture /Lawns		Pasture	Lawns
Topography	rolling	0.20	0.20
Soil	fine sand and silt	0.30	0.25*
Cover	pasture/lawns	0.15	0.05
Total		**0.65**	**0.50**
Tree Cover (riparian areas)		Trees	Trees
Topography	rolling	0.20	0.20
Soil	fine sand and silt	0.30	0.30
Cover	trees	0.2	0.2
Total		**0.70**	**070**

* *Represents Compaction under Post Development Conditions*

The pre-development water balance calculated for average annual conditions is summarized in Table 3.

Evapotranspiration is the largest component of the water balance representing about 70.5% of the total precipitation under pre-development conditions. The remaining water surplus represents about 29.5 % of total precipitation. Of the surplus, 65 % will infiltrate according to the infiltration factors. The remaining runoff will constitute 35% of the surplus. The current land use includes existing farm buildings with the remainder of the development area either pasture land or wetland.

Table 6. Water Balance - Existing Conditions

	Area (ha)	**Precipitation (m^3/yr)**	**Evapotranspiration (m^3/yr)**	**Infiltration (m^3/yr)**	**Runoff (m^3/yr)**
	2.49	19,497	13,749	2,927	2,820
		783 mm/yr	552 mm/yr	118 mm/yr	113 mm/yr
% of Total Precipitation		**100%**	**70.5%**	**15.0%**	**14.5%**

* *Numbers rounded off*

5.0 Post-development Water Balance

The distribution of water under post-development conditions was modeled for the proposed development. Post-development conditions were compared to pre-development conditions specifically with respect to changes in infiltration, runoff, evapotranspiration and evaporation. The water balance

analysis also addresses measures that will promote the maintenance of groundwater recharge under post-development conditions.

5.1 Proposed Land Uses

Details of the proposed development were provided on the Site Plan by, Page and Steele, January 2009. The proposed development plan includes a retirement residential complex and a medical building as shown on Figure 9. The proposed land uses, their respective areas, and the percent impervious for each land use as provided by Sernas is summarized in Table 4 below and shown on Figure 10.

Table 7. Proposed Land Uses

Retirement Residential	0.48	100
Medical Office	0.06	100
Parking	0.60	100
Landscaped Area	0.49	0
Landscaped Terrace	0.16	80
Wetland Buffer	0.43	0
Wetland	0.27	0
Total	**2.49**	
Average % Impervious (from Water Balance)		**63.0**

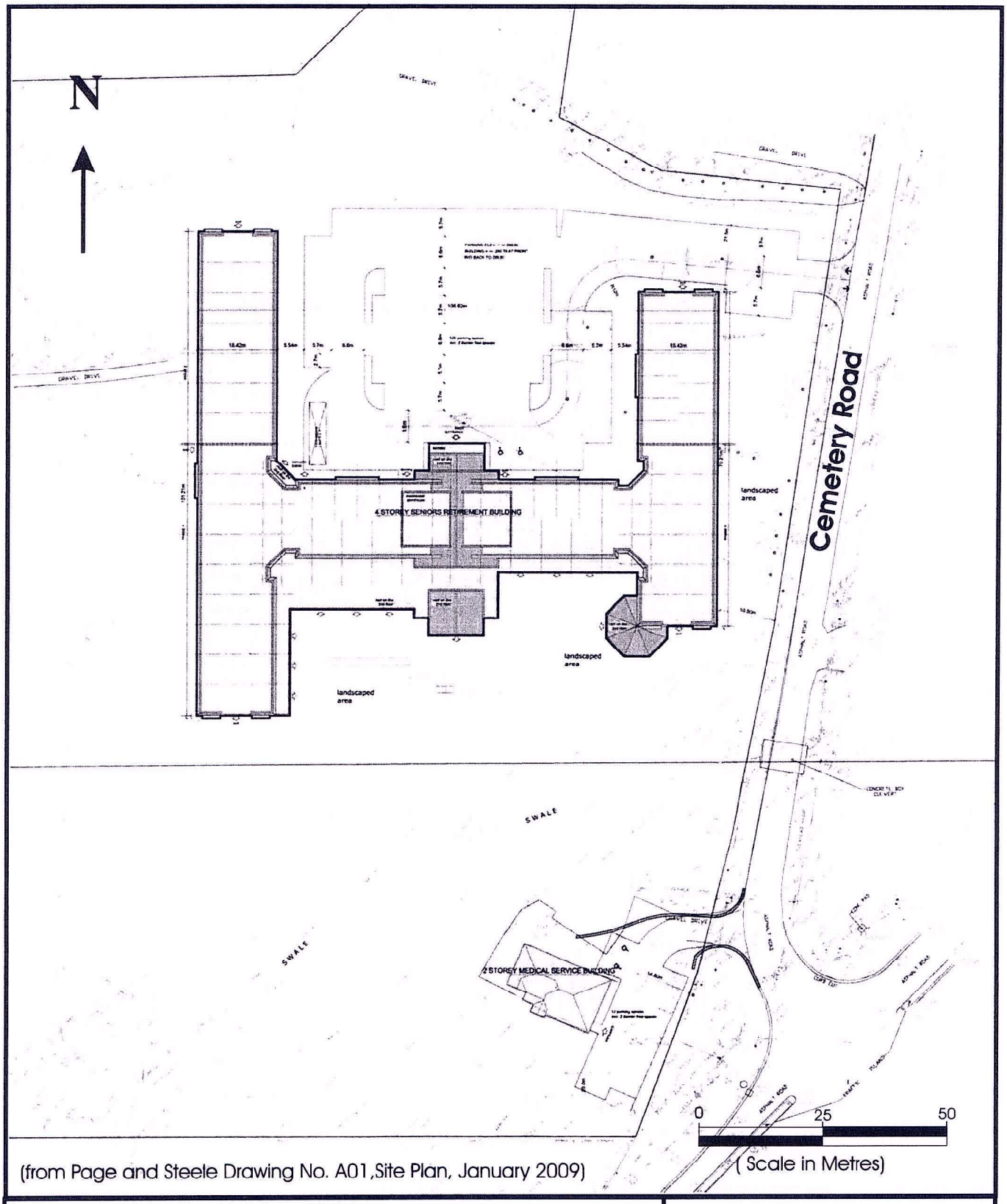
*Note: * Wetland area assumed impervious*

The per cent imperviousness of each land use category was provided by Sernas Associates. The change in land use with the proposed development will result in the creation of impervious surfaces described above. This will affect the water balance by redistributing the infiltration, runoff and evapotranspiration. The runoff will increase while the infiltration and evapotranspiration will decrease. In order to account for the movement of water on the property under post-development conditions, three functional categories, pervious, impervious connected, and impervious disconnected, were defined.

Within the pervious areas it is assumed that the surplus water will either runoff or infiltrate according to the appropriate infiltration factors. Runoff from pervious surfaces will ultimately flow into the storm water management system prior to discharging into local drainage ditches. The 'Connected' areas are those impervious surfaces that are connected to or drain directly into storm sewers. These consist primarily of parking areas and roadways. Concrete sidewalks are also considered to be connected to the storm sewer system. Functional categories are summarized in Table 8.

Table 8. Functional Categories for Post –development Land Use

Land Use Category	**Pervious**	**Impervious**	
	%	**Connected %**	**Disconnected %**
Retirement Residential	0	100	0
Medical Office	0	100	0
Parking /Driveways	0	100	0
Patio	20	0	100
Buffers/Landscaped Areas	100	0	100
Wetland	100	0	100



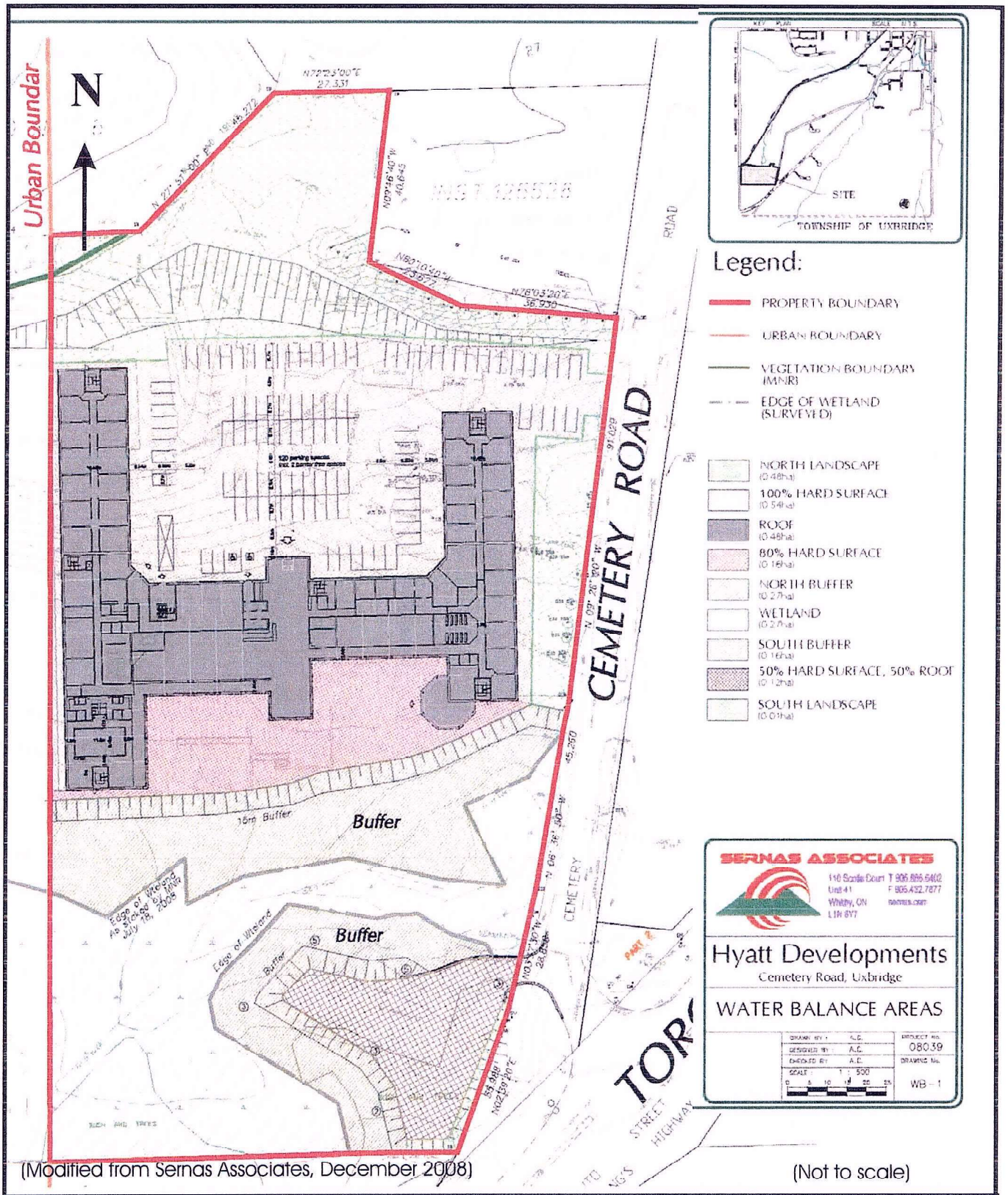
(from Page and Steele Drawing No. A01,Site Plan, January 2009)

Proposed Residential Development
Hyatt (Uxbridge) Inc.

Norbert M. Woerns
96 Lund Street, Richmond Hill, Ontario, Ph (905) 883- 0276

Figure 9
Site Plan

January 2009



(Modified from Sernas Associates, December 2008)

(Not to scale)

Proposed Residential Development
Hyatt (Uxbridge) Inc.

Norbert M. Woerns
96 Lund Street, Richmond Hill, Ontario, Ph (905) 883- 0276

Figure 10
Water Balance Areas

January 2009

5.2 Water Movement from Impervious Surfaces

The surplus water for both pervious and impervious surfaces is partitioned for the various land uses in the post-development water balance. Paved surfaces such as driveways and parking area shed water relatively rapidly. These are relatively flat surfaces with very gentle slopes toward catch basins that lead directly to storm sewers. A runoff factor of 0.85 is used for these areas to account for minor depression storage of water and evaporation. The remaining 15% is assumed to be lost to evaporation. Sloped roofs of the retirement residential units and the medical office building will have less opportunity for depression storage and more rapid runoff of precipitation. Sloped roofs are therefore given a runoff coefficient of 0.9 with the remaining 10% lost to evaporation. No flat roofs are planned however they would be treated similar to paved parking areas and driveways. Runoff factors are consistent with commonly accepted runoff coefficients for urban areas (MTC Drainage Manual, 1984).

In pervious areas, infiltration and runoff are partitioned according to soil type, topography, and cover as described in Section 4.2 and summarized in Table 8 above. The precipitation and evapotranspiration as well as pond evaporation components are provided by Meteorological Service of Canada (MSC). Where runoff from roof areas is directed onto pervious areas, there will be additional water available for infiltration, runoff, and evapotranspiration. In these instances the roof runoff is assumed to be directed either to the storm sewer or to pervious surfaces for infiltration after accounting for10% evaporation loss from the sloped roof of the proposed buildings. As a mitigation measure, roof runoff is directed onto pervious surfaces such as landscaped areas. The additional roof runoff added to the normal precipitation was used to calculate an 'effective precipitation' for the pervious areas receiving this water.

Roof runoff was used to calculate the amount of 'effective precipitation' that would be available for infiltration. The resulting effective precipitation was partitioned using a Thornthwaite and Mather (1957) analysis provided by the MSC. It was assumed that the distribution of the effective precipitation was proportional to the normal monthly precipitation. The resulting surplus water from this analysis was then modeled to either infiltrate or runoff using an infiltration factor.

The 'effective precipitation' was used to calculate a theoretical surplus using the potential evapotranspiration as the upper limit of evapotranspiration. The 'effective precipitation is the amount of water directed onto pervious surfaces that includes the normal precipitation plus any additional water directed from rooftops and patio runoff. Surplus water was calculated by subtracting the theoretical evapotranspiration from the effective precipitation. Infiltration was calculated on the resulting surplus by applying an appropriate infiltration factor to the surplus. A maximum infiltration value is based upon the soil hydraulic conductivity. The geometric mean hydraulic conductivity of the shallow sand and silt soil (5.76E-06 m/s) was used to establish a maximum theoretical infiltration. Under saturated soil conditions with soil porosity of about 0.3, this could theoretically result in about 50m of infiltration per year. Under a worst case scenario in the water budget analysis it was estimated that the soil would be required to infiltrate less than 2.0 m /yr. This indicates that average soil conditions on the property are capable of infiltrating the surplus water calculated from the effective precipitation values.

It is intuitively recognized that excess water generated from roof runoff may not infiltrate as efficiently as under normal precipitation conditions due to higher peak runoff volumes. This is dependent upon rate and method used to distribute runoff onto pervious areas. There is no established method to accurately account for this loss of efficiency in infiltration. One method proposed a reduced infiltration factor for incrementally higher volumes of water directed onto pervious surfaces. This has resulted in relatively minor changes to infiltration for values of additional water that are less than twice the normal precipitation. In the current analysis, most of the additional water directed onto pervious areas was

within this range of values. It was therefore not considered necessary to adjust the infiltration factor for the effective precipitation.

5.3 Post-development Water Balance Results

The water balance analysis for post-development conditions for the proposed development on the Cemetery Road property was completed by considering two development scenarios to assess the impact of the proposed development. The result of this analysis is presented in spreadsheets in Appendix 7.

Scenario 1

Initially it was assumed that under worst case conditions, all runoff from roofs and impervious surfaces would be directed to the storm water system via storm sewers. The results of this analysis indicated a loss of infiltration of about 1,683 m3/yr. With this loss of infiltration, the post-development infiltration was 1,245 m3/yr which represents about 6.4 % of total precipitation. The loss of infiltration is equivalent to a flow of 0.05 L/sec. Pre-development infiltration represents 15.0% of total precipitation compared to post-development infiltration of 6.4 % of total precipitation. Evapotranspiration was also reduced from 70.5 % to 39.1 % of total precipitation. The reduction in evapotranspiration is equivalent to 31.4 % of total precipitation. These changes resulted in a significant increase in runoff equivalent to 40.1 % of total precipitation. Runoff changed from about 14.5 % of total precipitation under pre-development conditions to about 54.5 % of total precipitation in Scenario 1 post-development conditions.

Scenario 2

Subsequent analysis considered different methods to promote infiltration. Directing runoff from roof areas onto the pervious surfaces in the residential areas was found to be an effective and practical method. Scenario 2 of the water balance analysis included directing of roof runoff to landscaped or natural open space areas. The calculated result indicates that there will be a significant improvement in the groundwater infiltration such that there will be a potential increase in infiltration under post-development conditions. There will be a net increase in infiltration of about 500 m3/yr which is equivalent to 0.02 L/sec. This represents a change from about 15 % of total precipitation under pre-development conditions to about 17.6 % of total precipitation under post–development conditions. The net gain in infiltration is equivalent to 2.6 % of total precipitation.

The Scenario 2 analysis relies upon surface runoff from roofs and patio area to be directed onto pervious surfaces. It is assumed that the roof runoff could feasibly be directed toward pervious surfaces. The direction of runoff from roofs and hard surfaces has been partitioned as follows:

North Roof Area Runoff
- 40% to North Paved Parking Area
- 15% to East Landscaped Area
- 45% to North Buffer

South Roof Area Runoff
- 100% to South Buffer Area

Patio Runoff
- 100% to North Buffer area

North and South Paved Areas
- 100% to storm drainage system

Roof runoff directed toward pervious surfaces is assumed to infiltrate according to the infiltration factors as discussed in Section 4.2. This takes into account the slightly reduced infiltration potential of the pervious areas due to soil compaction from construction activities. This applies to landscaped areas but not to the wetland buffer areas which are assumed to be left relatively untouched. The water budget areas are shown on Figure 10.

Infiltration Options

Infiltration measures such as infiltration trenches are considered a feasible option to augment infiltration. The soil units underlying the surface silt consist of sand and silt soil with areas. Infiltration trenches are considered to be suitable within these soils due to their granular texture and the relatively deep water table across the site. The silt and sand till (SC Soil Type) found at depth is expected to have a percolation rate in the range of 50 mm/hr to12 mm/hr (12 to 50 min/cm). These soils have estimated percolation rates that are marginally suited for infiltration trenches. They occur at sufficient depths that they are not expected to pose significant limitations to infiltrating surface runoff if infiltration trenches are considered. The local groundwater table is not considered a limitation over most of the property with the possible exception near the wetland boundary within the buffer areas. The construction of shallow swales around the outside edge of the buffer areas is recommended to promote infiltration of roof runoff that is directed into the buffer areas and to prevent direct runoff into the wetland through overland flow.

The resulting change in infiltration between pre- and post-development conditions is summarized in Table 9 below. Detailed results of each water balance scenario are presented in Appendix 7.

Table 9. Summary of Infiltration for Water Balance Analysis

Scenario	Description	Infiltration Change Post-development Conditions			Infiltration % of Total Ppt.
		(m^3/yr)	L/s	% of Ppt.	
Pre-development		0	0	0	15.0
1	Runoff to Storm Sewers (No mitigation)	-1,683	-0.05	8.6	6.4
2	Runoff to pervious areas from 100% of roof areas	501	0.02	2.6	17.6

Note : Ppt. = Precipitation

In the above post-development scenarios, the infiltration varies from a loss of about 1,683 m3/yr to a net gain of about 500 m^3/yr for Scenario 1 and 2 respectively, from pre-development conditions. The potential gain in infiltration is achieved by directing roof runoff onto pervious surfaces in such a manner that infiltration is encouraged by proper grading and assuming the native sandy soil is retained at surface and is not removed by grading or covered with finer textured fill materials. Surface swales are recommended around the periphery of the wetland buffer areas in order to intercept roof runoff and facilitate infiltration rather than runoff directly into the wetland.

Scenario 2 offers a significant improvement in post–development infiltration resulting in a potential gain in infiltration representing a 2.6 % increase in infiltration. Alternative measures such as the construction of infiltration trenches to accommodate roof runoff for infiltration also appear to be feasible but are not

considered necessary. The hydrogeological conditions provide favourable conditions for infiltration. Preliminary calculations indicate that an infiltration trench constructed within the sandy surficial soil and above the seasonally high water table can potentially accommodate the roof runoff from the main building.

6.0 Impact Assessment

6.1 Water Balance

The proposed development will result in about 63 % of the property as impervious surfaces which will result in a significant loss of infiltration (57%) without mitigation measures. The property has predominantly sandy and silty soil at surface. Site conditions are suitable for infiltration techniques such as directing of runoff onto pervious surfaces, infiltration trenches and third pipe infiltration schemes.

Mitigation measures including the directing of the majority of roof runoff toward the pervious surfaces will result in a substantial improvement in post-development infiltration with potentially a net increase of about 17% from pre-development conditions. This can be achieved with the direction of about 60% of the roof runoff from the north building and 100% of the roof runoff from the south building to pervious surfaces of the landscaped areas and the wetland buffer areas. The potential increase in infiltration using relatively clean roof runoff will result in a small increase in baseflow to the adjacent wetland. The slightly increased baseflow from the property should be beneficial to the maintenance of the adjacent wetland although the relatively small increase in baseflow will not be measurable.

Additional mitigation measures such as infiltration trenches would provide a slight increase in infiltration but would also require ongoing maintenance to achieve this result over the long term

Passive design features such as grassed swales along the periphery of the wetland buffer areas is the preferred approach to maintaining infiltration. This would provide similar benefits to infiltration trenches and would not require the ongoing maintenance of infiltration trenches.

The results of the water balance analysis shows that mitigation measures such as directing the majority (i.e. 60%) of the roof runoff to pervious surfaces will provide substantial benefits to infiltration such that there will be a potential increase in post-development infiltration. This should be beneficial in the maintenance of the wetland feature at the southern end of the property.

6.2 Wellhead Protection

The property is located just beyond and along the western edge of the well head protection zones for the Uxbridge municipal wells as shown in Appendix 8. The nearest municipal well is located about one kilometer to the northeast of the property. The vicinity of the property is considered to have high aquifer vulnerability to contamination. The property lies on the western edge of the modeled twenty-five year time of travel for the municipal well capture zones. An incident of groundwater contamination within this area is anticipated to reach the municipal wells in a period of over 25 years. The wellhead protection provisions of the Oak Ridges Moraine Conservation Plan therefore do not apply to this property. The proposed residential development does not constitute a risk to groundwater according to Schedule E-Table E5 'Land Use Groups by Risk to Groundwater, in the Durham Region Official Plan (2008).

The proposed commercial building at the south end of the property is to provide commercial office space likely to accommodate medical offices. This land use is also not considered to provide a significant risk to groundwater and may be classified as a low risk if it includes medical laboratories.

A Phase 1 Environmental site assessment has been completed on the subject property. Any contamination issues identified within this report will need to be addressed and remediated prior to site re-development.

The subject property is shown to lie within an area of high aquifer vulnerability. Normal urban land use activities such lawn maintenance with the use of fertilizers and herbicides, and winter road maintenance with the use of deicing products may pose a long term risk to groundwater quality and protection. The use of lawn maintenance chemicals and winter road maintenance chemicals should be reduced or eliminated within critical recharge areas of the wellhead capture zones. The subject property, although outside the 25 year time of travel wellhead protection zone, is up-gradient of the municipal well. The above property management measures should be encouraged.

6.3 Private Well Interference

The well survey results showed that most properties directly down-gradient to the northeast of the property are serviced by municipal water. The existing property as well as a number of properties to the north along Cemetery Road as well as the area to the west is serviced by private wells. Most nearby wells are reported to be between 11.3 m to about 61 m deep with the majority of the wells greater than 20 m deep. Well record information for this area suggests that there are two major aquifers supplying local wells. A shallow surficial aquifer that extends from surface to about 12 m deep and a second buried aquifer that found beneath fine grained soil at depths of about 7 m to greater than 27 m. The buried aquifer appears to be well protected from surface disturbance. The shallow surface aquifer extends north of the property and is more susceptible to surface disturbance. Most private wells north of the property are completed into the deeper buried aquifer and are protected from surface disturbance by a finer grained soil layer consisting of clay, gravel and sand deposits interpreted to consist of glacial till. As part of the proposed development there will be a small mechanical room located below ground requiring a full basement in this area. It is proposed to locate this facility in an area proposed for fill. The footings of this facility will be above existing ground (Aaron Christi, Sernas Associates, personal communication January 29, 2009. Therefore no dewatering is anticipated as a result of this below grade facility. The shallow groundwater level in the northern portion of the property was measured at about 6 m below surface in late June 2008. This is expected to vary seasonally. Re-grading and cutting proposed at the north end of the property will not result in lowering of the water table provided that the cut areas do not intersect the seasonally high groundwater table. This will need to be confirmed with detailed design. The seasonally high water table generally occurs during the spring (April/May) and fall (October/November) months.

To ensure that there are no unanticipated impacts on the groundwater system, routine groundwater level monitoring prior to and during the construction phase of this development should be undertaken at selected groundwater monitor locations. Quarterly monitoring is recommended to establish seasonal variations in groundwater levels.

7.0 Conclusions

The results of this hydrogeological investigation provide the following conclusions:

1) The property is underlain predominantly by sand and silt soil units.

2) The site has moderate infiltration potential and lies within a regional groundwater recharge area (Uxbridge Infiltration area).

3) The property contributes groundwater seepage to the maintenance of stream base flow for an intermittent stream and associated wetland located at the southern portion of the property.

4) Groundwater flow across the property within the underlying aquifer is towards the northwest with a northeasterly component of flow east of the property.

5) The property is located outside the 25 year time of travel wellhead protection area for the nearest Uxbridge municipal well.

6) Local ground water wells are completed in granular overburden deposit at depths of between 12 to 50 m. Most private wells appear to have adequate supplies of water that is generally of good quality. Locally the water quality is reported to be hard with noticeable iron content and in a few cases high sulphur content was noted.

7) The proposed development will result in the creation of impervious surfaces which will impact the natural water balance for the site. The proposed development, without mitigation measures, is expected to result in a significant loss of infiltration.

8) Site conditions are suitable for implementing groundwater infiltration mitigation measures such as directing roof runoff to pervious surfaces, infiltration trenches, and infiltration systems.

9) Directing of roof runoff onto pervious surfaces will potentially result in a net gain of infiltration of about 17% from pre-development levels. This is anticipated to provide some minor improvements to baseflow to the intermittent stream and wetland area at the southern end of the property.

10) The site is located in an area considered to have high aquifer sensitivity.

11) The proposed development is not anticipated to adversely affect adjacent and nearby private wells

8.0 Recommendations

The following recommendations are submitted for your consideration.

1) Roof runoff from residential institutional and commercial building should be directed onto pervious surfaces to mitigate the loss of infiltration from the creation of impervious surfaces.

2) Additional measures such as the construction of grass swales are recommended to facilitate infiltration of roof runoff within pervious areas. These should be located around the periphery of the wetland buffer areas and suitable landscaped areas where roof runoff can be directed.

3) Additional infiltration measures such as infiltration trenches may be considered to facilitate infiltration where site conditions prohibit the discharge of roof runoff onto pervious surfaces.

4) During construction, measures should be taken to reduce or eliminate the risk of petroleum fuel spills on the property. This should include the establishment of a secure refueling area for construction equipment with spill containment facilities and the storage of petroleum fuels or any other hazardous chemicals off-site during construction.

5) On-site groundwater level monitoring is recommended on a quarterly basis at selected groundwater monitors prior to and during construction to establish baseline groundwater information and to monitor for possible unanticipated impacts to the groundwater system.

6) The results of the water quality analysis from private wells should be forwarded to the respective landowners. Re-sampling of the down-gradient private well for microbiological parameters should be completed by the homeowner to confirm the microbiological results.

7) Any unused wells discovered on the property during the course of construction should be properly plugged and abandoned by a licensed well driller according to Ontario Regulation 903 as amended by Regulation 128.

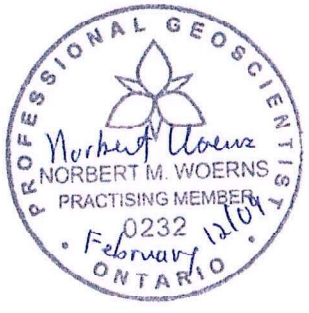
8) The future use of lawn maintenance chemicals and winter road maintenance chemicals should be reduced or eliminated on this property since it lies within an area of high aquifer vulnerability. Further specific direction on this is anticipated from Source Water Protection Plans currently in progress.

9) Environmental sensitivity of the site with respect to the protection of groundwater supplies for the community is an important consideration if groundwater supplies are to be protected in the long term. An environmental awareness program should be integral to the construction and sale of the proposed development parcel.

The above noted report was has been compiled from existing hydrogeological information available at the time of this study and supplemented with on-site subsurface investigations to confirm shallow soil and groundwater conditions.

Prepared By :

Norbert Woerns



Norbert Woerns, M.Sc., P.Geo.

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APPENDICES

APPENDIX 1

MOE WELL RECORD SUMMARY

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	05	023	46-05837	647497 4881395	1050	1974/05	1413	05	FR	0054	1	45	6	2 :0	DO	0050 04	ROHWER NICK CONST BRWN SAND 0003 BRWN SAND CLAY 0040 RED SAND 0054
CON	05	023	46-04938	647550 4881200	1070	1971/10	5459	30	FR	0030	20			:	DO		MANCINI CONST LOAM 0001 BRWN FSND CLAY 0030 BRWN MSND 0035
CON	05	023	46-04937	647530 4881220	1070	1971/11	5459	30	FR	0040	35			:	DO		MANCINI CONST LOAM 0001 BRWN MSND CLAY 0040 BRWN CLAY FSND 0045
CON	05	023	19-12657	648446~ 4881634		1995/10	4645	06	FR	0155	60	150	7	2 :0	DO	0151 04	JAY,M HOLDINGS LTD. BRWN CSND CLN LOOS 0045 BRWN SILT CSND 0055 BRWN SILT VERY FSND 0090 BRWN SILT FSND HARD 0105 BRWN SILT MSND 0140 BRWN SAND SILT LOOS 0155 BRWN SILT FSND LOOS 0165 BRWN SILT CSND 0170
CON	05	023	19-12656	648446~ 4881634		1995/10	4645	64	FR	0155	49	150	30	24:	DO	MN0151 04	JAY,M HOLDINGS LTD. BRWN SAND LOOS 0018 BRWN SILT SAND SOFT 0030 BRWN CLAY SILT 0043 BRWN SILT VERY FSND 0080 BRWN SILT VERY FSND 0085 BRWN SILT VERY FSND 0090 BRWN SILT SAND STNS 0100 BRWN SILT MSND 0120 BRWN SILT MSND FSND 0150 BRWN SILT FSND LOOS 0160 GREY CLAY DNSE 0162
CON	05	023	19-12922	648446~ 4881634		1996/07	6874	03	FR	0039	39	42	25	2 :0	DO		HURLEY CLARANCE
CON	05	024	19-15055	648317~ 4882020		2001/04	5459	06	FR	0060	4	50	10	2 :30	DO	0065 03	TAYLOR,LISA BLCK LOAM 0002 BRWN CLAY SOFT 0012 BRWN SAND 0017 BRWN CLAY SOFT 0046 BRWN CLAY GRVL HARD 0060 BRWN GRVL 0068
CON	05	024	46-05552	649230 4882260	1000	1973/08	1413	05	FR	0172	48	58	10	3 :30	DO		MICHENER C E BRWN SAND 0047 BRWN CLAY 0051 BRWN FSND SILT 0104 BLUE FSND SILT 0128 BLUE CLAY 0151 GREY CLAY STNS BLDR 0160 BLUE CLAY 0172 RED SAND GRVL 0177 GREY CLAY STNS 0194
CON	05	024	46-05869	649030 4882181	1075	1974/04	4743	06	FR	0098	45	60	15	2 :0	DO	0104 04 0108 04	TAUNENBAUM J BRWN SAND 0080 BLUE CLAY 0098 BRWN FSND 0112
CON	05	025	19-14667	648190~ 4882404		2000/07	5459	06	FR	0374	41	52	300	:20		0374 32	JAY,M HOLDINGS BRWN SAND SILT STNS 0096 GREY CLAY SAND SILT 0130 GREY STNS SILT SAND 0140 GREY CLAY SAND SILT 0282 GREY STNS SAND CLAY 0312 GREY CLAY SAND STNS 0350 GREY STNS SAND SILT 0366 GREY CLAY SAND STNS 0370 GREY SAND SILT STNS 0412 BLCK SHLE 0418
CON	05	025	19-14665	648190~ 4882404		2000/07	5459	02	FR	0374				:		0374 10	JAY,M HOLDINGS BRWN SAND SILT CLAY 0112 GREY STNS SILT CLAY 0114 GREY CLAY SAND SILT 0122 GREY STNS SILT CLAY 0178 GREY CLAY SAND SILT 0370 GREY STNS SILT CLAY 0382 GREY SAND SILT STNS 0402 BLCK SHLE 0411
CON	05	025	19-14664	648190~ 4882404		2000/05	5459							:			JAY, M HOLDINGS BRWN SAND 0084 BRWN SILT SAND GRVL 0096 GREY SAND GRVL CLAY 0152 GREY SILT GRVL CLAY 0192 GREY SAND GRVL CLAY 0282 GREY GRVL SILT CLAY 0304 GREY SAND GRVL SILT 0308 GREY SAND GRVL CLAY 0336 GREY SAND SILT GRVL 0368

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	05	025	19-14666	648190~ 4882404		2000/05	5459						:				JAY,M HOLDINGS BRWN SAND 0090 BRWN SAND CLAY 0118 BRWN GRVL SAND SILT 0128 GREY SNDS SILT CLAY 0246 GREY GRVL SILT CLAY 0248 GREY SILT CLAY LYRD 0314 GREY SILT GRVL CLAY 0350 GREY SAND SILT CLAY 0368
CON	05	025	19-14663	648190~ 4882404		2000/05	5459						:				JAY,M HOLDINGS BRWN GRVL 0114 GREY CLAY SNDS SILT 0138 BRWN GRVL 0142 GREY CLAY SNDS SILT 0182 BRWN SAND 0192 GREY CLAY SNDS SILT 0198 BRWN SAND 0214 GREY CLAY SNDS SILT 0298 GREY SNDS CLAY SILT 0314 GREY CLAY SNDS SILT 0336 GREY SNDS SILT LYRD 0426
CON	05	025	19-13286	648190~ 4882404		1997/05	5459	06	FR	0294	44	49	10	4 :0	NU	0376	34	JAY, M HOLDINGS BLCK LOAM 0001 BRWN SAND 0029 BRWN CLAY SAND STNS 0078 GREY SILT CLAY 0091 GREY CLAY SAND STNS 0122 GREY CLAY SILT 0164 GREY SILT SAND 0188 GREY CLAY SAND STNS 0286 GREY SAND SILT FGRD 0294 GREY CLAY CLN 0414 BLCK SHLE 0417
CON	05	025	19-13287	648190~ 4882404		1997/05	5459	02	FR	0286	30		0	3 :0	NU	0080	10	JAY, M HOLDINGS BLCK LOAM 0001 BRWN SAND SILT 0029 BRWN CLAY SAND 0078 GREY SAND STNS SILT 0091 GREY CLAY SLTY 0122 GREY CLAY STNS 0164 GREY SILT SAND 0188 GREY CLAY STNS 0286 GREN FSND DRTY 0294 GREY SAND CLN 0414
CON	05	025	46-02985	649017~ 4882775	1015	1964/10	2306	06	FR	0180	25	200	5	4 :0	ST DO			GOLDBERG HAROLD LOAM 0010 MSND 0120 MSND CLAY GRVL 0220 GRVL 0223
CON	05	025	46-02963	648052 4882544	1065	1961/08	3414	04	FR	0100	45	90	2	4 :0	DO			LANGDON N LOAM 0001 CLAY MSND STNS 0099 MSND GRVL 0100
CON	05	025	19-04797	647600 4882400	1055	1977/08	4743	06	FR	0126	33	65	10	3 :0	DO	0127	03	ANCHOR P BRWN SAND LOOS 0045 GREY SAND CLAY 0065 GREY SAND VERY SLTY 0080 GREY SAND CLAY 0126 GREY SAND PCKD WBRG 0130
CON	05	025	19-04685	648200 4882600	1060	1977/07	4743	06	UK	0122	35	65	10	0 :30	DO	0124	03	MOORE PETER BRWN SAND 0045 BLUE CLAY SAND 0122 GREY SAND CLN 0127
CON	05	025	19-07481	649000 4882500	1000	1985/09	1413	06	FR	0055	16	35	10	1 :30	DO	0051	04	WILLIAMSON A BRWN SAND DRY 0011 BRWN CLAY DNSE 0036 BRWN MSND LOOS 0055
CON	05	025	19-07267	647150 4882250	1025	1984/06	5459	06	FR	0106		106	15	2 :0	DO	0106	03	LEWIS T BRWN SAND STNS 0021 GREY STNS 0024 BRWN SAND STNS 0027 BRWN CLAY SNDY 0082 BLUE CLAY STNS 0090 GREY SAND STNS 0097 WHIT CLAY STNS 0101 GREY SAND STNS 0110
CON	05	025	46-06297	647784 4882429	1050	1975/08	1413	05	FR	0208	60	70	10	3 :0	DO	0204	04	HEIDI JOSEPH RED SAND 0030 BRWN SAND CLAY 0050 GREY CLAY SILT STNS 0200 GREY SAND 0208
CON	05	025	19-09797	648200 4882568	1056	1989/03	4743	06	FR	0183	58	180	6	5 :0	DO	0183	05	RAYMOND, PAT BRWN LOAM 0003 BRWN SAND SOFT 0052 GREY CLAY GRVL HARD 0088 GREY CLAY BLDR 0097 GREY CLAY GRVL 0103 BRWN SAND SOFT 0116 GREY CLAY STNS HARD 0148 GREY CLAY BLDR 0183 BLCK SAND SOFT 0188 GREY CLAY HARD 0192
CON	05	026	19-13801	648057~ 4882796		1998/09	1413	07	FR	0242	60	220	200	2 :	DO	0239	03	UXBRIDGE VETER.HOSP. BRWN FSND PCKD 0080 GREY CLAY STNS BLDR 0170 GREY CLAY GRVL CMTD 0220 GREY CLAY STNS HARD 0230 BLCK CSND CGVL CLN 0242

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	05	026	19-05825	647200 4882400	1050	1980/06	3109	30	FR	0015	15			6 :0	DO		KUEHL F LOAM 0001 BRWN CLAY 0014 CSND 0025
CON	05	026	19-09135	648057~ 4882796		1988/04	1413	06	FR	0214	50	140	200	3 :	IN	0202 12	ACTON, HARVEY BRWN SAND PCKD 0010 BRWN CLAY SOFT 0020 BRWN SAND LYRD PCKD 0053 BRWN CLAY LYRD HARD 0068 GREY CLAY HARD 0082 GREY CLAY GRVL LYRD 0095 GREY SAND PCKD 0108 GREY CLAY GRVL HARD 0128 GREY CLAY STNS HARD 0169 GREY CLAY HARD 0184 BLCK MSND MSND 0199 BLCK GRVL SAND CSND 0214
CON	05	026	19-10868	648876 4882933	1004	1990/11	1350	06	FR	0076	21	50	10	2 :0	DO		HUNTINGTON, B BRWN SAND 0006 YLLW CLAY 0018 BRWN SAND 0025 BRWN SILT 0051 GREY CLAY 0054 GREY SILT 0062 GREY CLAY GRVL 0076 BRWN GRVL SAND 0077
CON	05	027	46-02964	648908 4883418	970	1966/09	3414	06	FR	0141	FLW			:	DO		HARDWARE MOORE CLAY SILT 0035 CLAY BLDR 0090 CLAY 0135 GRVL 0141
CON	05	027	19-04832	647050 4882800	1045	1977/06	2214	30	UK	0010	10	27	5	0 :30	DO		RAY CHARLES W BRWN CLAY STNS PCKD 0008 BLUE CLAY STNS CMTD 0010 BLUE CLAY SAND SLTY 0028
CON	05	027	19-05641	647950 4883000	1000	1979/12	3109	30	FR	0024	14			8 :0	DO		JANKOWSKI H LOAM 0002 BRWN CLAY STNY 0023 BLUE CLAY SNDY 0034 BLUE CLAY SLTY 0041
CON	05	028	19-13701	647801~ 4883578		1998/07	6874							:	DO		PASKO, LUCY
CON	05	028	46-02965	648695 4884028	1000	1953/06	1413	04	FR	0140	35	45	5	5 :0	ST DO		EWEN GORDON PRDG 0040 HPAN 0140
CON	05	028	46-02966	647935 4883815	1050	1960/10	5420	34	FR	0010	10		2	:	DO		MCGLAUGHLIN G LOAM MSND 0001 YLLW CLAY MSND 0007 MSND 0017 BLUE CLAY 0018
CON	05	028	46-02967	647823 4883715	1060	1961/01	1413	05	FR	0166	70	84	12	1 :0	DO	0158 08	MACLACHLAN G M CLAY STNS 0055 SILT CLAY 0060 CLAY GRVL 0064 BLUE CLAY 0152 CSND 0166
CON	05	028	46-02968	648695 4884028	1000	1965/12	5420	30	DRY					:			EWENS GORDON LOAM MSND 0002 BRWN CLAY MSND 0012 BLUE CLAY 0040
CON	05	028	46-03806	646900 4883200	1075	1968/11	2214	30	FR	0024	24	34	3	:	DO		PASCO WILLIAM LOAM 0002 BRWN CLAY 0004 GRVL CSND 0015 GREY CLAY STNS 0024 GRVL 0026 GREY CLAY 0036
CON	05	028	46-05329	647000 4883050	1065	1972/07	1350	06	FR	0163	87	95	10	3 :0	DO	0159 03	WOODY J BRWN SAND GRVL 0068 GREY CLAY GRVL 0090 GREY GRVL SILT 0094 GREY CLAY 0158 BRWN SAND 0163
CON	05	028	46-04943	646870 4883220	1075	1971/04	5459	05	FR	0162	74	120	15	1 :30	DO	0163 04	PAPESH C BRWN MSND 0045 BLUE CLAY 0055 BLUE CLAY STNS 0080 BLUE CLAY STNS 0162 BLCK CSND 0167
CON	05	028	19-10361	648590 4883987	1020	1989/12	1413	06	FR	0173	40	160	150	1 :0	DO	0166 06	HUNTER, RON BRWN CLAY STNS HARD 0025 GREY CLAY STNS HARD 0030 BRWN SAND FSND 0032 GREY CLAY STNS HARD 0160 BLCK GRVL CGVL CLN 0173
CON	05	029	19-13576	647672~ 4883959		1998/03	1350	06	FR	0169	55	140	6	2 :0	DO	0166 04	RAPONI, T BRWN CLAY SAND 0012 YLLW CLAY GRVL 0029 BRWN SAND GRVL 0045 BRWN CLAY 0054 YLLW CLAY GRVL 0070 GREY CLAY GRVL 0152 BRWN SILT 0165 GREY CLAY 0169 BRWN SAND 0173
CON	05	029	46-02969	647750 4883923	1080	1966/10	3519	07	FR	0140	60	110	25	5 :0	ST DO	0145 05	SCOTT L R LOAM 0002 CLAY STNS 0030 HPAN 0090 WHIT CLAY 0140 BLCK GRVL 0150

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	05	029	19- 05000	646800 4883600	1050	1978/03	4743	06	FR	0175	70	145	10	2 :0	DO	0175	03	WAYNE GINDY BRWN SAND CLAY 0050 BLUE CLAY SAND SOFT 0082 BRWN SAND CLAY MUCK 0120 BRWN CLAY SAND 0130 GREY SAND SILT 0145 GREY SAND CLAY STKY 0157 GREY SAND SILT 0163 BLUE SAND CLAY 0173 GREY CSND 0178
CON	05	029	19- 05136	648550 4884200	975	1978/09	4743	06	FR	0186	55	170	10	2 :0	DO	0186	03	ORTON HOMES INC BRWN CLAY STNS 0021 YLLW SAND CLAY MUCK 0023 BLUE CLAY 0178 GREY SILT CLAY SOFT 0186 GREY SAND GRVL SLTY 0190
CON	05	029	46- 06008	647900 4884183	1075	1974/07	5459	06	FR	0070	45	74	5	3 :0	DO	0070	04	VANCE JOHN BRWN SAND GRVL 0007 BLUE CLAY STNS 0062 BLUE SAND 0064 BLUE CLAY 0070 BLUE SAND 0074
CON	05	029	46- 06642	647800 4883850	1075	1976/09	4743	06	FR	0141	75	95	10	5 :0	DO	0141	03	FIELDING JOON PRDG 0008 BRWN CLAY STNS HARD 0042 BLUE CLAY 0085 BLUE CLAY GRVL LYRD 0090 BLUE CLAY 0108 GREY CLAY STNS HPAN 0137 GREY SILT 0141 GREY GRVL CLAY 0144
CON	05	029	19- 11758	647732 4883761	1070	1992/11	4743	06	FR	0062	9	39	10	3 :30	DO	0062	06	WOOD, B BRWN CLAY SAND LOAM 0019 BRWN CLAY STNS 0038 BLUE CLAY SOFT 0052 BRWN SAND FSND 0062 BRWN SAND CGRD 0065 BRWN SAND CLAY LYRD 0070
CON	05	030	19- 14988	647545~ 4884349		2001/02	5459	06	FR	0145	95	145	10	1 :0	DO	0152	03	KING,ELCHED BRWN CLAY STNS 0024 GREY CLAY SILT 0035 GREY CLAY SAND 0042 GREY CLAY 0124 GREY CLAY SAND 0145 GREY CSND 0155
CON	05	030	19- 06793	646900 4884300	1050	1983/12	4738	06	FR	0112	52	62	20	2 :0	PS	0119	03	UXBRIDGE WORKS DEPT BRWN CLAY SAND SOFT 0012 BRWN SAND GRVL CLAY 0068 BRWN CLAY SAND SOFT 0112 BRWN CGVL CSND 0122
CON	05	030	46- 05315	648450 4884730	1010	1972/06	5459	30	FR	0023	6			:	DO			ALISON G LOAM 0002 BRWN FSND 0012 BLUE SAND STNS 0023
CON	05	031	46- 03890	647065 4884525	1087	1968/07	3102	30	FR	0005	5		3	:	DO	0005	13	LANGENHUTZEN A LOAM 0002 CLAY 0005 CLAY 0018
CON	05	031	46- 05566	648180 4884840	1050	1973/08	4743	06	FR	0160	120	140	9	2 :0	DO	0162	04	ADDISON J BLCK LOAM 0001 BRWN CLAY STNS 0004 BRWN GRVL CLAY 0006 YLLW CLAY 0022 BLUE CLAY 0095 BLUE CLAY STNS 0130 RED CLAY 0160 GREY SAND GRVL 0166
CON	05	031	19- 13029	647412~ 4884746		1996/11	1413	06	FR	0150	128	135	10	3 :30	DO	0147	03	WEIDMARK, PAUL/JUDY BLCK LOAM PCKD 0002 BRWN CLAY SAND PCKD 0012 GREY CLAY STNS HARD 0126 GREY CLAY DNSE 0138 BLCK SAND GRVL PORS 0150 GREY CLAY SNDS LYRD 0158
CON	05	031	19- 11927	647412~ 4884746		1994/03	1413	06	FR	0178	119	160	40	1 :0	DO	0175	03	819087 ONT. LTD. BRWN CLAY HARD 0012 BRWN SAND GRVL LOOS 0017 GREY CLAY SILT CMTD 0137 BLCK GRVL SILT LYRD 0170 BLCK GRVL SAND CLN 0178
CON	05	031	19- 11928	647412~ 4884746		1994/03	1413	06	FR	0177	119	160	40	1 :0	DO	0174	03	819087 ONT. LTD. BRWN SAND CLAY PCKD 0017 GREY CLAY STNS HARD 0130 BLCK GRVL SAND SLTY 0167 BLCK GRVL CSND CLN 0177
CON	05	031	19- 11834	647412~ 4884746		1993/11	1413	06	FR	0185	135	175	15	1 :0	DO	0182	03	WILLS, HOWARD BRWN CLAY STNS HARD 0037 GREY CLAY HARD 0120 BLCK GRVL CSND 0123 GREY CLAY HARD 0165 BLCK GRVL CSND 0185

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	05 031	19-08788	647256 4884683	1083	1987/05	5459	06	FR	0131	105	115	15	1 :0	DO	0130	03	CLAYTON LOAM 0002 BRWN CLAY STNY 0019 GREY CLAY STNY 0125 BRWN CLAY STNY 0131 GREY SAND CSND 0133
CON	05 031	19-09893	647212 4884488	1073	1989/05	1413	06	FR	0126	40	112	10	1 :30	DO	0123	03	FINTELMAN, DICK J BRWN CLAY SOFT 0025 BRWN GRVL SAND LOOS 0035 BRWN SAND FSND 0043 GREY CLAY STNS HARD 0055 GREY CLAY STNS HARD 0120 BLCK GRVL SAND LOOS 0126
CON	05 032	19-14607	647281~ 4885128		2000/02	1663							:	NU			MULTIMATIC
CON	05 033	19-13934	647147~ 4885542		1999/01	5459							:	NU			CARTON,MR
CON	05 033	19-13935	647147~ 4885542		1999/01	5459	06	FR	0240	164	230	5	1 :30	DO	0240	03	BARTON,MR BRWN CLAY SNDY 0019 BRWN SAND CLAY 0027 GREY CLAY 0093 GREY CLAY HARD 0160 GREY CLAY STNS 0173 GREY CLAY 0230 GREY SILT CLAY 0240 GREY SAND FSND 0243
CON	05 033	19-13901	647147~ 4885542		1998/12	5159	06	FR	0173	147	173	5	2 :30	DO	0174	03	MITCHELL,MR BRWN SAND SILT 0023 GREY CLAY HARD 0037 GREY CLAY SNDY 0106 BRWN CLAY SNDY 0115 GREY CLAY SOFT 0146 GREY GRVL CLAY 0153 GREY CLAY SOFT 0173 GREY GRVL 0177
CON	05 033	19-13900	647147~ 4885542		1998/12	5459	06	FR	0183	148	180	10	1 :	DO	0184	06	TARGUSON BRWN CLAY SAND 0019 GREY CLAY HARD 0027 GREY CLAY SOFT 0114 GREY CLAY SAND 0133 GREY CLAY SOFT 0168 GREY SAND SILT 0174 GREY CLAY SOFT 0183 GREY SAND MSND 0190
CON	05 033	46-02970	648036 4885867	1090	1965/12	1413	05	FR	0193	153	165	10	3 :0	ST	D00185	08	DIERGARDT H G BRWN CLAY 0019 MSND 0030 BLUE CLAY 0110 BLCK CLAY 0175 BLCK MSND GRVL 0193
CON	05 033	19-04798	648100 4885750	1090	1977/08	1413	05	FR	0185	147	156	8	2 :0	DO	0177	08	MONTGOMERY WILLIAM BRWN CLAY STNS HARD 0026 BLUE CLAY STNS HARD 0135 BLUE CLAY DNSE 0150 BLCK CLAY STNS DNSE 0168 GREY SAND GRVL SILT 0185
CON	05 033	19-05105	648150 4885700	1085	1978/07	4743	06	FR	0218	160	200	5	3 :0	DO	0224	05	MORRISON ROBERT BRWN CLAY SAND 0018 BLUE CLAY SAND SOFT 0154 GREY SAND 0155 BLUE CLAY SAND 0192 GREY SAND 0193 BLUE CLAY SOFT 0218 BLUE CLAY FSND LYRD 0229
CON	05 033	46-06620	648160 4885550	1085	1976/08	2402	06	DRY					:				MONTGOMERY R L
CON	05 033	46-05666	648140 4885634	1085	1973/11	2214	30	FR	0015	15	18	5	1 :0	DO			CLAY 0132 GRVL HPAN 0174 HPAN 0215 CLAY 0220 WEBSTER R S BLCK LOAM 0001 BRWN CLAY SILT 0015 BRWN SAND 0022
CON	05 034	19-14686	647008~ 4885948		2000/07	1413	06	FR	0197	140	197	60	1 :	DO	0194	03	BUCHANAN,JANET LESLI BRWN SAND PCKD 0014 GREY CLAY SOFT 0150 GREY SAND SOFT PCKD 0170 GREY CGVL 0197
CON	05 034	19-05316	647150 4886650	1075	1979/04	1413	05	FR	0295	135	197	8	3 :30	ST	0291	04	FARM QUAKER RIDGE BRWN CLAY PCKD 0018 BRWN CLAY STNS HARD 0061 BRWN SAND GRVL LOOS 0063 GREY CLAY SILT STNS 0160 BRWN SAND GRVL CMTD 0163 BLCK CLAY STNS HARD 0247 GREY CLAY STNS HARD 0286 GREY SAND CLN LOOS 0295
CON	05 034	46-05425	647770 4886110	1085	1973/04	3414	30	UK	0060	15	66	4	1 :0	DO			WILSON W LOAM 0001 BRWN CLAY 0015 CLAY GRVL 0027 BLUE CLAY 0060

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	06	026	19-06401	649727 4883568	922	1982/05	4743	06	FR	0014	10	44	5	2 :30	CO	0040 04	DOUGLAS HOLDINGS SAND CLAY LOOS 0014 BRWN SAND LOOS 0044 GREY CLAY SILT 0054
CON	06	026	46-02986	650859 4883756	895	1962/11	3414	04	FR	0041	13	44	7	18:30	DO	0053 04	MCTAVISH J A LOAM 0001 BRWN FSND 0041 GRVL 0057
CON	06	026	46-04739	649130 4883170	975	1971/05	1413	05	FR	0083	15	77	9	2 :30	DO	0075 08	DELIC M BRWN MSND 0015 BRWN CLAY MSND 0046 BRWN SILT CLAY MSND 0074 RED FSND 0083
CON	06	026	19-04819	649450 4883200	970	1977/09	4743	06	UK	0055	15	35	15	2 :0	IN	DO0057 08	CANADIAN TAX COCK YLLW SAND FILL 0004 BRWN SAND GRVL LOOS 0020
CON	06	026	19-05027	649800 4883550	920	1978/05	4743	06	FR	0048	12	46	8	2 :0	DO	0050 04	BRWN SAND CLAY DRTY 0055 GREY SAND CLN 0065 NOBLE TRANSPORT CO L
CON	06	026	19-06454	651000 4883600	925	1982/05	5459	06	FR	0054	3	50	15	:	DO	0059 03	BRWN SAND CLAY LOOS 0017 YLLW CLAY SNDY 0035 BRWN FSND 0054 JOSEPH P
CON	06	026	19-05749	649600 4883550	1050	1980/07	4743	06	FR	0056	12	28	20	3 :0	CO	0044 12	BRWN CLAY 0005 BRWN GRVL 0009 BRWN SAND CLAY 0028 BLUE SAND 0034 BLUE SAND CLAY 0054 BRWN SAND 0062 WILLIAMSON BUICK
CON	06	026	19-05922	649700 4883550	1050	1980/11	4743	06	FR	0048	15	43	8	3 :0	CO	0044 04	YLLW SAND CLAY LOAM 0030 BRWN SAND CLAY 0042 BRWN FSND 0056 BRWN CLAY SAND 0068 GREY CLAY STNS HPAN 0070 TATOA GO-TRANSIT
CON	06	026	19-05765	649500 4884200	1050	1980/06	1413							:	NU	DO	WHIT SAND CLAY 0016 BRWN CLAY SAND 0030 BRWN SAND 0048 BRWN SAND CLAY LYRD 0063 BRUHEAU S
CON	06	026	46-06378	649446 4883244	975	1975/11	1413	05	FR	0085	28	60	9	2 :0	ST	DO0076 08	BRWN SAND DRY 0008 BRWN CLAY DNSE 0023 GREY CLAY DNSE 0040 GREY SILT SOFT 0046 WOOD DOUG
CON	06	026	46-05834	649505 4883383	950	1974/04	1413	05	FR	0058	18	23	9	2 :0	DO	0050 08	RED SAND 0030 BRWN SAND SILT 0078 GREY FSND 0085 THOMPSON P A
CON	06	026	46-06384	650724 4883754	910	1975/11	4743	06	FR	0040	7	30	12	2 :0	ST	DO0042 08	BLCK LOAM 0003 BRWN SAND 0033 BRWN FSND 0044 RED SAND 0058 DEACON H A
CON	06	026	19-09539	650982 4883672	902	1988/09	4743	06	FR	0070	7	70	7	2 :15	DO	0072 03	BRWN SAND 0007 YLLW CLAY 0040 BRWN SAND 0050 SMITH, D
CON	06	027	19-14533	649891~ 4883842		2000/04	1413	06	FR	0102	30	92	10	1 :	DO	0094 08	BRWN LOAM 0002 BRWN SAND WBRG LOOS 0027 GREY CLAY SAND LYRD 0051 BRWN CLAY SAND MUCK 0060 BRWN SAND CLN 0075 BRWN CLAY SNDY MGRD 0080 VANGINHOVEN, HUBERT
CON	06	027	46-02987	649294 4883297	950	1961/08	3414	04	SA	0105	40			:	DO		BRWN SAND PCKD 0027 BRWN SAND CLAY SOFT 0050 BRWN FSND 0075 GREY FSND 0102 BERNHARDT P T
CON	06	027	46-04305	650600 4884100	925	1969/04	2104	06	UK	0051	10	40	7	3 :0	DO		LOAM 0001 CLAY MSND 0047 SILT 0105 GREY CLAY GRVL 0380 BLCK SHLE 0450 FOSTER C W
CON	06	027	46-04316	650830 4884170	895	1969/04	2104	06	FR	0019	3	18	22	3 :0	CO		PRDG 0012 GREY CLAY STNS 0015 BRWN MSND GRVL 0025 BRWN CLAY MSND 0045 BRWN CSND 0055 FOSTER C W
CON	06	027	19-04795	649400 4883700	970	1977/06	4743	06	FR	0055	17	42	20	2 :30	DO	0058 12	LOAM 0002 BRWN CLAY MSND 0008 BRWN MSND GRVL 0019 CSND GRVL 0020 WILLIAMSON ALEX
																	BRWN SAND FILL 0008 BRWN SAND LOOS 0016 BRWN GRVL SAND 0019 BRWN SAND DRY 0055 BRWN SAND PCKD 0062 GREY FSND 0070

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	06 027	19-05747	649600 4883800	1050	1980/07	4743	06	FR	0048	17	24	25	6 :0	CO	0032	16	TRAUGOTT CONST LTD WHIT SAND CLAY LYRD 0018 BRWN CLAY SAND 0032 BRWN FSND 0040 GREY FSND 0048 GREY CLAY SAND DRTY 0061 GREY CLAY 0065
CON	06 027	19-06752	649700 4883600	950	1983/10	1413	05	FR	0059	15	50	4	1 :30	IN	0055	04	WILLIAMSON MOTORS BRWN SAND PCKD 0008 GREY SAND PCKD 0050 BRWN MSND LOOS 0059
CON	06 027	19-05867	649600 4883700	1050	1980/09	4743	06	FR	0042	21	30	20	2 :0	CO	0042	11	WILLIAMSON ESSO CTR YLLW SAND CLAY 0020 BRWN SAND PCKD 0042 BRWN FSND 0053 BLUE CLAY SILT SOFT 0065 GREY CLAY 0066
CON	06 027	19-06343	649250 4883800	900	1982/04	1413	06	FR	0090	47	76	5	3 :0	DO	0082	08	CRAMM D BRWN SAND DRY 0014 BRWN CLAY PCKD 0048 BRWN FSND 0081 BRWN SAND LOOS 0090
CON	06 027	19-07940	649384 4883706	968	1986/10	0001	06	FR	0072	45	60	10	2 :30	DO	0073	04	ACTON, BONNIE BRWN SAND 0004 BLCK BLDR HARD 0007 BRWN SAND LOOS 0072 GREY SAND FSND 0078 GREY SAND CLAY MUCK 0081
CON	06 027	19-07592	649891~ 4883842		1985/11	1672	06	FR	0060	18	44	10	0 :0	DO	0053	04	AKERS AUTO GLASS LOAM 0002 SAND GRVL 0010 SAND 0056 SAND FGVL 0060
CON	06 027	19-07599	649891~ 4883842		1985/12	1672	06	FR	0055	18	49	5	2 :0	DO	0048	04	IMAGE GLASS & CONST. LOAM 0001 SAND GRVL 0014 CLAY 0036 SAND FGVL 0055
CON	06 027	19-07511	649891~ 4883842		1985/10	1413	05	FR	0045	10	30	6	1 :30	DO	0041	04	HICKLING, SCOTT BRWN SAND SILT LOOS 0036 GREY CLAY SILT SOFT 0037 RED SAND LOOS 0045
CON	06 027	19-07292	649250 4883550	950	1985/04	1413	05	FR	0050	15	42	4	2 :0	DO	0046	04	MEHARG G BRWN SAND LOOS 0010 BRWN CLAY SAND SOFT 0018 BRWN GRVL SAND LOOS 0020 BRWN CLAY SOFT 0035 BRWN FSND 0050
CON	06 027	19-07891	649891~ 4883842		1986/07	4743	06	FR	0046	21	55	6	2 :30	DO	0046	08	SMITH, GARY YLLW CLAY SAND 0016 BRWN SAND LOOS 0046 BRWN SAND DKCL 0050 BLUE CLAY 0055 GREY SAND FSND 0059 GREY SILT CLAY 0064
CON	06 027	46-06611	650800 4884000	895	1976/08	1413	06	FR	0125	28	73	12	2 :30	DO	0117	08	DOBSON ROSS BRWN SAND DRY 0026 BRWN CLAY SAND DNSE 0083 BLUE SILT CLAY SOFT 0106 RED FSND CLN 0125
CON	06 027	46-05940	649628 4883692	922	1974/04	1413	05	FR	0054	17	23	12	1 :0	DO	0046	08	HAMILTON B F
CON	06 027	19-12654	649891~ 4883842		1995/11	3136	08	FR	0028	8	43	10	1 :0	DO	0046	08	BLCK LOAM 0002 BRWN SAND 0039 RED SAND 0054 R.M. OF D. G. VLCKO
CON	06 027	19-08514	649891~ 4883842		1987/07	4743	06	FR	0058	35	60	6	2 :30	DO	0065	04	BRWN LOAM 0001 BRWN CLAY SNDY PCKD 0018 BRWN SAND SLTY 0028 BRWN FSND 0055 SCOTT, WM.
CON	06 027	19-11176	649891~ 4883842		1991/05	3903	06	FR	0316	25	113	6	8 :0	CO	0308	08	BRWN SAND LOOS 0042 BRWN SAND LOOS 0048 BRWN SAND WBRG PCKD 0058 BRWN SAND CLN 0069 TREASURELAND DEVELP. BRWN FSND LOOS 0006 BRWN CLAY STNS HARD 0012 BRWN FSND LYRD 0069 BRWN GRVL CLAY LYRD 0071 BRWN GRVL CLAY LYRD 0074 BRWN FSND LOOS 0085 GREY CLAY SAND LYRD 0106 GREY CLAY GRVL LYRD 0117 GREY CLAY SAND LYRD 0308 GREY FSND GRVL LYRD 0316 GREY CLAY SNDS LYRD 0365 BRWN CLAY SHLE LYRD 0375
CON	06 028	19-14838	649764~ 4884220		2000/10	6874	30	FR	0020	17	26	25	2 :	DO			PARISI,MARLENE UNKN CMTD 0012 BRWN SAND 0026

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	06	028	19-14300	649764~4884220		1999/10	5459	06	UK	0048				:		0054 03	WARDE,STICKS BRWN CLAY 0028 BRWN SAND CLAY 0043 BRWN CLAY 0048 BRWN SAND SILT 0057
CON	06	028	19-14417	649764~4884220		2000/03	5459	06	FR	0055	8	35	30	1 :30	DO	0052 03	WOODER,ITICK GC BRWN CLAY SNDY 0026 BRWN FSND 0055 BRWN MSND 0060
CON	06	028	19-14797	649764~4884220		2000/08	5459		DRY					:			WOODENSTICKS BRWN LOAM SOFT 0003 BRWN FSND SOFT 0075 GREY CLAY STNS HARD 0080 GREY CLAY STNS HARD 0280
CON	06	028	19-14799	649764~4884220		2000/08	5459		DRY					:			GREY CLAY SILT STNS 0360 BLCK SHLE HARD 0370 WOODEN STICKS,GC GREY GRVL FILL 0001 BRWN CLAY SLTY STNS 0022 GREY CLAY SILT 0075 GREY CLAY SAND DNSE 0150
CON	06	028	46-02989	649811~4884362	925	1961/08	1415	06	FR	0106	6	40	20	0 :30	DO		GREY CLAY STNS SILT 0367 BLCK SHLE HARD 0370 BOSGRAAF L GRVL MSND 0004 FSND 0090 MSND CLAY 0100 MSND GRVL 0106 GRVL 0107
CON	06	028	46-02991	649703~4884362	925	1967/10	3109	30	FR	0025	5			:	DO		MCGUCKIN ROSS LOAM 0002 BRWN CLAY MSND 0024 MSND 0027
CON	06	028	46-02990	649587~4884080	930	1967/11	3102	30	FR	0015	15		2	:	DO		PEW ROSS LOAM 0001 MSND 0025
CON	06	028	46-02988	649879 4884571	925	1959/10	4102	30	FR	0020	15			:	DO		MCGUCKIN R FSND 0025
CON	06	028	46-03776	649620 4884330	925	1968/11	1413	05	FR	0037	8	18	9	6 :0	DO		MURRAY ROSS BRWN CLAY MSND 0030 FSND 0034 CLAY 0036 MSND GRVL 0037
CON	06	028	46-04894	649600 4884175	950	1971/11	1413	05	FR	0081	20	79	9	1 :30	DO	0073 08	THOMPSON H
CON	06	028	46-04116	649600 4884300	925	1969/08	1413	05	FR	0067	23	60	7	2 :0	DO	0067 08	BRWN SAND 0020 GREY SILT 0071 RED SAND 0081 MENDELA R BRWN MSND 0020 RED MSND CLAY 0060 RED FSND 0075
CON	06	028	46-03924	649350 4884150	935	1968/10	1413	05	FR	0066	18	25	9	2 :0	DO	0058 08	PEW ROSS MSND 0018 CLAY MSND 0052 MSND 0066
CON	06	028	46-04891	649650 4884220	950	1971/11	1413	05	FR	0083	20	76	9	3 :30	DO	0075 04 0079 04	HARSELL G BRWN MSND 0020 GREY SILT 0071 RED FSND 0083
CON	06	028	19-04966	649900 4884300	915	1978/01	4743	06	FR	0040	12	35	8	1 :0	DO	0042 04	MORLEY LECK TRANS LT
CON	06	028	19-04518	649750 4884350	945	1976/09	2407	06	FR	0069	22	72	5	1 :0	DO	0069 06	BRWN SAND 0040 BRWN SAND WBRG 0046 CATHERWOOD E
CON	06	028	19-06286	649600 4884150	850	1981/07	2407	06	FR	0076	25	68	5	2 :30		0076 03	BLUE LOAM 0001 BLUE CLAY 0032 BLUE SAND QSND 0060 BLUE CLAY 0062 BLUE SAND 0075 FARRELL M
CON	06	028	19-06125	650700 4884550	900	1981/08	1413	05	FR	0045	5	40	3	1 :30	DO	0041 04	BRWN LOAM 0001 BRWN CLAY 0020 BLUE CLAY 0067 BLUE FSND 0078 WOOP R
CON	06	028	19-05951	649550 4883950	1050	1980/10	2407	06	FR	0074	25	64	9	2 :0	DO	0074 03	BRWN CLAY PCKD 0010 GREY CLAY DNSE 0040 GREY SAND LOOS 0045 JUNNER M
CON	06	028	19-06661	649800 4884000	850	1983/04	4738	06	FR	0040	10	41	12	3 :0	CO	0059 03	BLUE LOAM 0001 BLUE CLAY SAND 0032 BLUE CLAY 0074 BLUE SAND 0077 D WATSON AUTO SALES
CON	06	028	19-05323	649800 4884250	875	1979/04	4743	06	FR	0063	23	60	6	2 :0	DO	0066 04	BRWN SAND LOOS 0040 GREY FSND VERY 0056 GREY FSND 0062 CRAMM A
CON	06	028	19-05135	649550 4884150	925	1978/09	4743	06	FR	0063	16	56	7	1 :30	DO	0066 04	BRWN SAND LOOS 0023 YLLW CLAY 0047 GREY CLAY SOFT 0063 GREY SAND CLAY 0066 GREY FSND 0070 BOND CLIFF YLLW SAND CLAY PCKD 0012 BRWN CLAY SAND 0045 BLUE CLAY 0063 BRWN FSND CLN 0070

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	06	028	19-05766	649500 4884250	1050	1980/06	1413						:	NU			BRUNEAU S BRWN SAND DRY 0008 BRWN CLAY DNSE 0023 GREY CLAY DNSE 0040 GREY SILT SOFT 0046 GREY CLAY STNS HARD 0100
CON	06	028	19-06959	649400 4883950	950	1984/05	1413	06	FR	0052	15	33	8	1 :30	DO	0045	07	GAY RICK BLDR BRWN SAND PCKD 0012 BRWN CLAY DNSE 0043 BRWN SAND LOOS 0052
CON	06	028	19-07210	649450 4884150	925	1984/08	4743	06	FR	0045	14	33	7	2 :30	DO	0049	04	ARTS P BRWN CLAY SAND LOOS 0012 BRWN SAND 0045 BRWN SAND CLN 0053
CON	06	028	19-07591	649764~ 4884220		1986/02	4743	06	FR	0047	15	40	8	1 :30	DO	0050	07	YOUNG, DAVID BRWN CLAY SAND 0015 YLLW CLAY SAND PCKD 0047 BRWN FSND 0057 BRWN CLAY SAND LYRD 0064 GREY CLAY STNS HPAN 0077
CON	06	028	19-07669	649764~ 4884220		1986/05	4743	06	FR	0052	11	45	10	1 :30	DO	0068	04	BENNS, E & D BLCK LOAM 0004 BRWN LOAM 0006 BRWN CLAY GRVL LOOS 0012 YLLW SAND DRTY 0048 BRWN CLAY SOFT 0052 BRWN SAND CLN 0072
CON	06	028	19-08083	649734 4884382	932	1986/12	4743	06	FR	0048	8	55	10	2 :30	DO	0050	04	BOAKE, RT BLCK LOAM 0002 BRWN SAND CLAY LYRD 0038 BRWN SAND LOOS 0046 GREY CLAY 0048 BRWN SAND CLN FSND 0058 GREY CLAY STKY 0062
CON	06	028	46-06427	649500 4884060	950	1976/01	1413	06	FR	0091	26	60	10	2 :30	DO	0083	08	TYNDALE ROSS BRWN SAND CLAY SILT 0077 RED FSND LOOS 0091
CON	06	028	46-05428	649660 4884360	925	1973/04	1413	05	FR	0061	12	25	9	1 :30	DO	0045	08	HARVEY J PRDG 0019 BRWN SAND SILT 0050 GREY SAND 0061
CON	06	028	46-05929	648843 4883872	950	1974/08	1413	05	FR	0065	24	45	10	2 :0	DO	0056	08	EWAN SANDY BRWN SAND CLAY 0052 RED FSND 0065
CON	06	028	46-05933	649824 4884400	920	1974/07	1350	06	FR	0035	10	35	6	2 :0	DO	0037	05	LUKAVSKY J SAND CLAY 0012 CLAY 0017 SILT CLAY SAND 0035 SAND 0045
CON	06	028	19-14209	649764~ 4884220		1999/07	5459							:				WOODEN,STICKS BRWN SAND SLTY 0062 BRWN SAND SILT STNS 0089 GREY CLAY STNS 0117 GREY SAND STNS 0127 GREY CLAY SAND STNS 0158
CON	06	028	46-06390	649987 4884415	900	1975/12	4743	06	FR	0056	3	20	15	3 :0	DO	0057	03	BULLERWELL V BLCK LOAM 0001 GREY CLAY GRVL 0020 BRWN CLAY SAND 0038 GREY FSND 0046 GREY GRVL 0060
CON	06	028	19-14210	649764~ 4884220		1999/08	5459							:				WOODEN,STICKS BRWN SAND SILT 0062 BRWN SAND STNS SILT 0089 GREY SAND STNS 0117 GREY SAND STNS 0123
CON	06	028	46-06180	649713 4884106	940	1975/02	1413	05	FR	0072	33	50	7	2 :30	IN	0064	08	BEACH STAN EQUIP BRWN SAND 0033 BLUE SAND SILT 0057 RED FSND 0072
CON	06	028	46-06386	649897 4884335	915	1975/12	4743	06	FR	0040	8	35	15	1 :0	DO	0040	08	FRAZER GORDON BLCK LOAM 0001 GREY CLAY SAND 0040 GREY SAND 0048 GREY FSND CLAY 0052 GREY GRVL 0054 BLUE CLAY GRVL 0062
CON	06	028	46-05196	649200 4883810	950	1972/08	1413	05	FR	0065	20	50	10	1 :30	DO	0050	08	JAMES R PRDR 0024 BLUE SAND 0055 RED SAND 0057 BLCK FSND 0065
CON	06	028	46-05928	650621 4884449	900	1974/08	1413	05	FR	0083	12	65	5	2 :0	DO	0074	08	GOULD W C SAND CLAY 0022 SAND CLAY SILT 0059 RED SAND 0065 BRWN CLAY 0067 RED SAND 0083
CON	06	028	19-12216	649764~ 4884220		1994/11	5459	06	FR	0126	50	120	2	2 :30	DO	0129	06	POSTILE, FRED BRWN SAND 0030 BRWN CLAY SOFT 0047 GREY CLAY SILT 0062 GREY CLAY SAND HARD 0118 GREY CLAY HARD 0126 GREY SAND SILT 0135

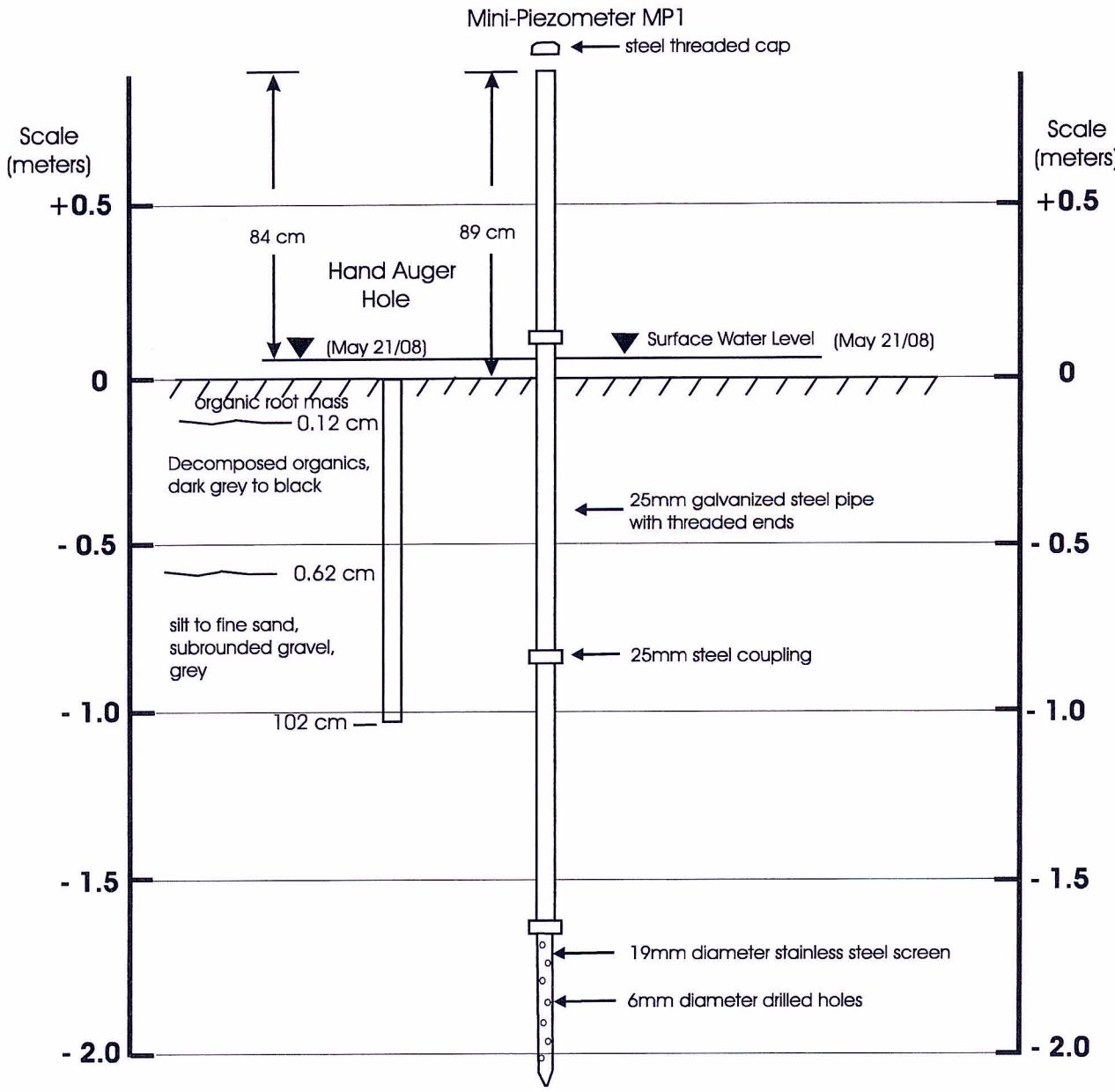
GROUND WATER BULLETIN REPORT

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... UXBRIDGE TOWNSHIP (UXBRIDGE)																	
CON	06	028	19-11942	649764~ 4884220		1994/05	4743	06	FR	0072	19	45	12	2 :0	DO	0074	06	THORNBER, T. BLCK LOAM 0002 BRWN CLAY SAND 0017 BRWN SAND WBRG 0019 BRWN CLAY SAND LYRD 0072 BRWN SAND CLN 0080
CON	06	028	19-12334	649764~ 4884220		1995/01	5459	06	FR	0201	18	201	2	5 :0	DO	0201	03	PRSTIL, M. BRWN CLAY SNDY 0016 GREY CLAY STNS 0022 BRWN SAND SILT 0031 GREY CLAY STNS ROCK 0189 GREY SAND SILT 0195 GREY CLAY SILT 0201 GREY SAND CLN 0206
CON	06	028	19-12335	649764~ 4884220		1995/02	5459							:	DO			PASTILE, FRED PGVL 0120
CON	06	028	19-11649	649742 4884345	932	1992/09	4743	06	FR	0050	13	40	6	4 :30	DO	0050	09	BOUDREAU, D BRWN CLAY 0012 BRWN SAND CLAY LYRD 0026 BRWN CLAY SOFT 0051 BRWN SAND FSND 0060 GREY CLAY SILT 0070 GREY CLAY STNS HARD 0070
CON	06	028	19-09796	649237 4883987	945	1989/03	4743	06	FR	0081	18		5	2 :0	DO	0081	05	DAVIES. JOHN A BRWN LOAM WTHD 0002 BRWN SAND LOOS 0039 GREY CLAY GRVL HARD 0054 BRWN SAND SOFT 0056 GREY CLAY GRVL HARD 0081 BLCK SAND HARD 0087
CON	06	028	19-09390	649764~ 4884220		1988/07	4743	06	FR	0069	4	50	10	2 :30	DO	0069	04	BROWN, GEORGE BRWN LOAM SOFT 0002 BRWN SAND SOFT 0027 GREY CLAY GRVL SAND 0068 BRWN CSND LOOS LOOS 0073
CON	06	028	19-08683	649891 4884525	912	1987/10	4743	06	FR	0076	16	26	10	2 :15	DO			SAUDER, L BRWN LOAM 0007 BLCK BLDR HARD 0010 GREY CLAY SOFT 0035 GREY CLAY SAND 0045 GREY CLAY SAND LYRD 0050 GREY CLAY SOFT 0076 GREY GRVL SAND 0079 GREY GRVL CLN 0090
CON	06	028	19-11068	649763 4884298	932	1991/05	4743	06	FR	0066	7	50	10	2 :0	DO	0066	03	KNITSCH, AK BRWN LOAM BLDR LOOS 0003 BRWN CLAY SOFT 0015 GREY CLAY HARD 0027 GREY SAND LOOS 0032 BRWN SAND 0069
CON	06	029	19-14299	649637~ 4884582		1999/10	5459							:	NU			JUP,URBRIDGE
CON	06	029	19-13768	649637~ 4884582		1998/08	5459							:				WOODEN STICKS GC
CON	06	029	19-13770	649637~ 4884582		1998/08	5459							:				WOODEN STICKS GC
CON	06	029	19-13769	649637~ 4884582		1998/08	5459							:				WOODEN STICKS GC
CON	06	029	19-13767	649637~ 4884582		1998/08	5459							:				WOODEN STICKS GC
CON	06	029	19-13766	649637~ 4884582		1998/08	5459							:				WOODEN STICKS GC
CON	06	029	19-04902	650250 4884850	905	1977/02	2801							:	NU MN			REGION OF DURHAM BLCK LOAM 0001 BRWN CLAY GRVL SNDY 0023 FSND LOOS 0040 GREY CLAY SNDY SLTY 0050 GREY CLAY SNDY HARD 0057 GREY CLAY GRVL HARD 0065 GREY CLAY GRVL SNDY 0106 GREY CLAY GRVL FSND 0142 BLDR VERY HARD 0144 GREY CLAY GRVL HARD 0166 GREY CLAY SLTY SNDY 0238 BRWN CLAY SAND GRVL 0261 BRWN GRVL CLAY SNDY 0296 GREY CLAY GRVL SLTY 0307 GREY CLAY GRVL HARD 0323

APPENDIX 2

SITE FIELD DATA

- Mini-Piezometer Construction Details
- Borehole Logs
- Grain Size Laboratory Analysis
- In-Situ Hydraulic Conductivity Testing Results



Water Levels

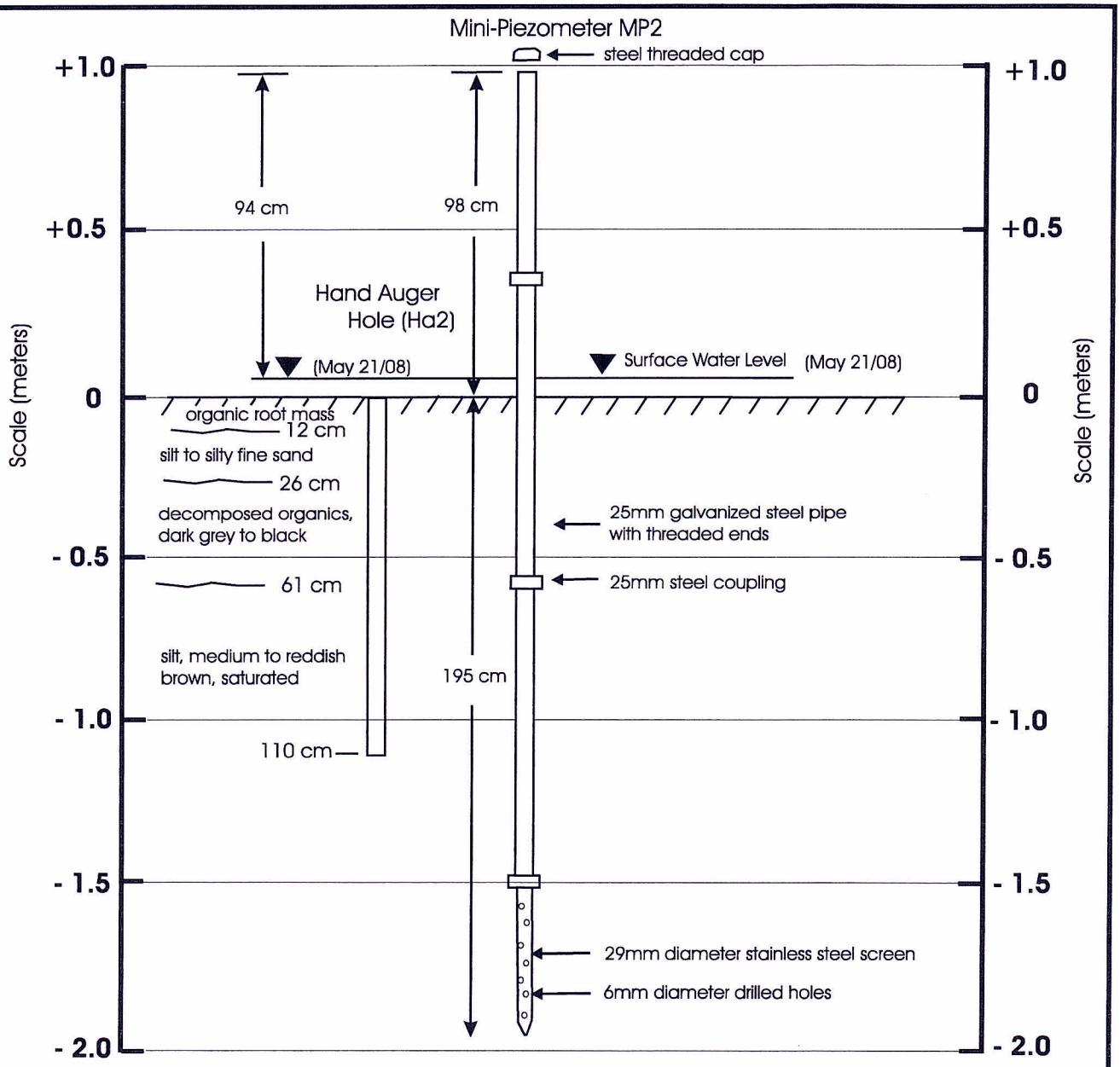
Date	Groundwater (m below top of pipe)	Surface Water (m below top of pipe)
May 21/08	2.609	0.837
June 16/08	0.840	0.825
June 25/08	0.838	0.825
July 10/08	0.869	0.842

Mini-Piezometer - MP1
Hyatt Developments (Uxbridge)Inc.

Norbert M. Woerns
96 Lund Street, Richmond Hill, Ontario, Ph (905) 883- 0276

Figure 1-1

July 2008



Water Levels

Date	Groundwater (m below top of pipe)	Surface Water (m below top of pipe)
May 21/08	2.500	0.940
June 16/08	1.063	0.940
June 25/08	1.038	0.948
July 10/08	1.115	No standing water

Mini-Piezometer - MP2
Hyatt Developments (Uxbridge) Inc.

Norbert M. Woerns
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Figure 1-2

July 2008

Borehole 1

Project: Hydrogeological Study
Client: Hyatt Developments (Uxbridge) Inc.
Location: Uxbridge, Ontario

Date: June 16/08
Logged By: NMW
Ground Elev.: 291.80 mASL (BH1S, BH1D)

Figure No. 1-3
July 2008

UTM: (BH1A) 17T 0649277 4883726

DEPTH (m)	Stratigraphic Description	Monitor Details	Sample Number	Interval	Type	N Value	% Recovery	% Water	Remarks
0		D S							
0.12	Topsoil: med. to reddish brown sandy, roots,		1		SS	21	100		
			2		SS	48	80		Ground elevation estimated from topographic plan by J.D. Barnes Limited April 29, 2008 (field work completed April 19, 2008
	Sandy silt, trace clay : Light grey, hard, no stones, no structure, damp		3		SS	35	96		(Sample No. 3 sieve results)
5		5	4		SS	47	75		
	BH1S Water Level 5.893m,(285.91 mASL), Jun 25/08								BH1S screen interval (4.60 - 7.65m)
	BH1D Water Level 6.212m,(285.59 mASL), Jun 25/08								
6.10									
6.55	Silt: medium grey, hard, no stones, saturated		5		SS	34	100		
	Fine to medium sand: Medium grey, hard, no stones, no structures, saturated		6		SS	62	100		
9.30									
9.56	Sandy silt till: medium grey, stony, hard, saturated		7		SS	75	100		
10		10							
	Silty sand, silt: Medium grey, very stiff, no stones, no structures,		8		SS	20	100		BH1D screen interval (10.11 - 11.63m)
11.58									
	Silt till : Medium grey, stony, hard, saturated		9		SS	112	100		
	Borehole Terminated at 12.19m (279.61 mASL) Split spoon sample #9 completed into silt till								
15		15							

Silica Sand | Holeplug (Bentonite) | Bentonite Grout (quickgel) | Native Backfill | Water Level

Norbert M. Woerns

Borehole 2

Project:	Hydrogeological Study	Date:	June 17/08
Client:	Hyatt Developments (Uxbridge) Inc.	Logged By:	NMW
Location:	Uxbridge, Ontario	Ground Elev.:	287.70 mASL

Figure No. 1-4

July 2008

UTM: 17T 0649350 4883698

DEPTH (m)	Stratigraphic Description	Monitor Details	Sample Number	Interval	Type	N Value	% Recovery	% Water	Remarks
0		D							
0.10	Topsoil: med. to reddish brown sandy, roots,		1		SS	17	100		Ground elevation estimated from topographic plan by J.D. Barnes Limited, April 29, 2008 (field work completed April 19, 2008)
1									
2	Silty fine sand to silt: Medium to reddish brown, light brown at top of unit 0.102m to 0.61m, stiff to very stiff, no stones, no structures, damp, saturated below 3.05m.		2		SS	11	75		
	Water Level BH 2 : 2.804 m (284.90 mASL), June 25/08								
3			3		SS	21	70		
4									Screen interval (2.56 - 5.61m)
5			4		SS	14	70		
5.49									
6	Silty sand till : Medium grey,stiff, occasional subrounded carbonate stone, stiff, saturated								
6.10			5		SS	14	79		(Sample No. 5 sieve results
	Borehole Terminated at 6.10 m (281.60 mASL) Split spoon sample # 6 completed into silty sand till								
7									

Silica Sand | Holeplug (Bentonite) | Bentonite Grout (quickgel) | Native Backfill | Water Level

Norbert M. Woerns

Borehole 3

Project: Hydrogeological Study
Client: Hyatt Developments (Uxbridge) Inc.
Location: Uxbridge, Ontario

Date: June 17/08
Logged By: NMW
Ground Elev.: 288.46 mASL

Figure No. 1-5
July 2008

UTM: 17T 0649284
4883626

DEPTH (m)	Stratigraphic Description	Monitor Details	Sample Number	Interval	Type	N Value	% Recovery	% Water	Remarks
0									
0.13	Topsoil: black, organics		1		SS	9	80		Ground elevation estimated from J.D. Barnes Limited topographic plan April 29, 2008 (Field work completed April 19, 2008)
	Fine sand: reddish to medium brown								
1	Water Level BH 3; 0.764m (287.70 mASL), Jun 25/08	1							
	Fine sand and silt: Grey, very stiff, saturated, no stones, no structure		2		SS	23	58		
2		2							
2.93									
3			3		SS	8	71		
4		4							Screen interval (2.94 - 5.99m)
	Sandy silt till: Grey, firm to very stiff, occasional subrounded carbonate stone, up to 32mm in diameter, saturated		4		SS	18	100		
5		5							
6		6							
6.10	Borehole Terminated at 6.10 m (281.83 mASL) Plit spoon sample # 5 completed into silt till		5		SS	20	88		
7		7							

Silica Sand | Holeplug (Bentonite) | Bentonite Grout (quickgel) | Native Backfill | Water Level

Norbert M. Woerns

Borehole 4

Project:	Hydrogeological Study	Date:	June 17/08
Client:	Hyatt Developments (Uxbridge) Inc.	Logged By:	NMW
Location:	Uxbridge, Ontario	Ground Elev.:	288.90 mASL

Figure No. 1-6

July 2008

UTM: 17T 0649335 4883599

DEPTH (m)	Stratigraphic Description	Monitor Details	Sample Number	Interval	Type	N Value	% Recovery	% Water	Remarks
0		D							
0.13	Topsoil: black, organics		1		SS	12	75		
0.46	Fine sand: reddish to medium brown,wet								Ground elevation estimated from J.D. Barnes Limited topographic planApril 29, 2008 (field work completed April 19, 2008
1	Water Level BH 3; 0.432m (288.47 mASL), Jun 25/08	1							
	Sand and silt some clay, some gravel: Medium brown, very stiff, saturated, no stones, no structure		2		SS	17	71		(Sample No. 2 sieve results)
2		2							
2.59									
3	Silt and fine sand till: Grey, occasional subrounded stone, up to 25mm in diameter, very stiff, soft soupy consistency of sample, saturated	3	3		SS	23	88		(Sample No. 3 sieve results)
4		4							
4.78			4		SS	33	67		
5	Silt to sandy silt: Grey, saturated, hard, no stones, no structure	5							
6		6							Screen interval (4.51 - 7.56m)
			5		SS	39	67		
7		7							
7.62	Borehole Terminated at 7.62 m (281.28 mASL) Split spoon sample #6 completed into sandy silt	8	6		SS	38	63		

Silica Sand | Holeplug (Bentonite) | Bentonite Grout (quickgel) | Native Backfill | ▼ Water Level

Norbert M. Woerns

alston associates inc.
consulting engineers

EMAIL

Email to	:	Norbert Woerns	Email Address	:	nwoerns@sympatico.ca
From	:	Jonathan Bond	Date	:	7 July 2008
Ref. No.	:	08-0124	Page 1 of 5		
Subject	:	Laboratory Results Hyatt Developments (Uxbridge) Inc.			

Please find attached the Grain Size Distribution Test Reports for the samples received in our office on 26 June 2008. Originals will follow by mail.

If you have any questions please contact our office.

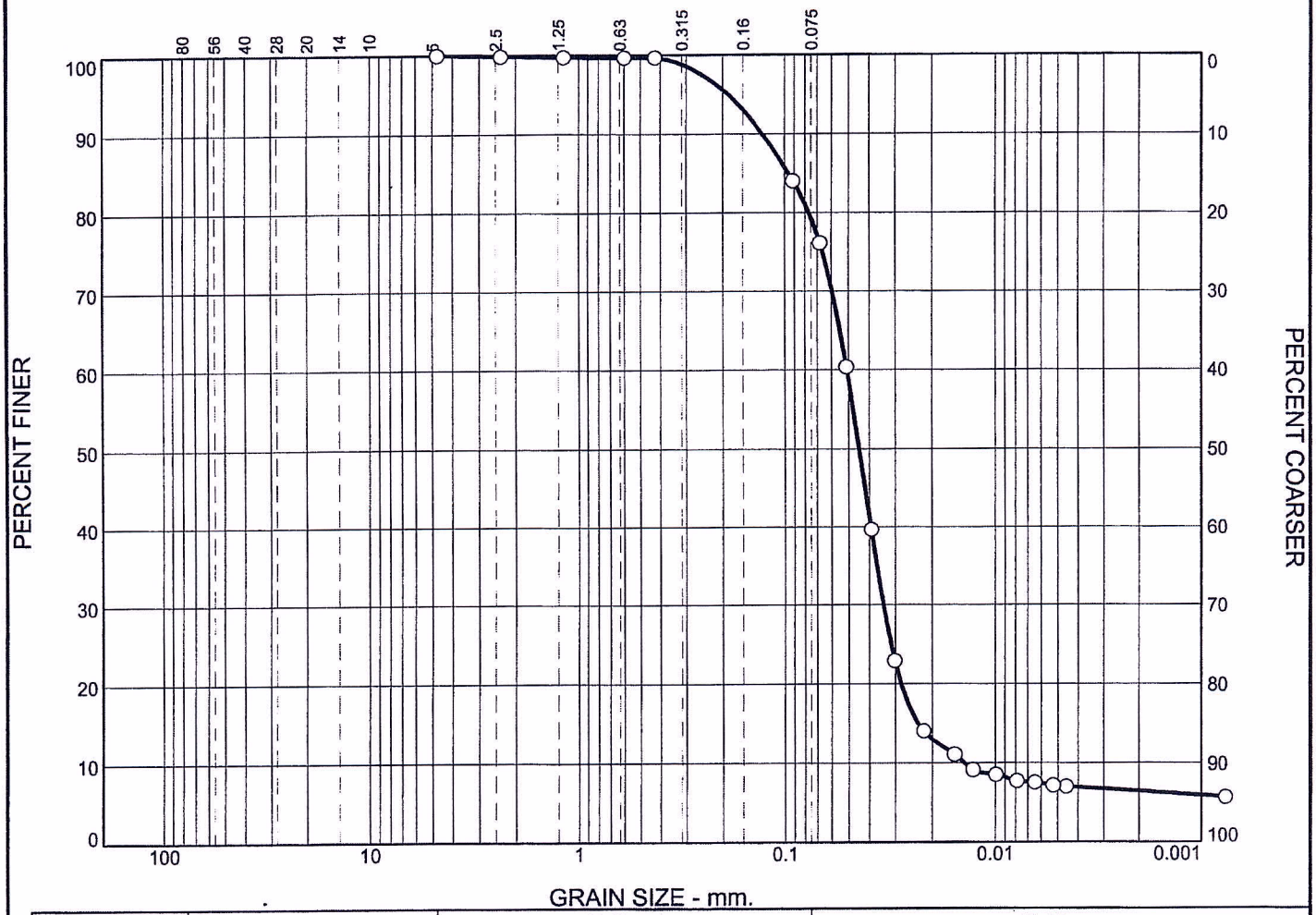
Regards

J. Bond

85 citizen court, unit 1
markham, ontario
L6G 1A8

telephone (905) 474-5265
fax (905) 474-2825
e-mail alston.associates@alston.ca

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	21	73	6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0962	0.0509	0.0447	0.0342	0.0234	0.0141	1.63	3.60

Material Description	USCS	AASHTO
○ SANDY SILT, trace clay		

Project No. 08-124 **Client:** Norbert M. Woerns

Project: Hyatt Developments (Uxbridge) Inc.

○ **Depth:** 10-12 ft depth **Sample Number:** BH 1, Sample 3

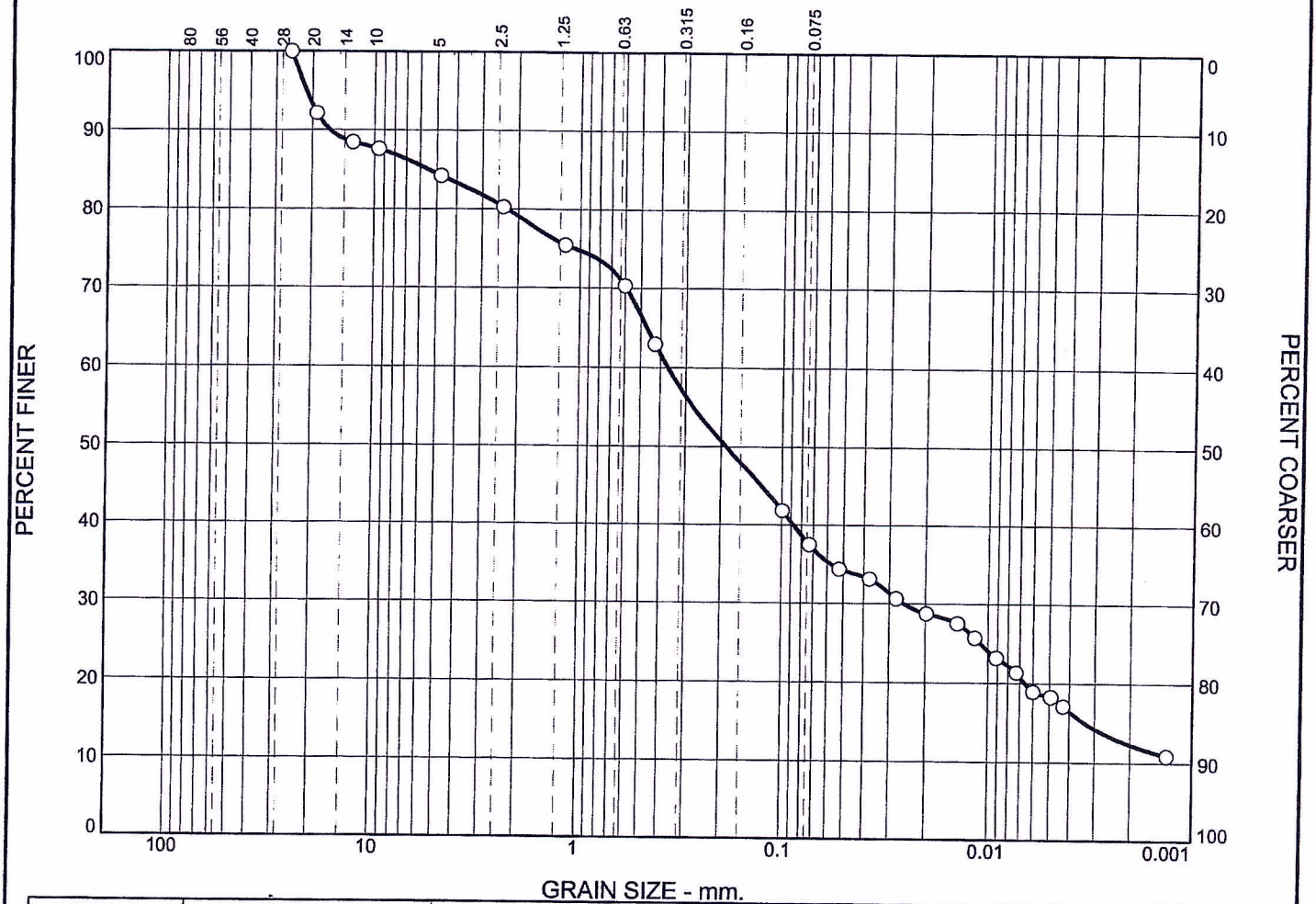
Remarks:

alston associates inc.
consulting engineers

Figure 1

Tested By: GL **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	8	8	5	16	25	26	12

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.4880	0.3685	0.1893	0.0255	0.0033			

Material Description	USCS	AASHTO
○ SILTY SAND, some clay, trace gravel		

Project No. 08-124 **Client:** Norbert M. Woerns

Project: Hyatt Developments (Uxbridge) Inc.

○ **Depth:** 20-22 ft depth **Sample Number:** BH 2, Sample 5

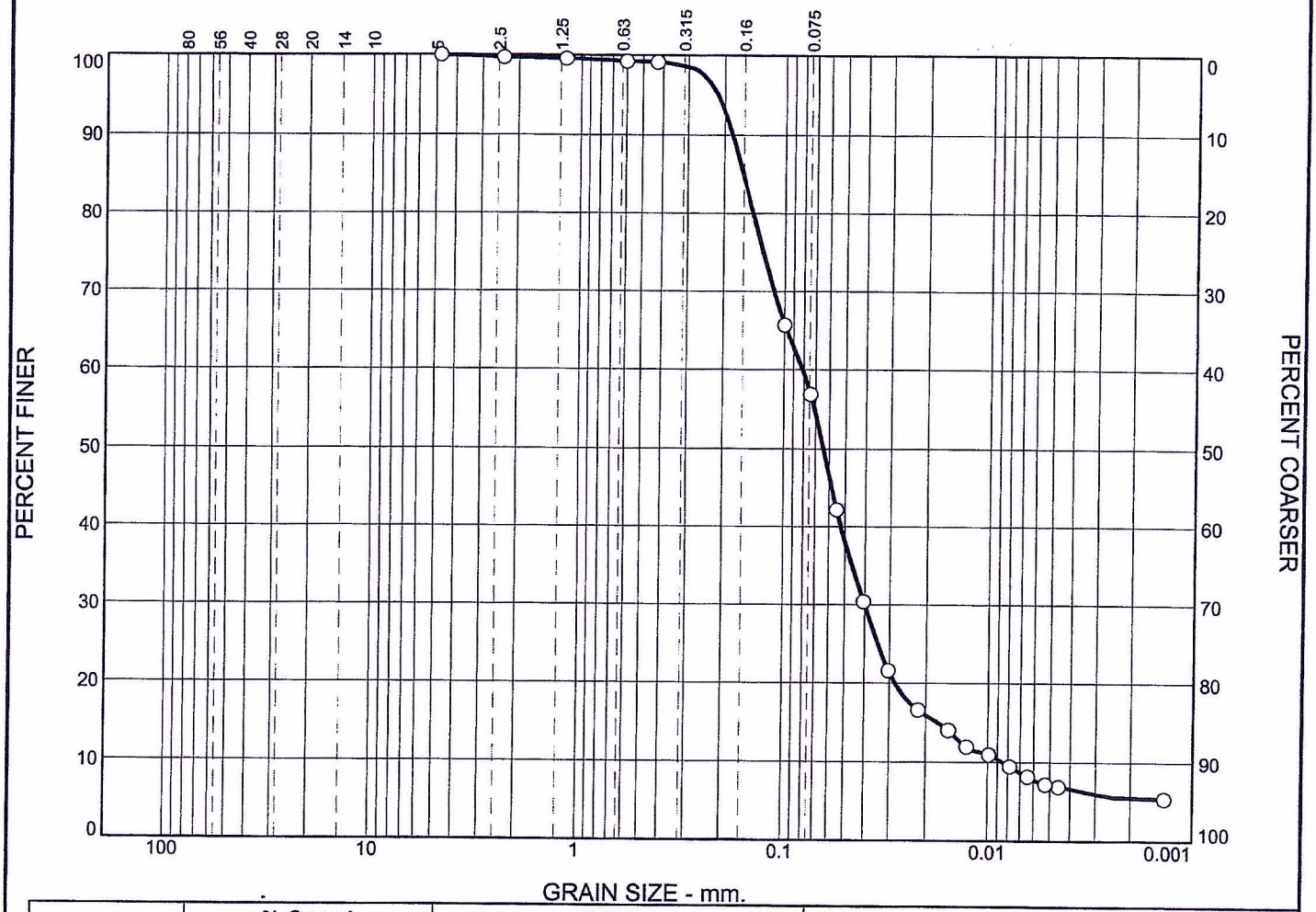
Remarks:

alston associates inc.
consulting engineers

Figure 2

Tested By: GP/AM **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	1	42	51	6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1609	0.0812	0.0640	0.0401	0.0174	0.0085	2.33	9.56

Material Description	USCS	AASHTO
○ SILT and fine SAND, trace clay		

Project No. 08-124 **Client:** Norbert M. Woerns

Project: Hyatt Developments (Uxbridge) Inc.

○ **Depth:** 5-7 ft depth **Sample Number:** BH 4, Sample 2

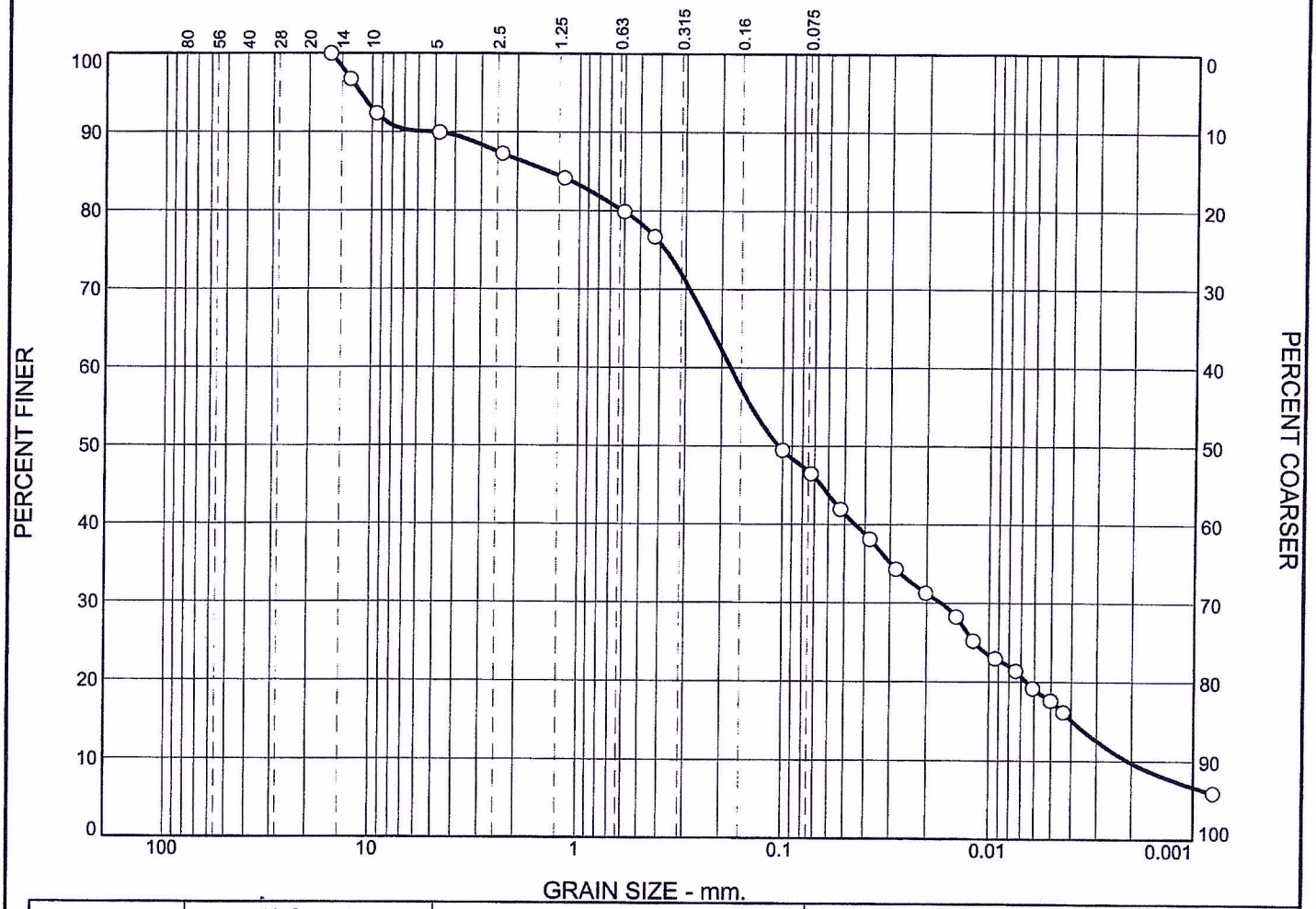
Remarks:

alston associates inc.
consulting engineers

Figure 3

Tested By: GP/AM **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	10	3	10	30	37	10

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.4086	0.1814	0.1045	0.0169	0.0039	0.0021	0.76	87.35

Material Description	USCS	AASHTO
○ SAND and SILT, some clay, some gravel		

Project No. 08-124 **Client:** Norbert M. Woerns

Project: Hyatt Developments (Uxbridge) Inc.

○ **Depth:** 10-12 ft depth **Sample Number:** BH 4, Sample 3

Remarks:

alston associates inc.
consulting engineers

Figure 4

Tested By: NW **Checked By:** JB

Hyatt Developments (Uxbridge) - Slug Test Results Summary

Borehole No.	Test Result	Hydraulic Conductivity (m/s)	Soil Unit(s)
BH1D	Hvorslev (injection test)	5.59E-06	Silty Sand
BH1D	Hvorslev (withdrawal test)	5.18E-06	Silty Sand
BH1S	Hvorslev (injection test)	2.23E-05	Silt and Sand
BH1S	Hvorslev (withdrawal test)	1.59E-05	Silty Sand
BH2	Hvorslev (injection test)	7.40E-06	Sand and Silt
BH2	Hvorslev (withdrawal test - early)	3.02E-06	Sand and Silt
BH4	Hvorslev (injection)	2.55E-06	Silt to Sandy Silt
BH4	Hvorslev (withdrawal)	2.07E-06	Silt to Sandy Silt
	Geometric Mean	**5.76E-06**	**Sand and Silt**
BH3	Hvorslev (injection test)	6.77E-07	Fine Sand/Silt Till
BH3	Hvorslev (withdrawal test)	3.74E-07	Fine Sand/Silt/Silt Till
	Geometric Mean	**5.03E-07**	**Sand/Silt Till**

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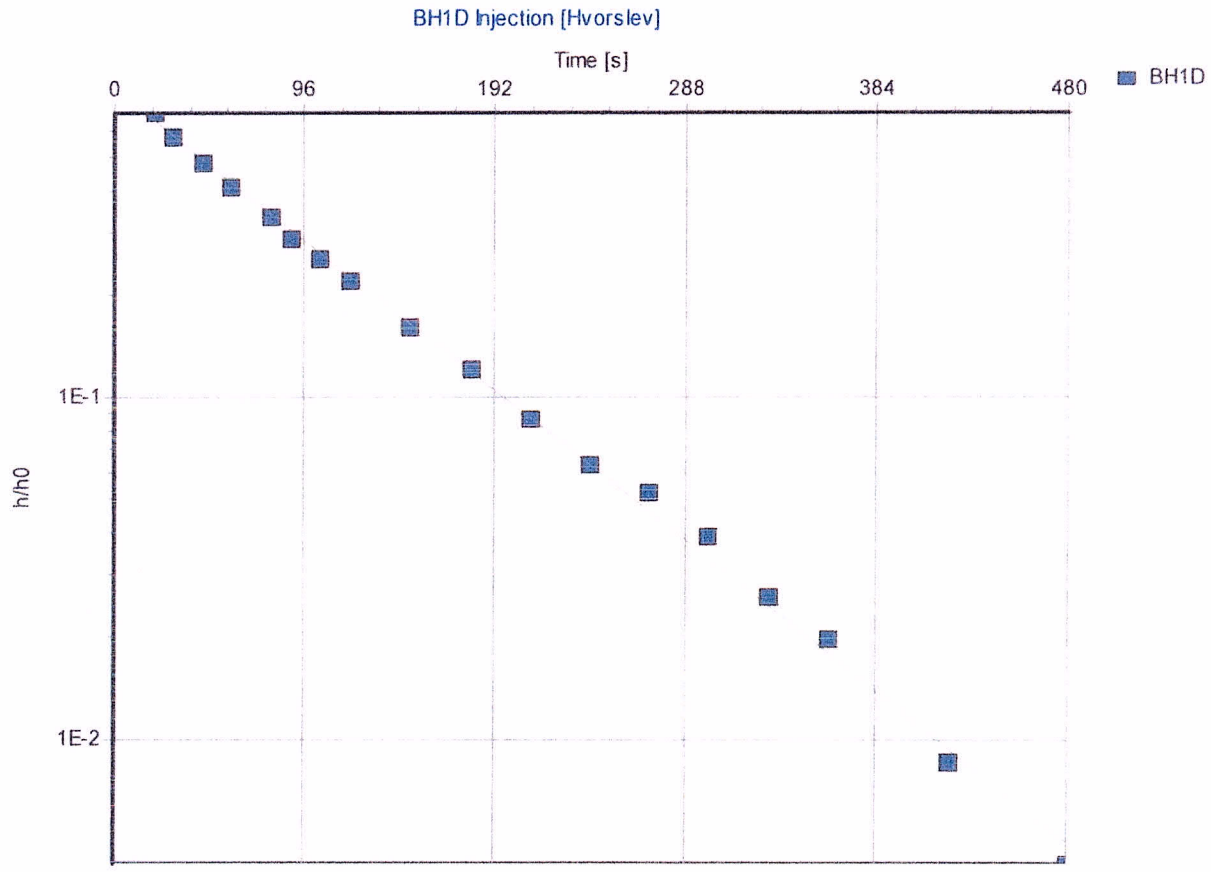
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH1D Injection**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 5.59E-6 [m/s]

Test parameters:

Test Well:	BH1D	Aquifer Thickness:	5.03 [m]
Casing radius:	0.0254 [m]		
Screen length:	1.52 [m]		
Boring radius:	0.127 [m]		

Comments: Silty Sand Formation

Evaluated by: NMW

Evaluation Date: 30/06/2008

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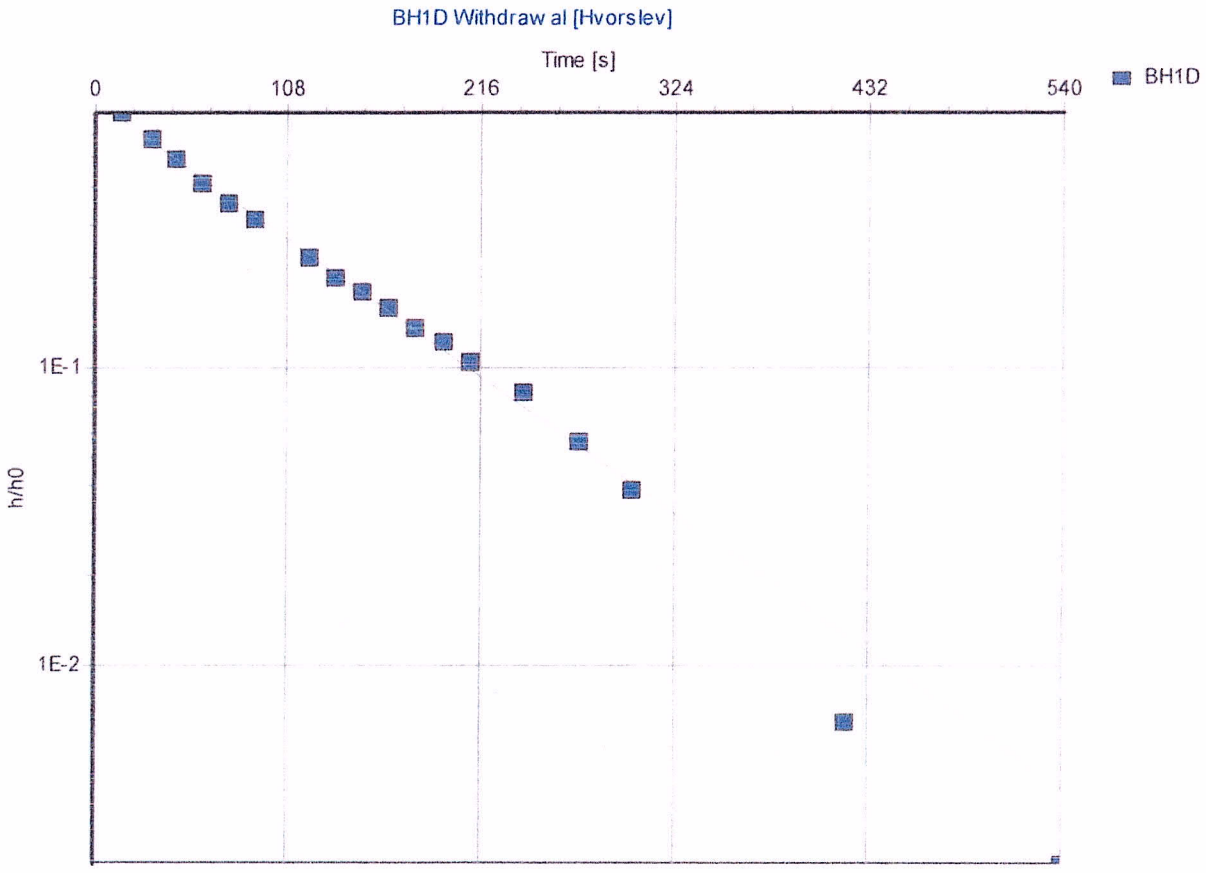
Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH1D Withdrawal**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 5.18E-6 [m/s]

Test parameters:

Test Well:	BH1D	Aquifer Thickness:	5.03 [m]
Casing radius:	0.0254 [m]		
Screen length:	1.52 [m]		
Boring radius:	0.127 [m]		

Comments: Silty Sand Formation

Evaluated by: NMW
Evaluation Date: 30/06/2008

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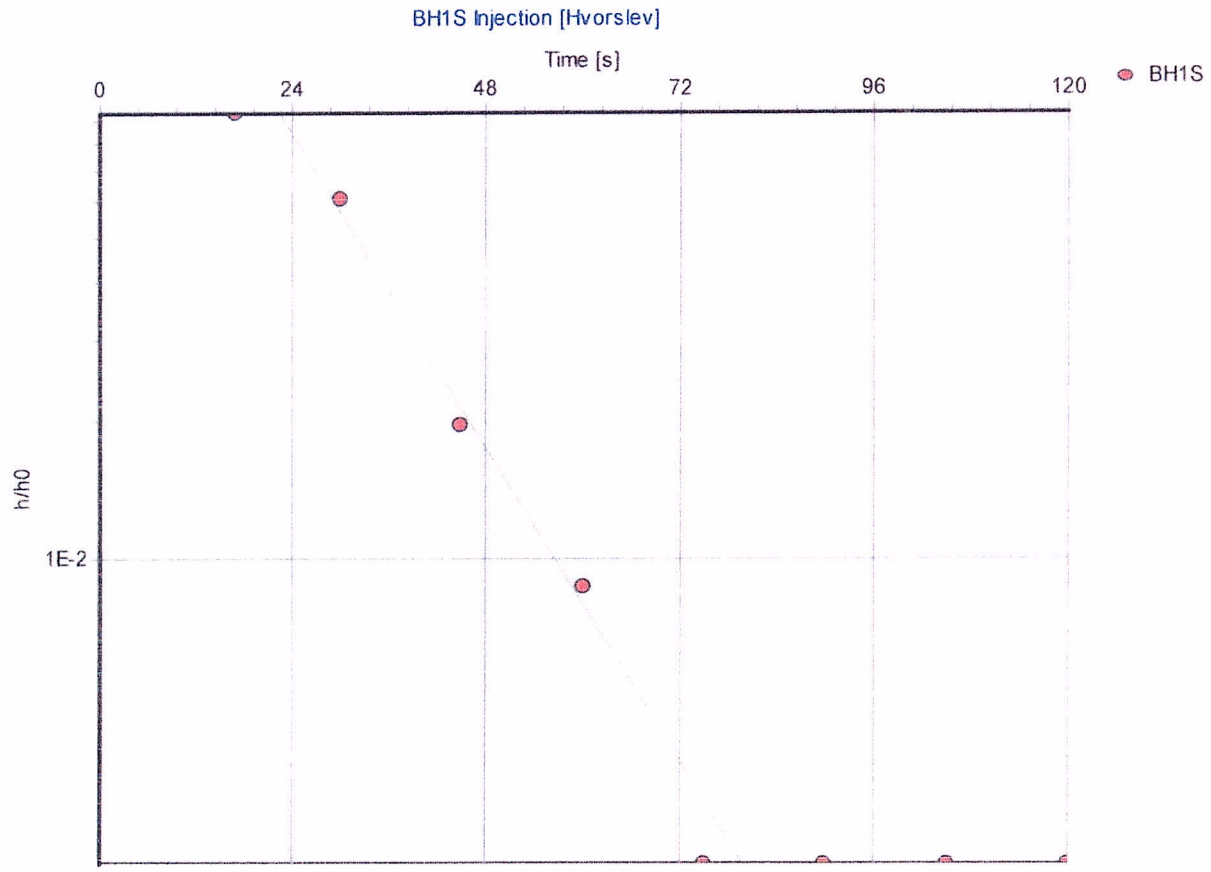
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH1S Injection**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 2.23E-5 [m/s]

Test parameters:

Test Well:	BH1S	Aquifer Thickness:	5.03 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

Comments: Silt and Sand Formations

Evaluated by: NMW

Evaluation Date: 30/06/2008

Norbert M. Woerns
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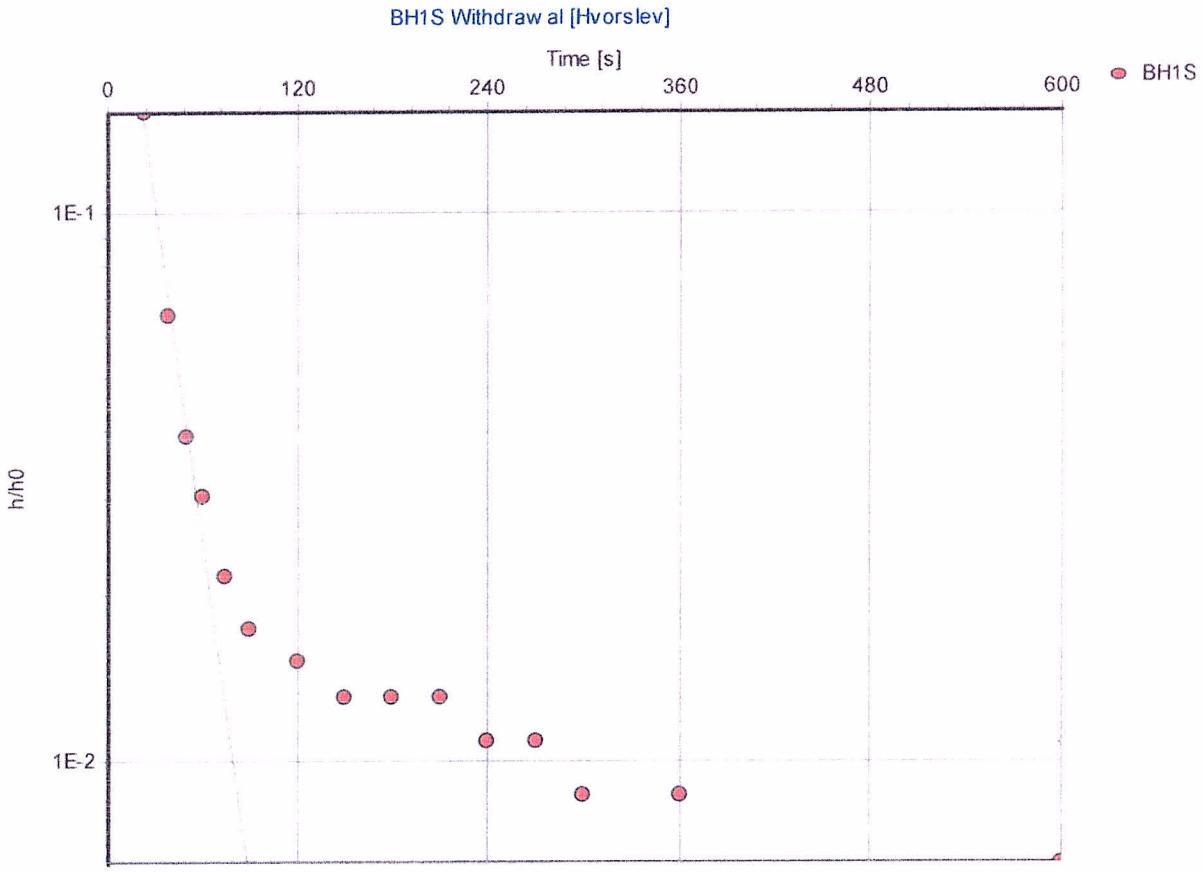
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH1S Withdrawal**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 1.59E-5 [m/s]

Test parameters:

Test Well:	BH1S	Aquifer Thickness:	5.03 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

Comments: Silty Sand/Medium to Fine Sand

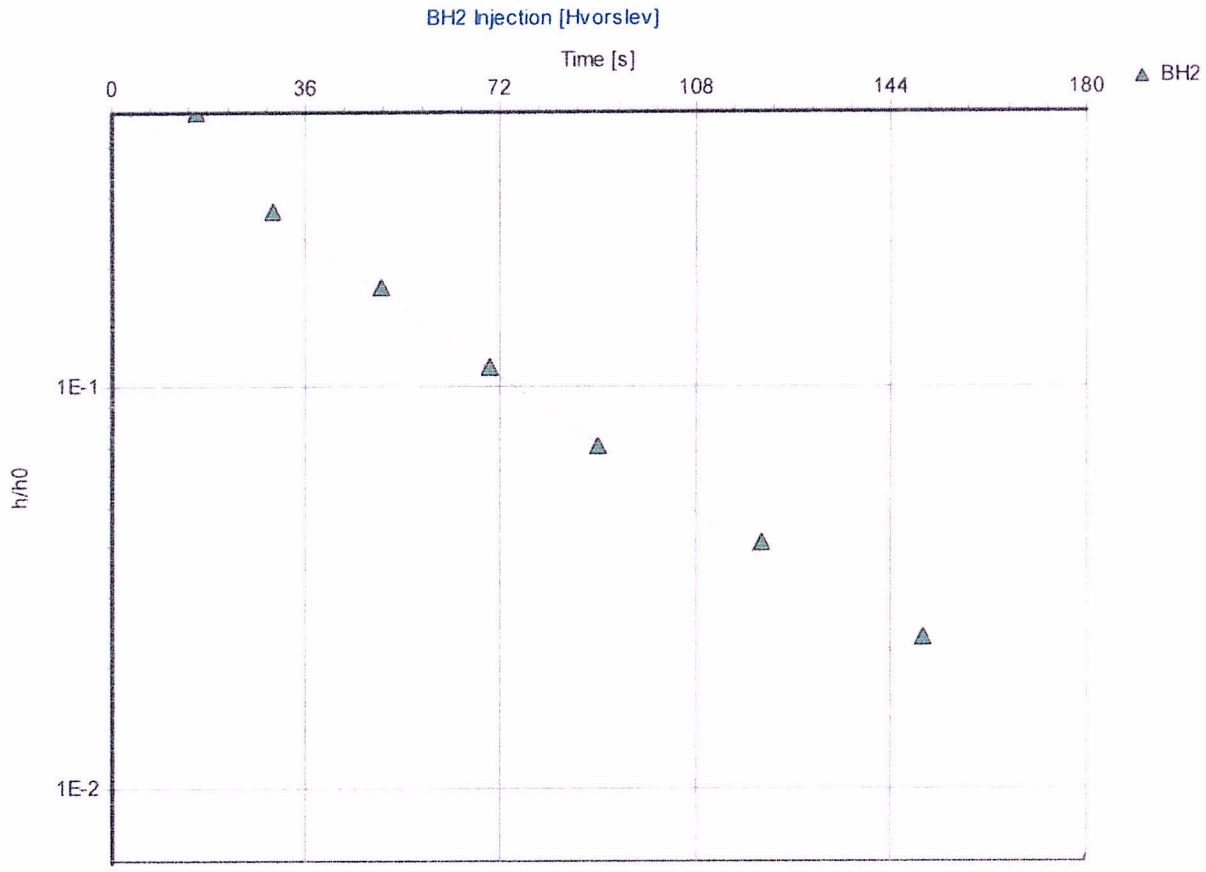
Evaluated by: NMW

Evaluation Date: 25/06/2008

Norbert M. Woerns
96 Lund Street
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH2 Injection**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 7.40E-6 [m/s]

Test parameters:

Test Well:	BH2	Aquifer Thickness:	2.686 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

Comments: Fine Sand to Silt Formation

Evaluated by: NMW

Evaluation Date: 19/01/2009

Norbert M. Woerns
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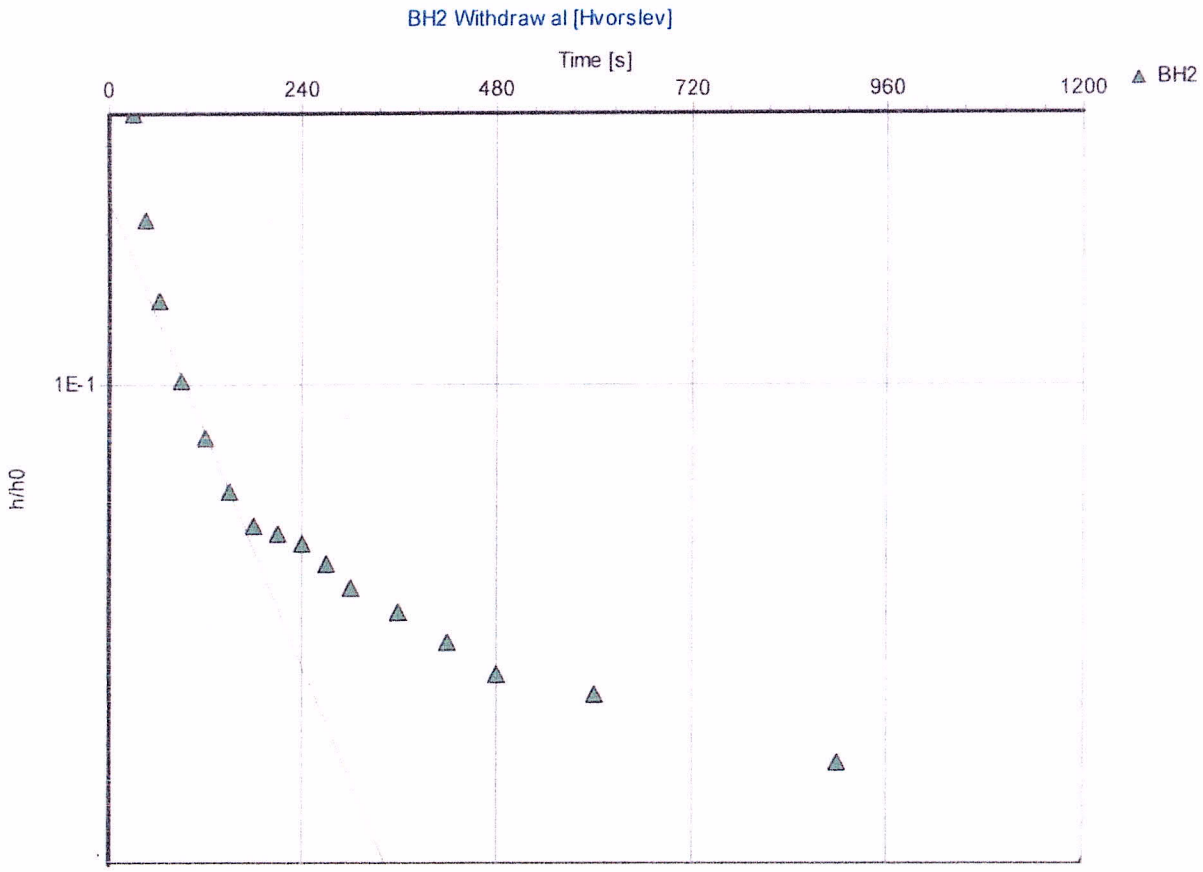
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH2 Withdrawal**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 3.02E-6 [m/s]

Test parameters:

Test Well:	BH2	Aquifer Thickness:	2.686 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

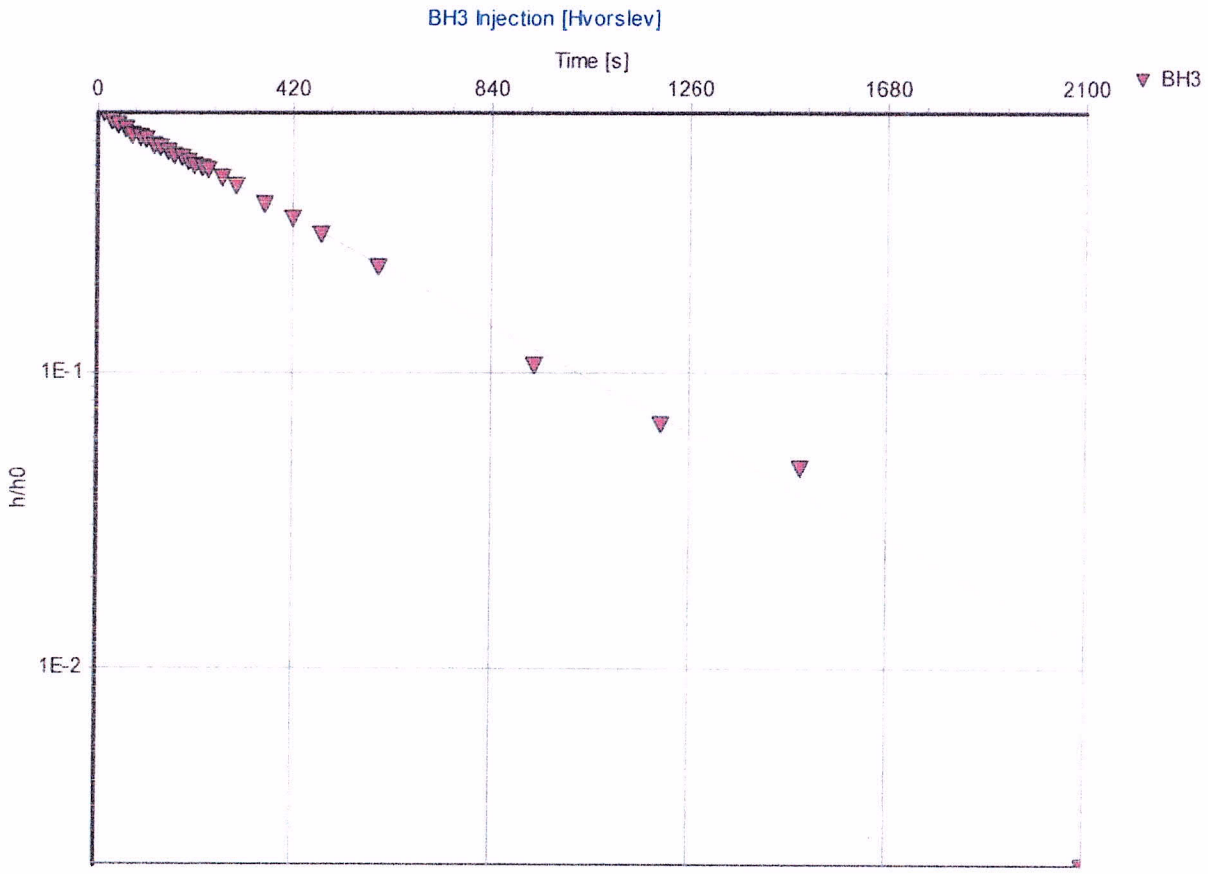
Comments: Fine Sand to Silt Formation

Evaluated by: NMW
Evaluation Date: 19/01/2009

Norbert M. Woerns
96 Lund Street
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH3 Injection**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 6.77E-7 [m/s]

Test parameters:

Test Well:	BH3	Aquifer Thickness:	2.17 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

Comments: Fine Sand/Silt/Silt Till

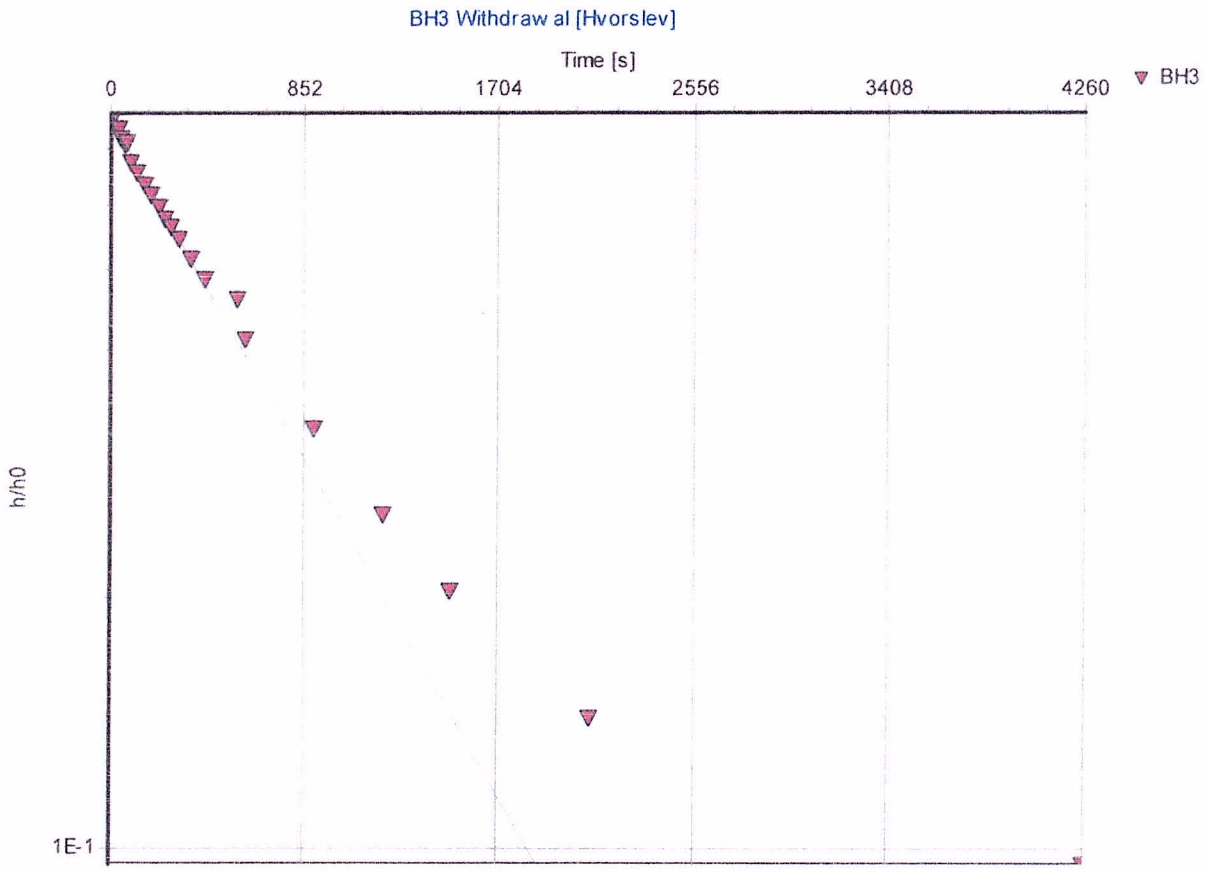
Evaluated by: NMW

Evaluation Date: 25/06/2008

Norbert M. Woerns
96 Lund Street
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH3 Withdrawal**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 3.74E-7 [m/s]

Test parameters:

Test Well:	BH3		Aquifer Thickness:	2.17 [m]
Casing radius:	0.0254 [m]			
Screen length:	3.048 [m]			
Boring radius:	0.127 [m]			

Comments: Fine Sand /Silt/Silt Till

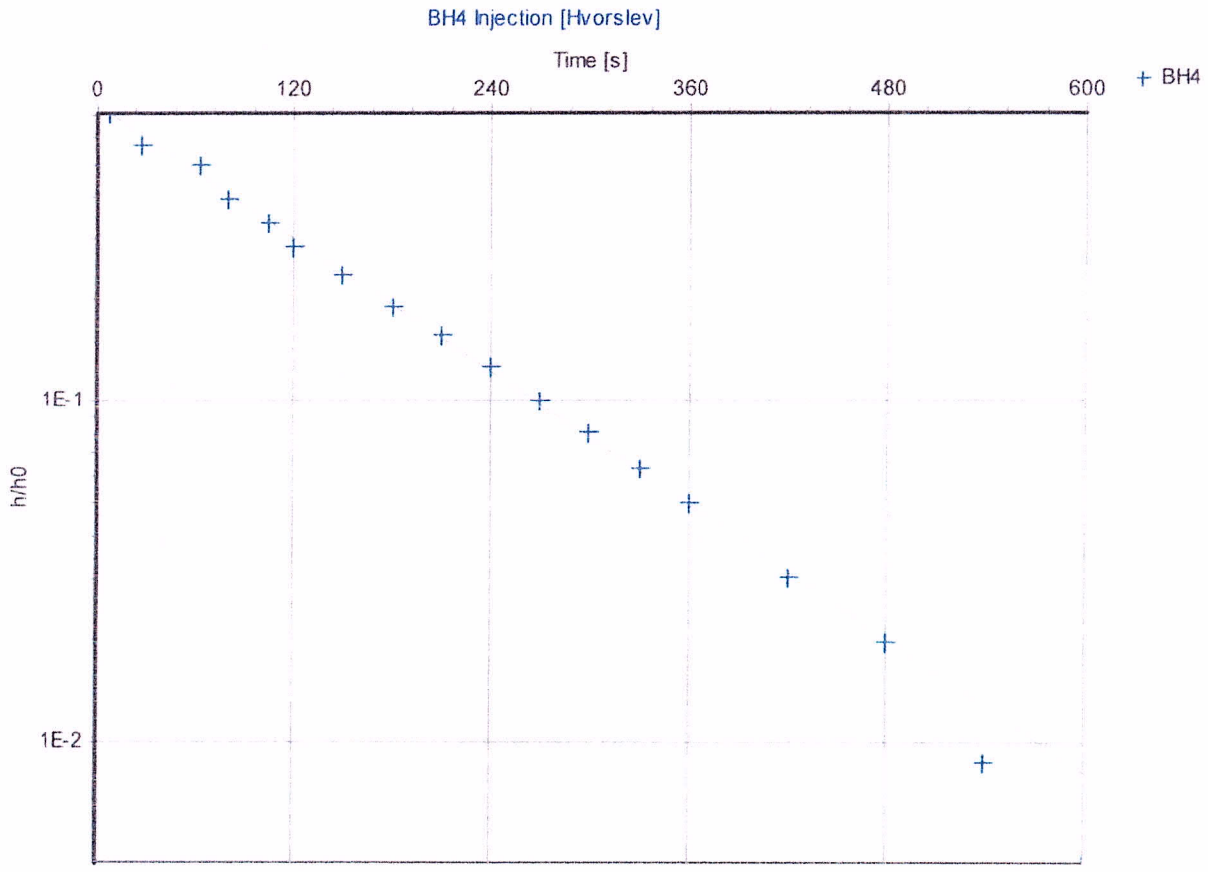
Evaluated by: NMW

Evaluation Date: 25/06/2008

Norbert M. Woerns
96 Lund Street
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH4 Injection**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 2.55E-6 [m/s]

Test parameters:

Test Well:	BH4	Aquifer Thickness:	7.568 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

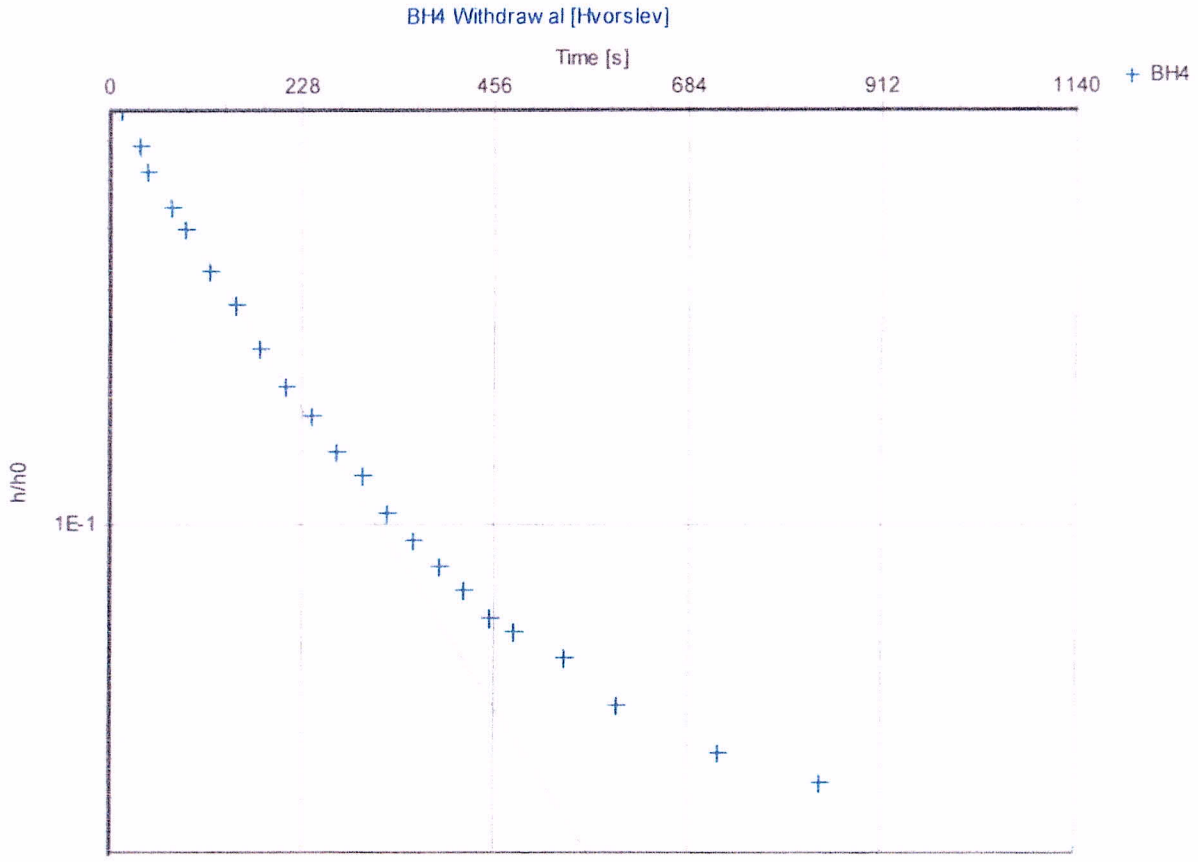
Comments: Silt to Sandy Silt

Evaluated by: NMW
Evaluation Date: 25/06/2008

Norbert M. Woerns
96 Lund Street
Richmond Hill, Ontario, L4C 5V9
Phone: (905) 883-0276

Slug Test Analysis Report

Project: Hyatt Developments (Uxbridge)
Number:
Client: Hyatt Developments (Uxbridge) Inc



Slug Test: **BH4 Withdrawal**

Analysis Method: **Hvorslev**

Analysis Results:

Conductivity: 2.07E-6 [m/s]

Test parameters:

Test Well:	BH4	Aquifer Thickness:	7.568 [m]
Casing radius:	0.0254 [m]		
Screen length:	3.048 [m]		
Boring radius:	0.127 [m]		

Comments: Silt to Sandy Silt

Evaluated by: NMW
Evaluation Date: 19/01/2009

APPENDIX 3

WELL SURVEY SUMMARY

Hyatt Developments (Uxbridge) Inc.
Well Survey Summary

Interview #	Date of Interview	Mailed in Survey	Street Address	Well Type	Well Depth (m)	Water Level (m)	Water Issues Quantity	Water Issues Quality	Comments
1	May 21/08		164 Cemetery Road	drilled	~24.4	N/A		√	Iron and sulphur smell, staining of toilet. Water softener. Good supply never had quantity problems except when horse accidentally turned on water. Domestic use for 5 people, previously had horses
2	Jun 25/08		154 Cemetery Road	dug	11.3	~9.8	√	√	Lots of calcium in water. Ultra violet treatment. Slow water level recovery, 1.2m of water in well. Domestic use for 4 people
3	Jun 25/08		153 Cemetery Road	drilled	~29.0	~6.1		√	Rusty water, have water softener Always enough water Well tested 4 to 5 years ago for subdivision application Domestic use for 2 people
4	Jun 25/08		151 Cemetery Road	drilled	31.1	N/A		√	Fine sediment in water when filling pool Reverse osmosis treatment House and well 4 years old Domestic use for 4 people
5	N/A	N/A	150 Cemetery Road						N/A
6	May 21/08		149 Cemetery Road	drilled	36.6	N/A	√	√	High iron, water very hard, toilet bowl staining Previously ran out of water all the time, not a problem now Do not water lawn, careful with water use, 2 holding tanks Softener, iron filter, ultra violet treatment Domestic use for 5 people, do not drink water.
7	May 21/08		147 Cemetery Road	drilled	~27.4	N/A		√	No problems with supply, fill swimming pool High iron, hard, staining of fixtures Water softener. Domestic use for 2 people
8	Jun 25/08		145 Cemetery Road	drilled	~61.0	N/A		√	No supply problems. Sulphur odour, water softener Tested for bacteris 2 times /year, zero results Domestic use for 4 people
9	May 21/08		146 Cemetery Road	drilled				√	High iron,hard, no odour, bacteria levels O.K Water softener, drink bottled water Domestic use for 4 people
10	May 21/08		144 Cemetery Road	drilled	N/A	N/A			No supply problems,no quality problems Water softener, iron filter Do not water lawn Domestic use for 3 people
11	N/A	Jun 27/08	142 Cemetery Road	N/A	N/A	N/A		√	High iron Water softener No supply problems Domestic use for 2 people
12	Jun 25/08		138 Cemetery Road	drilled	36.6	N/A			Slight hardness to water Water softener Previous well about 12.2m deep not enough water, New well installed 2 yrs ago, no supply problems Domestic use for 4 people
13	Jun 25/08		134 Cemetery Road	drilled	N/A	8.74		√	Some iron staining,no treatment Silt produced whe filled hot tub, not normally a problem Water level measured from ground surface Domestic use for 5 people
14	Jun 25/08		130 Cemetery Road	drilled	~15.2	N/A			Enough supply,run out of hot water, No quality problems, water softener Domestic use for 6 people
15	May 21/08		131 Cemetery Road	drilled	N/A	N/A			No problems, no treatment Drink water, never tested water Never run out of water Domestic use for 2 people
16	N/A	Jun 29/08	126 Cemetery Road	drilled	26.5	N/A	√		Not a great flow rate Water softener and reverse osmosis Domestic use for 2 people
17	N/A	N/A	6th Line (6059)						N/A
18	Jul 10/08		6th Line (6121)	drilled	25.3	2.1		√	Good taste no staining, filtration for sediment Never had supply problems Water in well sometimes flows Domestic use for 2 people
19	N/A	N/A	6th Line (6100)						N/A
20	Jul 10/08		6th Line (6260)	drilled	N/A	1.8		√	Sulphur,hard, staining Water softener Silting when filling pool Domestic use for 2 people

APPENDIX 4

WATER QUALITY RESULTS

Your Project #: HYATT DEVELOPMENT
Site: UXBRIDGE, ONTARIO
Your C.O.C. #: 82811-01

Attention: Norbert M. Woerns
NORBERT M WOERNS
96 Lund St
Richmond Hill, ON
L4C 5V9

Report Date: 2008/05/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A851546
Received: 2008/05/22, 07:37

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	1	N/A	2008/05/26	CAM SOP-00448	SM 2320B
Alkalinity	1	N/A	2008/05/29	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	1	N/A	2008/05/28		
Carbonate, Bicarbonate and Hydroxide	1	N/A	2008/05/30		
Chloride by Automated Colourimetry	2	N/A	2008/05/28	CAM SOP-00463	SM 4500 Cl E
Colour	1	N/A	2008/05/26	CAM SOP-00412	APHA 2120
Colour	1	N/A	2008/05/27	CAM SOP-00412	APHA 2120
Conductivity	1	N/A	2008/05/26	CAM SOP-00448	SM 2510
Conductivity	1	N/A	2008/05/29	CAM SOP-00448	SM 2510
Dissolved Organic Carbon (DOC)	2	N/A	2008/05/27	CAM SOP-00446	SM 5310 B
Hardness (calculated as CaCO3)	2	N/A	2008/05/28	CAM SOP 0102	SM 2340 B
Metals Analysis by ICPMS (as received) (1)	2	2008/05/27	2008/05/27	CAM SOP-00447	EPA 6020
Ion Balance (% Difference)	1	N/A	2008/05/28		
Ion Balance (% Difference)	1	N/A	2008/05/30		
Anion and Cation Sum	1	N/A	2008/05/28		
Anion and Cation Sum	1	N/A	2008/05/30		
Coliform/ E. coli, CFU/100mL	2	N/A	2008/05/22	CAM SOP-00551	MOE E3407
Fecal coliform, (CFU/100mL)	2	N/A	2008/05/22	CAM SOP-00552	LSBE 3371
Heterotrophic plate count, (CFU/mL)	2	N/A	2008/05/22	CAM SOP-00512	SM 9215
Ammonia-N	2	N/A	2008/05/27	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (2)	2	N/A	2008/05/26	CAM SOP-00440	SM 4500 NO3 I
pH	1	N/A	2008/05/26	CAM SOP-00448	SM 4500H
pH	1	N/A	2008/05/29	CAM SOP-00448	SM 4500H
Orthophosphate	2	N/A	2008/05/28	CAM SOP-00461	SM 4500 P-F
Sat. pH and Langelier Index (@ 20C)	1	N/A	2008/05/28		
Sat. pH and Langelier Index (@ 20C)	1	N/A	2008/05/30		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2008/05/28		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2008/05/30		
Sulphate by Automated Colourimetry	2	N/A	2008/05/28	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	1	N/A	2008/05/28		
Total Dissolved Solids (TDS calc)	1	N/A	2008/05/30		
Total Kjeldahl Nitrogen in Water	2	N/A	2008/05/28	CAM SOP-00454	EPA 351.2 Rev 2
Turbidity	2	N/A	2008/05/23	CAM SOP-00417	APHA 2130

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

(1) Metals analysis was performed on the sample 'as received'.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

../2

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Your Project #: HYATT DEVELOPMENT
Site: UXBRIDGE, ONTARIO
Your C.O.C. #: 82811-01

Attention: Norbert M. Woerns
NORBERT M WOERNS
96 Lund St
Richmond Hill, ON
L4C 5V9

Report Date: 2008/05/30

CERTIFICATE OF ANALYSIS

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ANTONELLA BRASIL, Project Manager
Email: Abrasil@maxxamanalytics.com
Phone# (905) 817-5817

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A851546
Report Date: 2008/05/30

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENT
Project name: UXBRIDGE, ONTARIO

RESULTS OF ANALYSES OF WATER

Maxxam ID		Y75258		Y75259		
Sampling Date		2008/05/21		2008/05/21		
COC Number		82811-01		82811-01		
	Units	**#1**	**QC Batch**	**#2**	**RDL**	**QC Batch**
Calculated Parameters						
Anion Sum	me/L	3.84	1518592	5.73	N/A	1518592
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	153	1518589	170	1	1518589
Calculated TDS	mg/L	190	1518597	321	1	1518597
Carb. Alkalinity (calc. as CaCO3)	mg/L	2	1518589	2	1	1518589
Cation Sum	me/L	3.19	1518592	5.91	N/A	1518592
Hardness (CaCO3)	mg/L	130	1518590	250	1	1518590
Ion Balance (% Difference)	%	9.32	1518591	1.53	N/A	1518591
Langelier Index (@ 20C)	N/A	0.482	1518595	0.822		1518595
Langelier Index (@ 4C)	N/A	0.232	1518596	0.573		1518596
Saturation pH (@ 20C)	N/A	7.65	1518595	7.29		1518595
Saturation pH (@ 4C)	N/A	7.90	1518596	7.53		1518596
Inorganics						
Total Ammonia-N	mg/L	ND	1521539	ND	0.05	1521539
Colour	TCU	ND	1521868	ND	2	1520778
Conductivity	umho/cm	363	1521344	570	2	1524754
Total Kjeldahl Nitrogen (TKN)	mg/L	0.2	1522464	0.3	0.1	1522464
Dissolved Organic Carbon	mg/L	0.5	1522815	0.7	0.1	1522815
Orthophosphate (P)	mg/L	ND	1522955	ND	0.01	1522955
pH	pH	8.1	1521339	8.1		1524753
Dissolved Sulphate (SO4)	mg/L	34	1522954	29	1	1522954
Turbidity	NTU	5.1	1520063	8.9	0.1	1520063
Alkalinity (Total as CaCO3)	mg/L	155	1521345	172	1	1524744
Dissolved Chloride (Cl)	mg/L	2	1522950	60	1	1522950
Nitrite (N)	mg/L	ND	1520808	ND	0.01	1520808
Nitrate (N)	mg/L	ND	1520808	ND	0.1	1520808

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A851546
Report Date: 2008/05/30

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENT
Project name: UXBRIDGE, ONTARIO

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		Y75258	Y75259		
Sampling Date		2008/05/21	2008/05/21		
COC Number		82811-01	82811-01		
	Units	#1	#2	RDL	QC Batch
Metals					
. Aluminum (Al)	ug/L	47	7	5	1521904
. Antimony (Sb)	ug/L	ND	ND	0.5	1521904
. Arsenic (As)	ug/L	ND	ND	1	1521904
. Barium (Ba)	ug/L	24	160	5	1521904
. Beryllium (Be)	ug/L	ND	ND	0.5	1521904
. Boron (B)	ug/L	27	11	10	1521904
. Cadmium (Cd)	ug/L	ND	ND	0.1	1521904
. Calcium (Ca)	ug/L	35000	80000	200	1521904
. Chromium (Cr)	ug/L	ND	ND	5	1521904
. Cobalt (Co)	ug/L	ND	ND	0.5	1521904
. Copper (Cu)	ug/L	360	2	1	1521904
. Iron (Fe)	ug/L	ND	860	100	1521904
. Lead (Pb)	ug/L	2.2	ND	0.5	1521904
. Magnesium (Mg)	ug/L	9300	12000	50	1521904
. Manganese (Mn)	ug/L	4	29	2	1521904
. Molybdenum (Mo)	ug/L	1	ND	1	1521904
. Nickel (Ni)	ug/L	2	ND	1	1521904
. Phosphorus (P)	ug/L	ND	ND	100	1521904
. Potassium (K)	ug/L	1600	1200	200	1521904
. Selenium (Se)	ug/L	ND	ND	2	1521904
. Silicon (Si)	ug/L	570	7100	50	1521904
. Silver (Ag)	ug/L	ND	ND	0.1	1521904
. Sodium (Na)	ug/L	14000	19000	100	1521904
. Strontium (Sr)	ug/L	180	200	1	1521904
. Thallium (Tl)	ug/L	ND	ND	0.05	1521904
. Titanium (Ti)	ug/L	ND	ND	5	1521904
. Uranium (U)	ug/L	0.2	ND	0.1	1521904
. Vanadium (V)	ug/L	ND	ND	1	1521904
. Zinc (Zn)	ug/L	74	15	5	1521904

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A851546
Report Date: 2008/05/30

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENT
Project name: UXBRIDGE, ONTARIO

MICROBIOLOGY (WATER)

Maxxam ID		Y75258	Y75259		
Sampling Date		2008/05/21	2008/05/21		
COC Number		82811-01	82811-01		
	Units	**#1**	**#2**	**RDL**	**QC Batch**
Microbiological					
Fecal coliform	CFU/100mL	0	0	N/A	1519061
Heterotrophic plate count	CFU/mL	130	6	N/A	1518937
Background	CFU/100mL	35	370	N/A	1518913
Coliform	CFU/100mL	0	0	N/A	1518913
Escherichia coli	CFU/100mL	0	0	N/A	1518913

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A851546
Report Date: 2008/05/30

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENT
Project name: UXBRIDGE, ONTARIO

GENERAL COMMENTS

Results relate only to the items tested.

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

NORBERT M WOERNS
Attention: Norbert M. Woerns
Client Project #: HYATT DEVELOPMENT
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report

Maxxam Job Number: MA851546

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1518913 MAB	RPD	Background	2008/05/22	NC		%	N/A
		Coliform	2008/05/22	NC		%	N/A
		Escherichia coli	2008/05/22	NC		%	N/A
1518937 MAB	RPD	Heterotrophic plate count	2008/05/22	NC		%	999
1519061 MAB	RPD [Y75258-04]	Fecal coliform	2008/05/22	NC		%	N/A
1520063 PAL	QC STANDARD	Turbidity	2008/05/23		99	%	85 - 115
	Method Blank	Turbidity	2008/05/23	ND, RDL=0.1		NTU	
	RPD	Turbidity	2008/05/23	NC		%	25
1520778 PAL	Spiked Blank	Colour	2008/05/26		97	%	75 - 125
	Method Blank	Colour	2008/05/26	ND, RDL=2		TCU	
	RPD [Y75259-01]	Colour	2008/05/26	NC		%	25
1520808 CCI	MATRIX SPIKE	Nitrite (N)	2008/05/26		98	%	75 - 125
		Nitrate (N)	2008/05/26		92	%	75 - 125
	Spiked Blank	Nitrite (N)	2008/05/26		101	%	80 - 120
		Nitrate (N)	2008/05/26		93	%	80 - 120
	Method Blank	Nitrite (N)	2008/05/26	ND, RDL=0.01		mg/L	
		Nitrate (N)	2008/05/26	ND, RDL=0.1		mg/L	
	RPD	Nitrite (N)	2008/05/26	NC		%	25
		Nitrate (N)	2008/05/26	NC		%	25
1521344 JDE	QC STANDARD	Conductivity	2008/05/26		100	%	85 - 115
	Method Blank	Conductivity	2008/05/26	ND, RDL=2		umho/cm	
	RPD	Conductivity	2008/05/26	0.3		%	25
1521345 JDE	QC STANDARD	Alkalinity (Total as CaCO3)	2008/05/26		97	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2008/05/26	ND, RDL=1		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2008/05/26	0.3		%	25
1521539 ADB	MATRIX SPIKE	Total Ammonia-N	2008/05/27		98	%	80 - 120
	Spiked Blank	Total Ammonia-N	2008/05/27		104	%	80 - 120
	Method Blank	Total Ammonia-N	2008/05/27	ND, RDL=0.05		mg/L	
	RPD	Total Ammonia-N	2008/05/27	1.6		%	25
1521868 KTH	Spiked Blank	Colour	2008/05/27		99	%	75 - 125
	Method Blank	Colour	2008/05/27	ND, RDL=2		TCU	
	RPD	Colour	2008/05/27	NC		%	25
1521904 HRE	MATRIX SPIKE [Y75258-03]						
		. Aluminum (Al)	2008/05/27		97	%	80 - 120
		. Antimony (Sb)	2008/05/27		103	%	80 - 120
		. Arsenic (As)	2008/05/27		103	%	80 - 120
		. Barium (Ba)	2008/05/27		102	%	80 - 120
		. Beryllium (Be)	2008/05/27		102	%	80 - 120
		. Boron (B)	2008/05/27		104	%	80 - 120
		. Cadmium (Cd)	2008/05/27		102	%	80 - 120
		. Calcium (Ca)	2008/05/27		NC	%	80 - 120
		. Chromium (Cr)	2008/05/27		100	%	80 - 120
		. Cobalt (Co)	2008/05/27		97	%	80 - 120
		. Copper (Cu)	2008/05/27		NC (1)	%	80 - 120
		. Iron (Fe)	2008/05/27		106	%	80 - 120
		. Lead (Pb)	2008/05/27		99	%	80 - 120
		. Magnesium (Mg)	2008/05/27		96	%	80 - 120
		. Manganese (Mn)	2008/05/27		102	%	80 - 120
		. Molybdenum (Mo)	2008/05/27		104	%	80 - 120
		. Nickel (Ni)	2008/05/27		97	%	80 - 120
		. Phosphorus (P)	2008/05/27		94	%	80 - 120
		. Potassium (K)	2008/05/27		101	%	80 - 120
		. Selenium (Se)	2008/05/27		99	%	80 - 120
		. Silicon (Si)	2008/05/27		101	%	80 - 120
		. Silver (Ag)	2008/05/27		97	%	80 - 120

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NORBERT M WOERNS
Attention: Norbert M. Woerns
Client Project #: HYATT DEVELOPMENT
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA851546

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1521904 HRE	MATRIX SPIKE						
	[Y75258-03]	. Sodium (Na)	2008/05/27		NC	%	80 - 120
		. Strontium (Sr)	2008/05/27		98	%	80 - 120
		. Thallium (Tl)	2008/05/27		97	%	80 - 120
		. Titanium (Ti)	2008/05/27		103	%	80 - 120
		. Uranium (U)	2008/05/27		99	%	80 - 120
		. Vanadium (V)	2008/05/27		101	%	80 - 120
		. Zinc (Zn)	2008/05/27		99	%	80 - 120
	Spiked Blank	. Aluminum (Al)	2008/05/27		100	%	85 - 115
		. Antimony (Sb)	2008/05/27		102	%	85 - 115
		. Arsenic (As)	2008/05/27		104	%	85 - 115
		. Barium (Ba)	2008/05/27		103	%	85 - 115
		. Beryllium (Be)	2008/05/27		103	%	85 - 115
		. Boron (B)	2008/05/27		104	%	85 - 115
		. Cadmium (Cd)	2008/05/27		102	%	85 - 115
		. Calcium (Ca)	2008/05/27		103	%	85 - 115
		. Chromium (Cr)	2008/05/27		103	%	85 - 115
		. Cobalt (Co)	2008/05/27		99	%	85 - 115
		. Copper (Cu)	2008/05/27		99	%	85 - 115
		. Iron (Fe)	2008/05/27		109	%	85 - 115
		. Lead (Pb)	2008/05/27		101	%	85 - 115
		. Magnesium (Mg)	2008/05/27		103	%	85 - 115
		. Manganese (Mn)	2008/05/27		104	%	85 - 115
		. Molybdenum (Mo)	2008/05/27		105	%	85 - 115
		. Nickel (Ni)	2008/05/27		99	%	85 - 115
		. Phosphorus (P)	2008/05/27		94	%	85 - 115
		. Potassium (K)	2008/05/27		103	%	85 - 115
		. Selenium (Se)	2008/05/27		99	%	85 - 115
		. Silicon (Si)	2008/05/27		104	%	85 - 115
		. Silver (Ag)	2008/05/27		98	%	85 - 115
		. Sodium (Na)	2008/05/27		106	%	85 - 115
		. Strontium (Sr)	2008/05/27		100	%	85 - 115
		. Thallium (Tl)	2008/05/27		99	%	85 - 115
		. Titanium (Ti)	2008/05/27		105	%	85 - 115
		. Uranium (U)	2008/05/27		101	%	85 - 115
		. Vanadium (V)	2008/05/27		103	%	85 - 115
		. Zinc (Zn)	2008/05/27		100	%	85 - 115
	Method Blank	. Aluminum (Al)	2008/05/27	ND, RDL=5		ug/L	
		. Antimony (Sb)	2008/05/27	ND, RDL=0.5		ug/L	
		. Arsenic (As)	2008/05/27	ND, RDL=1		ug/L	
		. Barium (Ba)	2008/05/27	ND, RDL=5		ug/L	
		. Beryllium (Be)	2008/05/27	ND, RDL=0.5		ug/L	
		. Boron (B)	2008/05/27	ND, RDL=10		ug/L	
		. Cadmium (Cd)	2008/05/27	ND, RDL=0.1		ug/L	
		. Calcium (Ca)	2008/05/27	ND, RDL=200		ug/L	
		. Chromium (Cr)	2008/05/27	ND, RDL=5		ug/L	
		. Cobalt (Co)	2008/05/27	ND, RDL=0.5		ug/L	
		. Copper (Cu)	2008/05/27	ND, RDL=1		ug/L	
		. Iron (Fe)	2008/05/27	ND, RDL=100		ug/L	
		. Lead (Pb)	2008/05/27	ND, RDL=0.5		ug/L	
		. Magnesium (Mg)	2008/05/27	ND, RDL=50		ug/L	
		. Manganese (Mn)	2008/05/27	ND, RDL=2		ug/L	
		. Molybdenum (Mo)	2008/05/27	ND, RDL=1		ug/L	
		. Nickel (Ni)	2008/05/27	ND, RDL=1		ug/L	
		. Phosphorus (P)	2008/05/27	ND, RDL=100		ug/L	

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NORBERT M WOERNS
Attention: Norbert M. Woerns
Client Project #: HYATT DEVELOPMENT
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA851546

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1521904 HRE	Method Blank	. Potassium (K)	2008/05/27	ND, RDL=200		ug/L	
		. Selenium (Se)	2008/05/27	ND, RDL=2		ug/L	
		. Silicon (Si)	2008/05/27	ND, RDL=50		ug/L	
		. Silver (Ag)	2008/05/27	ND, RDL=0.1		ug/L	
		. Sodium (Na)	2008/05/27	ND, RDL=100		ug/L	
		. Strontium (Sr)	2008/05/27	ND, RDL=1		ug/L	
		. Thallium (Tl)	2008/05/27	ND, RDL=0.05		ug/L	
		. Titanium (Ti)	2008/05/27	ND, RDL=5		ug/L	
		. Uranium (U)	2008/05/27	ND, RDL=0.1		ug/L	
		. Vanadium (V)	2008/05/27	ND, RDL=1		ug/L	
		. Zinc (Zn)	2008/05/27	ND, RDL=5		ug/L	
	RPD [Y75258-03]	. Aluminum (Al)	2008/05/27	1.3		%	25
		. Antimony (Sb)	2008/05/27	NC		%	25
		. Arsenic (As)	2008/05/27	NC		%	25
		. Barium (Ba)	2008/05/27	NC		%	25
		. Beryllium (Be)	2008/05/27	NC		%	25
		. Boron (B)	2008/05/27	NC		%	25
		. Cadmium (Cd)	2008/05/27	NC		%	25
		. Calcium (Ca)	2008/05/27	2.6		%	25
		. Chromium (Cr)	2008/05/27	NC		%	25
		. Cobalt (Co)	2008/05/27	NC		%	25
		. Copper (Cu)	2008/05/27	0.6		%	25
		. Iron (Fe)	2008/05/27	NC		%	25
		. Lead (Pb)	2008/05/27	NC		%	25
		. Magnesium (Mg)	2008/05/27	0.02		%	25
		. Manganese (Mn)	2008/05/27	NC		%	25
		. Molybdenum (Mo)	2008/05/27	NC		%	25
		. Nickel (Ni)	2008/05/27	NC		%	25
		. Phosphorus (P)	2008/05/27	NC		%	25
		. Potassium (K)	2008/05/27	0.8		%	25
		. Selenium (Se)	2008/05/27	NC		%	25
		. Silicon (Si)	2008/05/27	0.7		%	25
		. Silver (Ag)	2008/05/27	NC		%	25
		. Sodium (Na)	2008/05/27	0.1		%	25
		. Strontium (Sr)	2008/05/27	1.5		%	25
		. Thallium (Tl)	2008/05/27	NC		%	25
		. Titanium (Ti)	2008/05/27	NC		%	25
		. Uranium (U)	2008/05/27	NC		%	25
		. Vanadium (V)	2008/05/27	NC		%	25
		. Zinc (Zn)	2008/05/27	2.1		%	25
1522464 SBU	MATRIX SPIKE [Y75259-02]	Total Kjeldahl Nitrogen (TKN)	2008/05/28		111	%	80 - 120
	QC STANDARD	Total Kjeldahl Nitrogen (TKN)	2008/05/28		96	%	85 - 115
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2008/05/28		100	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2008/05/28	0.1, RDL=0.1		mg/L	
	RPD [Y75259-02]	Total Kjeldahl Nitrogen (TKN)	2008/05/28	NC		%	20
1522815 SAC	MATRIX SPIKE	Dissolved Organic Carbon	2008/05/27		99	%	75 - 125
	Spiked Blank	Dissolved Organic Carbon	2008/05/27		102	%	75 - 125
	Method Blank	Dissolved Organic Carbon	2008/05/27	0.1, RDL=0.1		mg/L	
	RPD	Dissolved Organic Carbon	2008/05/27	1.4		%	20
1522950 C_N	MATRIX SPIKE	Dissolved Chloride (Cl)	2008/05/28		124	%	75 - 125
	Spiked Blank	Dissolved Chloride (Cl)	2008/05/28		102	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2008/05/28	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2008/05/28	NC		%	20
1522954 C_N	MATRIX SPIKE	Dissolved Sulphate (SO4)	2008/05/28		NC (1)	%	75 - 125

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NORBERT M WOERNS
Attention: Norbert M. Woerns
Client Project #: HYATT DEVELOPMENT
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA851546

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1522954 C_N	Spiked Blank	Dissolved Sulphate (SO4)	2008/05/28		105	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2008/05/28	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2008/05/28	0.7		%	25
1522955 C_N	MATRIX SPIKE	Orthophosphate (P)	2008/05/28		111	%	75 - 125
	Spiked Blank	Orthophosphate (P)	2008/05/28		102	%	80 - 120
	Method Blank	Orthophosphate (P)	2008/05/28	ND, RDL=0.01		mg/L	
	RPD	Orthophosphate (P)	2008/05/28	NC		%	25
1524744 JDE	QC STANDARD	Alkalinity (Total as CaCO3)	2008/05/29		97	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2008/05/29	ND, RDL=1		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2008/05/29	0.9		%	25
1524754 JDE	QC STANDARD	Conductivity	2008/05/29		101	%	85 - 115
	Method Blank	Conductivity	2008/05/29	ND, RDL=2		umho/cm	
	RPD	Conductivity	2008/05/29	0.1		%	25

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample
(1) The recovery in the matrix spike was not calculated (NC). Because of the high concentration of this analyte in the parent sample, the relative difference between the spiked and unspiked concentrations is not sufficiently significant to permit a reliable recovery calculation.

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Validation Signature Page

Maxxam Job #: A851546

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

ALIYA MALIK, ANALYST II

CHRISTINA NERVO, Scientific Services

DAVID SHEPHERD, Scientific Specialist

MARIA BONGOLAN, ANALYST II

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

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Your Project #: HYATT DEVELOPMENTS
Site: UXBRIDGE, ONTARIO
Your C.O.C. #: OO565657

Attention: Norbert M. Woerns
NORBERT M WOERNS
96 Lund St
Richmond Hill, ON
L4C 5V9

Report Date: 2008/07/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A875011
Received: 2008/07/11, 14:11

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	1	N/A	2008/07/16	CAM SOP-00448	SM 2320B
Alkalinity	3	N/A	2008/07/17	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	1	N/A	2008/07/16		
Carbonate, Bicarbonate and Hydroxide	1	N/A	2008/07/17		
Carbonate, Bicarbonate and Hydroxide	2	N/A	2008/07/18		
Chloride by Automated Colourimetry	4	N/A	2008/07/18	CAM SOP-00463	SM 4500 Cl E
Colour	1	N/A	2008/07/15	CAM SOP-00412	APHA 2120
Colour	3	N/A	2008/07/18	CAM SOP-00412	APHA 2120
Conductivity	1	N/A	2008/07/16	CAM SOP-00448	SM 2510
Conductivity	3	N/A	2008/07/17	CAM SOP-00448	SM 2510
Dissolved Organic Carbon (DOC)	3	N/A	2008/07/16	CAM SOP-00446	SM 5310 B
Hardness (calculated as CaCO3)	1	N/A	2008/07/18	CAM SOP 0102	SM 2340 B
Hardness (calculated as CaCO3)	3	N/A	2008/07/21	CAM SOP 0102	SM 2340 B
Lab Filtered Metals Analysis by ICP	1	2008/07/17	2008/07/18	CAM SOP-00408	EPA 6010
Metals Analysis by ICPMS (as received) (1)	1	2008/07/16	2008/07/20	CAM SOP-00447	EPA 6020
Metals Analysis by ICPMS (as received) (1)	2	2008/07/17	2008/07/21	CAM SOP-00447	EPA 6020
Total Metals Analysis by ICPMS	1	N/A	2008/07/17	CAM SOP-00447	EPA 6020
Ion Balance (% Difference)	3	N/A	2008/07/21		
Anion and Cation Sum	3	N/A	2008/07/21		
Ammonia-N	3	N/A	2008/07/17	CAM SOP-00441	US GS I-2522-90
Ammonia-N	1	N/A	2008/07/18	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (2)	1	N/A	2008/07/17	CAM SOP-00440	SM 4500 NO3 I
Nitrate (NO3) and Nitrite (NO2) in Water (2)	3	N/A	2008/07/18	CAM SOP-00440	SM 4500 NO3 I
pH	1	N/A	2008/07/16	CAM SOP-00448	SM 4500H
pH	3	N/A	2008/07/17	CAM SOP-00448	SM 4500H
Orthophosphate	4	N/A	2008/07/18	CAM SOP-00461	SM 4500 P-F
Sat. pH and Langelier Index (@ 20C)	1	N/A	2008/07/18		
Sat. pH and Langelier Index (@ 20C)	3	N/A	2008/07/21		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2008/07/18		
Sat. pH and Langelier Index (@ 4C)	3	N/A	2008/07/21		
Sulphate by Automated Colourimetry	4	N/A	2008/07/18	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	1	N/A	2008/07/18		
Total Dissolved Solids (TDS calc)	3	N/A	2008/07/21		
Total Kjeldahl Nitrogen in Water	4	N/A	2008/07/18	CAM SOP-00454	EPA 351.2 Rev 2
Total Organic Carbon (TOC)	1	N/A	2017/07/20	CAM SOP-00446	EPA 415.1 modified
Total Phosphorus (Colourimetric)	1	2008/07/17	2008/07/18	CAM SOP-00407	APHA 4500 P,B,F
Turbidity	1	N/A	2008/07/14	CAM SOP-00417	APHA 2130
Turbidity	3	N/A	2008/07/15	CAM SOP-00417	APHA 2130

../2

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Your Project #: HYATT DEVELOPMENTS
Site: UXBRIDGE, ONTARIO
Your C.O.C. #: OO565657

Attention: Norbert M. Woerns
NORBERT M WOERNS
96 Lund St
Richmond Hill, ON
L4C 5V9

Report Date: 2008/07/21

CERTIFICATE OF ANALYSIS

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

(1) Metals analysis was performed on the sample 'as received'.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ANTONELLA BRASIL, Project Manager
Email: Abrasil@maxxamanalytics.com
Phone# (905) 817-5817

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A875011
Report Date: 2008/07/21

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENTS
Project name: UXBRIDGE, ONTARIO

RESULTS OF ANALYSES OF WATER

Maxxam ID		Z81982		Z81983		
Sampling Date		2008/07/10		2008/07/10		
COC Number		OO565657		OO565657		
	Units	**BHID**	**QC Batch**	**BHID-6**	**RDL**	**QC Batch**
Calculated Parameters						
Anion Sum	me/L	5.25	1559333	5.23	N/A	1559333
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	175	1559376	175	1	1559376
Calculated TDS	mg/L	315	1559381	312	1	1559381
Carb. Alkalinity (calc. as CaCO3)	mg/L	4	1559376	3	1	1559376
Cation Sum	me/L	5.73	1559333	5.60	N/A	1559333
Hardness (CaCO3)	mg/L	120	1559330	120	1	1559330
Ion Balance (% Difference)	%	4.40	1559332	3.43	N/A	1559332
Langelier Index (@ 20C)	N/A	0.775	1559379	0.619		1559379
Langelier Index (@ 4C)	N/A	0.526	1559380	0.370		1559380
Saturation pH (@ 20C)	N/A	7.58	1559379	7.60		1559379
Saturation pH (@ 4C)	N/A	7.83	1559380	7.85		1559380
Inorganics						
Total Ammonia-N	mg/L	0.06	1563394	ND	0.05	1563394
Colour	TCU	5	1560451	5	2	1564680
Conductivity	umho/cm	505	1561887	508	2	1563138
Total Kjeldahl Nitrogen (TKN)	mg/L	0.5	1563760	0.5	0.1	1563760
Dissolved Organic Carbon	mg/L	2.8	1560768	3.2	0.1	1560768
Orthophosphate (P)	mg/L	ND	1563553	ND	0.01	1563553
pH	pH	8.4	1561886	8.2		1563139
Dissolved Sulphate (SO4)	mg/L	50	1563579	49	1	1563579
Turbidity	NTU	0.1	1561274	0.1	0.1	1561274
Alkalinity (Total as CaCO3)	mg/L	178	1561891	178	1	1563137
Dissolved Chloride (Cl)	mg/L	23	1563576	23	1	1563576
Nitrite (N)	mg/L	0.01	1563702	ND	0.01	1563702
Nitrate (N)	mg/L	ND	1563702	ND	0.1	1563702

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: A875011
Report Date: 2008/07/21

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENTS
Project name: UXBRIDGE, ONTARIO

RESULTS OF ANALYSES OF WATER

Maxxam ID		Z81984			Z81985		
Sampling Date		2008/07/10			2008/07/10		
COC Number		OO565657			OO565657		
	Units	**BH3**	**RDL**	**QC Batch**	**SURFACE WATER**	**RDL**	**QC Batch**
Calculated Parameters							
Anion Sum	me/L	9.56	N/A	1559333		N/A	1559333
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	173	1	1559376	252	1	1559376
Calculated TDS	mg/L	558	1	1559381	750	1	1559381
Carb. Alkalinity (calc. as CaCO3)	mg/L	2	1	1559376	3	1	1559376
Cation Sum	me/L	10.4	N/A	1559333		N/A	1559333
Hardness (CaCO3)	mg/L	380	1	1559330	300	1	1559330
Ion Balance (% Difference)	%	4.31	N/A	1559332		N/A	1559332
Langelier Index (@ 20C)	N/A	1.03		1559379	1.12		1559379
Langelier Index (@ 4C)	N/A	0.787		1559380	0.872		1559380
Saturation pH (@ 20C)	N/A	7.14		1559379	7.05		1559379
Saturation pH (@ 4C)	N/A	7.39		1559380	7.29		1559380
Inorganics							
Total Ammonia-N	mg/L	0.06	0.05	1563392	ND	0.05	1563394
Colour	TCU	4	2	1564680	55	2	1564680
Conductivity	umho/cm	998	2	1563120	1470	2	1563138
Total Kjeldahl Nitrogen (TKN)	mg/L	0.3	0.1	1563760	1.3	0.2	1563770
Dissolved Organic Carbon	mg/L	2.3	0.1	1560768			
Total Organic Carbon (TOC)	mg/L				14.6	0.1	1563387
Orthophosphate (P)	mg/L	ND	0.01	1563553	ND	0.01	1563553
pH	pH	8.2		1563119	8.2		1563139
Total Phosphorus	mg/L				0.032	0.002	1563641
Dissolved Sulphate (SO4)	mg/L	63	1	1563579	15	1	1563579
Turbidity	NTU	0.8	0.1	1561274	1.7	0.1	1560279
Alkalinity (Total as CaCO3)	mg/L	176	1	1563121	255	1	1563137
Dissolved Chloride (Cl)	mg/L	170	1	1563576	280	5	1563576
Nitrite (N)	mg/L	ND	0.01	1562929	ND	0.01	1563425
Nitrate (N)	mg/L	ND	0.1	1562929	ND	0.1	1563425

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A875011
Report Date: 2008/07/21

NORBERT M WOERNS
Client Project #: HYATT DEVELOPMENTS
Project name: UXBRIDGE, ONTARIO

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		Z81982		Z81983	Z81984		
Sampling Date		2008/07/10		2008/07/10	2008/07/10		
COC Number		OO565657		OO565657	OO565657		
	Units	**BHID**	**QC Batch**	**BHID-6**	**BH3**	**RDL**	**QC Batch**
Metals							
. Aluminum (Al)	ug/L	7	1562358	7	ND	5	1563995
. Antimony (Sb)	ug/L	1.2	1562358	1.3	ND	0.5	1563995
. Arsenic (As)	ug/L	3	1562358	3	ND	1	1563995
. Barium (Ba)	ug/L	71	1562358	74	82	5	1563995
. Beryllium (Be)	ug/L	ND	1562358	ND	ND	0.5	1563995
. Boron (B)	ug/L	39	1562358	39	ND	10	1563995
. Cadmium (Cd)	ug/L	ND	1562358	ND	ND	0.1	1563995
. Calcium (Ca)	ug/L	39000	1562358	38000	120000	200	1563995
. Chromium (Cr)	ug/L	ND	1562358	ND	ND	5	1563995
. Cobalt (Co)	ug/L	ND	1562358	ND	ND	0.5	1563995
. Copper (Cu)	ug/L	ND	1562358	ND	ND	1	1563995
. Iron (Fe)	ug/L	ND	1562358	ND	330	100	1563995
. Lead (Pb)	ug/L	ND	1562358	ND	ND	0.5	1563995
. Magnesium (Mg)	ug/L	6200	1562358	6100	18000	50	1563995
. Manganese (Mn)	ug/L	10	1562358	10	38	2	1563995
. Molybdenum (Mo)	ug/L	14	1562358	14	3	1	1563995
. Nickel (Ni)	ug/L	ND	1562358	ND	ND	1	1563995
. Phosphorus (P)	ug/L	ND	1562358	ND	ND	100	1563995
. Potassium (K)	ug/L	1400	1562358	1400	1600	200	1563995
. Selenium (Se)	ug/L	ND	1562358	ND	ND	2	1563995
. Silicon (Si)	ug/L	6700	1562358	6700	7100	50	1563995
. Silver (Ag)	ug/L	ND	1562358	ND	ND	0.1	1563995
. Sodium (Na)	ug/L	74000	1562358	73000	63000	100	1563995
. Strontium (Sr)	ug/L	100	1562358	98	250	1	1563995
. Thallium (Tl)	ug/L	ND	1562358	ND	ND	0.05	1563995
. Titanium (Ti)	ug/L	ND	1562358	ND	ND	5	1563995
. Uranium (U)	ug/L	5.3	1562358	5.5	1.5	0.1	1563995
. Vanadium (V)	ug/L	2	1562358	2	ND	1	1563995
. Zinc (Zn)	ug/L	ND	1562358	ND	ND	5	1563995

ND = Not detected
RDL = Reportable Detection Limit
QC Batch – Quality Control Batch

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NORBERT M WOERNS
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Project name: UXBRIDGE, ONTARIO

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		Z81985		
Sampling Date		2008/07/10		
COC Number		OO565657		
	Units	**SURFACE WATER**	**RDL**	**QC Batch**
Metals				
Dissolved Calcium (Ca)	mg/L	115	0.05	1563380
Dissolved Magnesium (Mg)	mg/L	3.92	0.05	1563380
Dissolved Potassium (K)	mg/L	ND	1	1563380
Dissolved Sodium (Na)	mg/L	180	0.5	1563380
Total Aluminum (Al)	ug/L	11	5	1564153
Total Antimony (Sb)	ug/L	ND	0.5	1564153
Total Arsenic (As)	ug/L	ND	1	1564153
Total Barium (Ba)	ug/L	25	5	1564153
Total Beryllium (Be)	ug/L	ND	0.5	1564153
Total Boron (B)	ug/L	27	10	1564153
Total Cadmium (Cd)	ug/L	ND	0.1	1564153
Total Calcium (Ca)	ug/L	110000	200	1564153
Total Chromium (Cr)	ug/L	ND	5	1564153
Total Cobalt (Co)	ug/L	ND	0.5	1564153
Total Copper (Cu)	ug/L	ND	1	1564153
Total Iron (Fe)	ug/L	330	100	1564153
Total Lead (Pb)	ug/L	ND	0.5	1564153
Total Magnesium (Mg)	ug/L	4100	50	1564153
Total Manganese (Mn)	ug/L	230	2	1564153
Total Molybdenum (Mo)	ug/L	ND	1	1564153
Total Nickel (Ni)	ug/L	ND	1	1564153
Total Potassium (K)	ug/L	ND	200	1564153
Total Selenium (Se)	ug/L	ND	2	1564153
Total Silicon (Si)	ug/L	2400	50	1564153
Total Silver (Ag)	ug/L	ND	0.1	1564153
Total Sodium (Na)	ug/L	180000	100	1564153
Total Thallium (Tl)	ug/L	ND	0.05	1564153
Total Tungsten (W)	ug/L	ND	1	1564153
Total Uranium (U)	ug/L	0.3	0.1	1564153
Total Vanadium (V)	ug/L	ND	1	1564153
Total Zinc (Zn)	ug/L	ND	5	1564153

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		Z81985		
Sampling Date		2008/07/10		
COC Number		OO565657		
	Units	**SURFACE WATER**	**RDL**	**QC Batch**
Total Zirconium (Zr)	ug/L	ND	1	1564153

ND = Not detected
RDL = Reportable Detection Limit
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GENERAL COMMENTS

Results relate only to the items tested.

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Attention: Norbert M. Woerns
Client Project #: HYATT DEVELOPMENTS
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1560279 KTH	QC STANDARD	Turbidity	2008/07/14		98	%	85 - 115
	Method Blank	Turbidity	2008/07/14	ND, RDL=0.1		NTU	
	RPD	Turbidity	2008/07/14	NC		%	25
1560451 KTH	Spiked Blank	Colour	2008/07/15		100	%	75 - 125
	Method Blank	Colour	2008/07/15	ND, RDL=2		TCU	
	RPD	Colour	2008/07/15	NC		%	25
1560768 SAC	MATRIX SPIKE	Dissolved Organic Carbon	2008/07/16		NC	%	75 - 125
	Spiked Blank	Dissolved Organic Carbon	2008/07/16		93	%	75 - 125
	Method Blank	Dissolved Organic Carbon	2008/07/16	ND, RDL=0.1		mg/L	
	RPD	Dissolved Organic Carbon	2008/07/16	0.9		%	20
1561274 KTH	QC STANDARD	Turbidity	2008/07/15		101	%	85 - 115
	Method Blank	Turbidity	2008/07/15	ND, RDL=0.1		NTU	
	RPD [Z81982-01]	Turbidity	2008/07/15	NC		%	25
1561887 YPA	QC STANDARD	Conductivity	2008/07/16		101	%	85 - 115
	Method Blank	Conductivity	2008/07/16	ND, RDL=2		umho/cm	
	RPD	Conductivity	2008/07/16	0.6		%	25
1561891 YPA	QC STANDARD	Alkalinity (Total as CaCO3)	2008/07/16		101	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2008/07/16	ND, RDL=1		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2008/07/16	1		%	25
1562358 JBW	MATRIX SPIKE	. Aluminum (Al)	2008/07/20		128 (1)	%	80 - 120
		. Antimony (Sb)	2008/07/20		103	%	80 - 120
		. Arsenic (As)	2008/07/20		104	%	80 - 120
		. Barium (Ba)	2008/07/20		101	%	80 - 120
		. Beryllium (Be)	2008/07/20		104	%	80 - 120
		. Boron (B)	2008/07/20		104	%	80 - 120
		. Cadmium (Cd)	2008/07/20		102	%	80 - 120
		. Calcium (Ca)	2008/07/20		NC (2)	%	80 - 120
		. Chromium (Cr)	2008/07/20		100	%	80 - 120
		. Cobalt (Co)	2008/07/20		97	%	80 - 120
		. Copper (Cu)	2008/07/20		96	%	80 - 120
		. Iron (Fe)	2008/07/20		103	%	80 - 120
		. Lead (Pb)	2008/07/20		98	%	80 - 120
		. Magnesium (Mg)	2008/07/20		99	%	80 - 120
		. Manganese (Mn)	2008/07/20		98	%	80 - 120
		. Molybdenum (Mo)	2008/07/20		103	%	80 - 120
		. Nickel (Ni)	2008/07/20		96	%	80 - 120
		. Phosphorus (P)	2008/07/20		97	%	80 - 120
		. Potassium (K)	2008/07/20		102	%	80 - 120
		. Selenium (Se)	2008/07/20		101	%	80 - 120
		. Silicon (Si)	2008/07/20		100	%	80 - 120
		. Silver (Ag)	2008/07/20		97	%	80 - 120
		. Sodium (Na)	2008/07/20		NC (2)	%	80 - 120
		. Strontium (Sr)	2008/07/20		98	%	80 - 120
		. Thallium (Tl)	2008/07/20		100	%	80 - 120
		. Titanium (Ti)	2008/07/20		103	%	80 - 120
		. Uranium (U)	2008/07/20		102	%	80 - 120
		. Vanadium (V)	2008/07/20		101	%	80 - 120
		. Zinc (Zn)	2008/07/20		101	%	80 - 120
	Spiked Blank	. Aluminum (Al)	2008/07/20		100	%	85 - 115
		. Antimony (Sb)	2008/07/20		101	%	85 - 115
		. Arsenic (As)	2008/07/20		101	%	85 - 115
		. Barium (Ba)	2008/07/20		100	%	85 - 115
		. Beryllium (Be)	2008/07/20		102	%	85 - 115
		. Boron (B)	2008/07/20		104	%	85 - 115
		. Cadmium (Cd)	2008/07/20		102	%	85 - 115

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NORBERT M WOERNS
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Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1562358 JBW	Spiked Blank	. Calcium (Ca)	2008/07/20		100	%	85 - 115
		. Chromium (Cr)	2008/07/20		99	%	85 - 115
		. Cobalt (Co)	2008/07/20		97	%	85 - 115
		. Copper (Cu)	2008/07/20		94	%	85 - 115
		. Iron (Fe)	2008/07/20		102	%	85 - 115
		. Lead (Pb)	2008/07/20		98	%	85 - 115
		. Magnesium (Mg)	2008/07/20		104	%	85 - 115
		. Manganese (Mn)	2008/07/20		97	%	85 - 115
		. Molybdenum (Mo)	2008/07/20		101	%	85 - 115
		. Nickel (Ni)	2008/07/20		96	%	85 - 115
		. Phosphorus (P)	2008/07/20		98	%	85 - 115
		. Potassium (K)	2008/07/20		101	%	85 - 115
		. Selenium (Se)	2008/07/20		98	%	85 - 115
		. Silicon (Si)	2008/07/20		101	%	85 - 115
		. Silver (Ag)	2008/07/20		97	%	85 - 115
		. Sodium (Na)	2008/07/20		102	%	85 - 115
		. Strontium (Sr)	2008/07/20		99	%	85 - 115
		. Thallium (Tl)	2008/07/20		97	%	85 - 115
		. Titanium (Ti)	2008/07/20		100	%	85 - 115
		. Uranium (U)	2008/07/20		100	%	85 - 115
		. Vanadium (V)	2008/07/20		100	%	85 - 115
		. Zinc (Zn)	2008/07/20		98	%	85 - 115
	Method Blank	. Aluminum (Al)	2008/07/20	ND, RDL=5		ug/L	
		. Antimony (Sb)	2008/07/20	ND, RDL=0.5		ug/L	
		. Arsenic (As)	2008/07/20	ND, RDL=1		ug/L	
		. Barium (Ba)	2008/07/20	ND, RDL=5		ug/L	
		. Beryllium (Be)	2008/07/20	ND, RDL=0.5		ug/L	
		. Boron (B)	2008/07/20	ND, RDL=10		ug/L	
		. Cadmium (Cd)	2008/07/20	ND, RDL=0.1		ug/L	
		. Calcium (Ca)	2008/07/20	ND, RDL=200		ug/L	
		. Chromium (Cr)	2008/07/20	ND, RDL=5		ug/L	
		. Cobalt (Co)	2008/07/20	ND, RDL=0.5		ug/L	
		. Copper (Cu)	2008/07/20	ND, RDL=1		ug/L	
		. Iron (Fe)	2008/07/20	ND, RDL=100		ug/L	
		. Lead (Pb)	2008/07/20	ND, RDL=0.5		ug/L	
		. Magnesium (Mg)	2008/07/20	ND, RDL=50		ug/L	
		. Manganese (Mn)	2008/07/20	ND, RDL=2		ug/L	
		. Molybdenum (Mo)	2008/07/20	ND, RDL=1		ug/L	
		. Nickel (Ni)	2008/07/20	ND, RDL=1		ug/L	
		. Phosphorus (P)	2008/07/20	ND, RDL=100		ug/L	
		. Potassium (K)	2008/07/20	ND, RDL=200		ug/L	
		. Selenium (Se)	2008/07/20	ND, RDL=2		ug/L	
		. Silicon (Si)	2008/07/20	ND, RDL=50		ug/L	
		. Silver (Ag)	2008/07/20	ND, RDL=0.1		ug/L	
		. Sodium (Na)	2008/07/20	ND, RDL=100		ug/L	
		. Strontium (Sr)	2008/07/20	ND, RDL=1		ug/L	
		. Thallium (Tl)	2008/07/20	ND, RDL=0.05		ug/L	
		. Titanium (Ti)	2008/07/20	ND, RDL=5		ug/L	
		. Uranium (U)	2008/07/20	ND, RDL=0.1		ug/L	
		. Vanadium (V)	2008/07/20	ND, RDL=1		ug/L	
		. Zinc (Zn)	2008/07/20	ND, RDL=5		ug/L	
	RPD	. Lead (Pb)	2008/07/20	NC		%	25
1562929 CCI	MATRIX SPIKE [Z81984-01]	Nitrite (N)	2008/07/17		101	%	75 - 125
		Nitrate (N)	2008/07/17		97	%	75 - 125

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Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1562929 CCI	Spiked Blank	Nitrite (N)	2008/07/17		102	%	80 - 120
		Nitrate (N)	2008/07/17		96	%	80 - 120
	Method Blank	Nitrite (N)	2008/07/17	ND, RDL=0.01		mg/L	
		Nitrate (N)	2008/07/17	ND, RDL=0.1		mg/L	
	RPD [Z81984-01]	Nitrite (N)	2008/07/17	NC		%	25
		Nitrate (N)	2008/07/17	NC		%	25
1563120 YPA	QC STANDARD	Conductivity	2008/07/17		102	%	85 - 115
	Method Blank	Conductivity	2008/07/17	ND, RDL=2		umho/cm	
	RPD	Conductivity	2008/07/17	0.5		%	25
1563121 YPA	QC STANDARD	Alkalinity (Total as CaCO3)	2008/07/17		101	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2008/07/17	ND, RDL=1		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2008/07/17	0.3		%	25
1563137 YPA	QC STANDARD	Alkalinity (Total as CaCO3)	2008/07/17		101	%	85 - 115
	Method Blank	Alkalinity (Total as CaCO3)	2008/07/17	ND, RDL=1		mg/L	
	RPD	Alkalinity (Total as CaCO3)	2008/07/18	NC		%	25
1563138 YPA	QC STANDARD	Conductivity	2008/07/17		99	%	85 - 115
	Method Blank	Conductivity	2008/07/17	ND, RDL=2		umho/cm	
	RPD	Conductivity	2008/07/18	NC		%	25
1563380 JOH	MATRIX SPIKE	Dissolved Calcium (Ca)	2008/07/18		NC (2)	%	85 - 115
		Dissolved Magnesium (Mg)	2008/07/18		93	%	85 - 115
		Dissolved Potassium (K)	2008/07/18		95	%	85 - 115
		Dissolved Sodium (Na)	2008/07/18		NC (2)	%	85 - 115
	Spiked Blank	Dissolved Calcium (Ca)	2008/07/18		98	%	85 - 115
		Dissolved Magnesium (Mg)	2008/07/18		96	%	85 - 115
		Dissolved Potassium (K)	2008/07/18		95	%	85 - 115
		Dissolved Sodium (Na)	2008/07/18		99	%	85 - 115
	Method Blank	Dissolved Calcium (Ca)	2008/07/18	ND, RDL=0.05		mg/L	
		Dissolved Magnesium (Mg)	2008/07/18	ND, RDL=0.05		mg/L	
		Dissolved Potassium (K)	2008/07/18	ND, RDL=1		mg/L	
		Dissolved Sodium (Na)	2008/07/18	ND, RDL=0.5		mg/L	
	RPD	Dissolved Calcium (Ca)	2008/07/18	0.2		%	25
		Dissolved Magnesium (Mg)	2008/07/18	0.3		%	25
		Dissolved Potassium (K)	2008/07/18	NC		%	25
		Dissolved Sodium (Na)	2008/07/18	0.03		%	25
1563387 SAC	MATRIX SPIKE	Total Organic Carbon (TOC)	2017/07/20		NC	%	75 - 125
	Spiked Blank	Total Organic Carbon (TOC)	2017/07/20		112	%	75 - 125
	Method Blank	Total Organic Carbon (TOC)	2017/07/20	ND, RDL=0.1		mg/L	
	RPD	Total Organic Carbon (TOC)	2017/07/20	0.4		%	20
1563392 LS	MATRIX SPIKE	Total Ammonia-N	2008/07/18		99	%	80 - 120
	Spiked Blank	Total Ammonia-N	2008/07/18		101	%	80 - 120
	Method Blank	Total Ammonia-N	2008/07/18	ND, RDL=0.05		mg/L	
	RPD	Total Ammonia-N	2008/07/18	NC		%	25
1563394 LS	MATRIX SPIKE	Total Ammonia-N	2008/07/17		NC (2)	%	80 - 120
	Spiked Blank	Total Ammonia-N	2008/07/17		101	%	80 - 120
	Method Blank	Total Ammonia-N	2008/07/17	ND, RDL=0.05		mg/L	
	RPD	Total Ammonia-N	2008/07/17	0.4		%	25
1563425 CCI	MATRIX SPIKE	Nitrite (N)	2008/07/18		100	%	75 - 125
		Nitrate (N)	2008/07/18		95	%	75 - 125
	Spiked Blank	Nitrite (N)	2008/07/18		100	%	80 - 120
		Nitrate (N)	2008/07/18		95	%	80 - 120
	Method Blank	Nitrite (N)	2008/07/18	ND, RDL=0.01		mg/L	
		Nitrate (N)	2008/07/18	ND, RDL=0.1		mg/L	
	RPD	Nitrate (N)	2008/07/18	NC		%	25
1563553 DRM	MATRIX SPIKE	Orthophosphate (P)	2008/07/18		100	%	75 - 125
	Spiked Blank	Orthophosphate (P)	2008/07/18		101	%	80 - 120

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Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1563553 DRM	Method Blank	Orthophosphate (P)	2008/07/18	ND, RDL=0.01		mg/L	
	RPD	Orthophosphate (P)	2008/07/18	NC		%	25
1563576 SBU	MATRIX SPIKE	Dissolved Chloride (Cl)	2008/07/18		98	%	75 - 125
	Spiked Blank	Dissolved Chloride (Cl)	2008/07/18		96	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2008/07/18	ND, RDL=1		mg/L	
	RPD	Dissolved Chloride (Cl)	2008/07/18	NC		%	20
1563579 DRM	MATRIX SPIKE	Dissolved Sulphate (SO4)	2008/07/18		NC (2)	%	75 - 125
	Spiked Blank	Dissolved Sulphate (SO4)	2008/07/18		101	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2008/07/18	ND, RDL=1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2008/07/18	1.0		%	25
1563641 C_N	MATRIX SPIKE	Total Phosphorus	2008/07/18		101	%	75 - 125
	QC STANDARD	Total Phosphorus	2008/07/18		96	%	85 - 115
	Spiked Blank	Total Phosphorus	2008/07/18		105	%	75 - 125
	Method Blank	Total Phosphorus	2008/07/18	0.002, RDL=0.002		mg/L	
	RPD	Total Phosphorus	2008/07/18	NC		%	25
1563702 CCI	MATRIX SPIKE	Nitrite (N)	2008/07/18		98	%	75 - 125
		Nitrate (N)	2008/07/18		88	%	75 - 125
	Spiked Blank	Nitrite (N)	2008/07/18		99	%	80 - 120
		Nitrate (N)	2008/07/18		97	%	80 - 120
	Method Blank	Nitrite (N)	2008/07/18	ND, RDL=0.01		mg/L	
		Nitrate (N)	2008/07/18	ND, RDL=0.1		mg/L	
	RPD	Nitrite (N)	2008/07/18	NC		%	25
		Nitrate (N)	2008/07/18	0.7		%	25
1563760 SBU	MATRIX SPIKE	Total Kjeldahl Nitrogen (TKN)	2008/07/18		NC (2)	%	80 - 120
	QC STANDARD	Total Kjeldahl Nitrogen (TKN)	2008/07/18		93	%	85 - 115
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2008/07/18		94	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2008/07/18	0.1, RDL=0.1		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2008/07/18	2.0		%	20
1563770 SBU	MATRIX SPIKE	Total Kjeldahl Nitrogen (TKN)	2008/07/18		87	%	80 - 120
	QC STANDARD	Total Kjeldahl Nitrogen (TKN)	2008/07/18		90	%	85 - 115
	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2008/07/18		94	%	80 - 120
	Method Blank	Total Kjeldahl Nitrogen (TKN)	2008/07/18	ND, RDL=0.1		mg/L	
	RPD	Total Kjeldahl Nitrogen (TKN)	2008/07/18	NC		%	20
1563995 JBW	MATRIX SPIKE	. Aluminum (Al)	2008/07/21		106	%	80 - 120
		. Antimony (Sb)	2008/07/21		108	%	80 - 120
		. Arsenic (As)	2008/07/21		106	%	80 - 120
		. Barium (Ba)	2008/07/21		105	%	80 - 120
		. Beryllium (Be)	2008/07/21		111	%	80 - 120
		. Boron (B)	2008/07/21		109	%	80 - 120
		. Cadmium (Cd)	2008/07/21		108	%	80 - 120
		. Calcium (Ca)	2008/07/21		NC (2)	%	80 - 120
		. Chromium (Cr)	2008/07/21		105	%	80 - 120
		. Cobalt (Co)	2008/07/21		104	%	80 - 120
		. Copper (Cu)	2008/07/21		103	%	80 - 120
		. Iron (Fe)	2008/07/21		109	%	80 - 120
		. Lead (Pb)	2008/07/21		105	%	80 - 120
		. Magnesium (Mg)	2008/07/21		108	%	80 - 120
		. Manganese (Mn)	2008/07/21		104	%	80 - 120
		. Molybdenum (Mo)	2008/07/21		111	%	80 - 120
		. Nickel (Ni)	2008/07/21		104	%	80 - 120
		. Phosphorus (P)	2008/07/21		115	%	80 - 120
		. Potassium (K)	2008/07/21		110	%	80 - 120
		. Selenium (Se)	2008/07/21		104	%	80 - 120
		. Silicon (Si)	2008/07/21		110	%	80 - 120
		. Silver (Ag)	2008/07/21		104	%	80 - 120

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P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1563995 JBW	MATRIX SPIKE	. Sodium (Na)	2008/07/21		NC (2)	%	80 - 120
		. Strontium (Sr)	2008/07/21		NC (2)	%	80 - 120
		. Thallium (Tl)	2008/07/21		104	%	80 - 120
		. Titanium (Ti)	2008/07/21		110	%	80 - 120
		. Uranium (U)	2008/07/21		108	%	80 - 120
		. Vanadium (V)	2008/07/21		110	%	80 - 120
		. Zinc (Zn)	2008/07/21		105	%	80 - 120
	Spiked Blank	. Aluminum (Al)	2008/07/21		103	%	85 - 115
		. Antimony (Sb)	2008/07/21		103	%	85 - 115
		. Arsenic (As)	2008/07/21		99	%	85 - 115
		. Barium (Ba)	2008/07/21		101	%	85 - 115
		. Beryllium (Be)	2008/07/21		104	%	85 - 115
		. Boron (B)	2008/07/21		104	%	85 - 115
		. Cadmium (Cd)	2008/07/21		105	%	85 - 115
		. Calcium (Ca)	2008/07/21		103	%	85 - 115
		. Chromium (Cr)	2008/07/21		100	%	85 - 115
		. Cobalt (Co)	2008/07/21		100	%	85 - 115
		. Copper (Cu)	2008/07/21		97	%	85 - 115
		. Iron (Fe)	2008/07/21		104	%	85 - 115
		. Lead (Pb)	2008/07/21		102	%	85 - 115
		. Magnesium (Mg)	2008/07/21		106	%	85 - 115
		. Manganese (Mn)	2008/07/21		101	%	85 - 115
		. Molybdenum (Mo)	2008/07/21		103	%	85 115
		. Nickel (Ni)	2008/07/21		100	%	85 - 115
		. Phosphorus (P)	2008/07/21		101	%	85 - 115
		. Potassium (K)	2008/07/21		107	%	85 - 115
		. Selenium (Se)	2008/07/21		99	%	85 - 115
		. Silicon (Si)	2008/07/21		106	%	85 - 115
		. Silver (Ag)	2008/07/21		101	%	85 - 115
		. Sodium (Na)	2008/07/21		105	%	85 - 115
		. Strontium (Sr)	2008/07/21		100	%	85 - 115
		. Thallium (Tl)	2008/07/21		101	%	85 - 115
		. Titanium (Ti)	2008/07/21		105	%	85 - 115
		. Uranium (U)	2008/07/21		102	%	85 - 115
		. Vanadium (V)	2008/07/21		103	%	85 - 115
		. Zinc (Zn)	2008/07/21		100	%	85 - 115
	Method Blank	. Aluminum (Al)	2008/07/21	ND, RDL=5		ug/L	
		. Antimony (Sb)	2008/07/21	ND, RDL=0.5		ug/L	
		. Arsenic (As)	2008/07/21	ND, RDL=1		ug/L	
		. Barium (Ba)	2008/07/21	ND, RDL=5		ug/L	
		. Beryllium (Be)	2008/07/21	ND, RDL=0.5		ug/L	
		. Boron (B)	2008/07/21	ND, RDL=10		ug/L	
		. Cadmium (Cd)	2008/07/21	ND, RDL=0.1		ug/L	
		. Calcium (Ca)	2008/07/21	ND, RDL=200		ug/L	
		. Chromium (Cr)	2008/07/21	ND, RDL=5		ug/L	
		. Cobalt (Co)	2008/07/21	ND, RDL=0.5		ug/L	
		. Copper (Cu)	2008/07/21	ND, RDL=1		ug/L	
		. Iron (Fe)	2008/07/21	ND, RDL=100		ug/L	
		. Lead (Pb)	2008/07/21	ND, RDL=0.5		ug/L	
		. Magnesium (Mg)	2008/07/21	ND, RDL=50		ug/L	
		. Manganese (Mn)	2008/07/21	ND, RDL=2		ug/L	
		. Molybdenum (Mo)	2008/07/21	ND, RDL=1		ug/L	
		. Nickel (Ni)	2008/07/21	ND, RDL=1		ug/L	
		. Phosphorus (P)	2008/07/21	ND, RDL=100		ug/L	
		. Potassium (K)	2008/07/21	ND, RDL=200		ug/L	

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P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1563995 JBW	Method Blank	. Selenium (Se)	2008/07/21	ND, RDL=2		ug/L	
		. Silicon (Si)	2008/07/21	ND, RDL=50		ug/L	
		. Silver (Ag)	2008/07/21	ND, RDL=0.1		ug/L	
		. Sodium (Na)	2008/07/21	ND, RDL=100		ug/L	
		. Strontium (Sr)	2008/07/21	ND, RDL=1		ug/L	
		. Thallium (Tl)	2008/07/21	ND, RDL=0.05		ug/L	
		. Titanium (Ti)	2008/07/21	ND, RDL=5		ug/L	
		. Uranium (U)	2008/07/21	ND, RDL=0.1		ug/L	
		. Vanadium (V)	2008/07/21	ND, RDL=1		ug/L	
		. Zinc (Zn)	2008/07/21	ND, RDL=5		ug/L	
	RPD	. Aluminum (Al)	2008/07/21	NC		%	25
		. Antimony (Sb)	2008/07/21	NC		%	25
		. Arsenic (As)	2008/07/21	NC		%	25
		. Barium (Ba)	2008/07/21	0.1		%	25
		. Beryllium (Be)	2008/07/21	NC		%	25
		. Boron (B)	2008/07/21	0.05		%	25
		. Cadmium (Cd)	2008/07/21	NC		%	25
		. Calcium (Ca)	2008/07/21	1.4		%	25
		. Chromium (Cr)	2008/07/21	NC		%	25
		. Cobalt (Co)	2008/07/21	NC		%	25
		. Copper (Cu)	2008/07/21	7.3		%	25
		. Iron (Fe)	2008/07/21	0.6		%	25
		. Lead (Pb)	2008/07/21	0.5		%	25
		. Magnesium (Mg)	2008/07/21	0.8		%	25
		. Manganese (Mn)	2008/07/21	0.2		%	25
		. Molybdenum (Mo)	2008/07/21	NC		%	25
		. Nickel (Ni)	2008/07/21	NC		%	25
		. Phosphorus (P)	2008/07/21	NC		%	25
		. Potassium (K)	2008/07/21	2.7		%	25
		. Selenium (Se)	2008/07/21	NC		%	25
		. Silicon (Si)	2008/07/21	1.1		%	25
		. Silver (Ag)	2008/07/21	NC		%	25
		. Sodium (Na)	2008/07/21	0.1		%	25
		. Strontium (Sr)	2008/07/21	0.3		%	25
		. Thallium (Tl)	2008/07/21	NC		%	25
		. Titanium (Ti)	2008/07/21	NC		%	25
		. Uranium (U)	2008/07/21	NC		%	25
		. Vanadium (V)	2008/07/21	NC		%	25
		. Zinc (Zn)	2008/07/21	0.07		%	25
1564153 MIL	MATRIX SPIKE	Total Aluminum (Al)	2008/07/17		99	%	80 - 120
		Total Antimony (Sb)	2008/07/17		109	%	80 - 120
		Total Arsenic (As)	2008/07/17		98	%	80 - 120
		Total Barium (Ba)	2008/07/17		102	%	80 - 120
		Total Beryllium (Be)	2008/07/17		102	%	75 - 125
		Total Boron (B)	2008/07/17		104	%	75 - 125
		Total Cadmium (Cd)	2008/07/17		105	%	80 - 120
		Total Calcium (Ca)	2008/07/17		NC (2)	%	75 - 125
		Total Chromium (Cr)	2008/07/17		100	%	80 - 120
		Total Cobalt (Co)	2008/07/17		100	%	80 - 120
		Total Copper (Cu)	2008/07/17		NC (2)	%	80 - 120
		Total Iron (Fe)	2008/07/17		98	%	80 - 120
		Total Lead (Pb)	2008/07/17		102	%	80 - 120
		Total Magnesium (Mg)	2008/07/17		NC (2)	%	80 - 120
		Total Manganese (Mn)	2008/07/17		102	%	80 - 120
		Total Molybdenum (Mo)	2008/07/17		108	%	80 - 120

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Client Project #: HYATT DEVELOPMENTS
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Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1564153 MIL	MATRIX SPIKE	Total Nickel (Ni)	2008/07/17		99	%	80 - 120
		Total Potassium (K)	2008/07/17		98	%	75 - 125
		Total Selenium (Se)	2008/07/17		103	%	75 - 125
		Total Silicon (Si)	2008/07/17		103	%	75 - 125
		Total Silver (Ag)	2008/07/17		102	%	80 - 120
		Total Sodium (Na)	2008/07/17		96	%	75 - 125
		Total Thallium (Tl)	2008/07/17		103	%	80 - 120
		Total Tungsten (W)	2008/07/17		107	%	75 - 125
		Total Uranium (U)	2008/07/17		102	%	80 - 120
		Total Vanadium (V)	2008/07/17		104	%	80 - 120
		Total Zinc (Zn)	2008/07/17		102	%	80 - 120
		Total Zirconium (Zr)	2008/07/17		114	%	75 - 125
	Spiked Blank	Total Aluminum (Al)	2008/07/17		104	%	80 - 120
		Total Antimony (Sb)	2008/07/17		108	%	82 - 120
		Total Arsenic (As)	2008/07/17		99	%	86 - 119
		Total Barium (Ba)	2008/07/17		103	%	83 - 115
		Total Beryllium (Be)	2008/07/17		102	%	85 - 132
		Total Boron (B)	2008/07/17		104	%	78 - 133
		Total Cadmium (Cd)	2008/07/17		106	%	85 - 116
		Total Calcium (Ca)	2008/07/17		100	%	75 - 125
		Total Chromium (Cr)	2008/07/17		104	%	80 - 120
		Total Cobalt (Co)	2008/07/17		103	%	82 - 117
		Total Copper (Cu)	2008/07/17		104	%	80 - 117
		Total Iron (Fe)	2008/07/17		100	%	80 - 120
		Total Lead (Pb)	2008/07/17		102	%	80 - 120
		Total Magnesium (Mg)	2008/07/17		101	%	80 - 120
		Total Manganese (Mn)	2008/07/17		104	%	80 - 120
		Total Molybdenum (Mo)	2008/07/17		108	%	82 - 117
		Total Nickel (Ni)	2008/07/17		105	%	81 - 117
		Total Potassium (K)	2008/07/17		99	%	75 - 125
		Total Selenium (Se)	2008/07/17		106	%	82 - 118
		Total Silicon (Si)	2008/07/17		102	%	67 - 140
		Total Silver (Ag)	2008/07/17		104	%	80 - 120
		Total Sodium (Na)	2008/07/17		99	%	75 - 125
		Total Thallium (Tl)	2008/07/17		103	%	80 - 129
		Total Tungsten (W)	2008/07/17		105	%	81 - 123
		Total Uranium (U)	2008/07/17		100	%	82 - 120
		Total Vanadium (V)	2008/07/17		106	%	82 - 118
		Total Zinc (Zn)	2008/07/17		105	%	80 - 120
		Total Zirconium (Zr)	2008/07/17		113	%	84 - 118
	Method Blank	Total Aluminum (Al)	2008/07/17	ND, RDL=5		ug/L	
		Total Antimony (Sb)	2008/07/17	ND, RDL=0.5		ug/L	
		Total Arsenic (As)	2008/07/17	ND, RDL=1		ug/L	
		Total Barium (Ba)	2008/07/17	ND, RDL=5		ug/L	
		Total Beryllium (Be)	2008/07/17	ND, RDL=0.5		ug/L	
		Total Boron (B)	2008/07/17	ND, RDL=10		ug/L	
		Total Cadmium (Cd)	2008/07/17	ND, RDL=0.1		ug/L	
		Total Calcium (Ca)	2008/07/17	ND, RDL=200		ug/L	
		Total Chromium (Cr)	2008/07/17	ND, RDL=5		ug/L	
		Total Cobalt (Co)	2008/07/17	ND, RDL=0.5		ug/L	
		Total Copper (Cu)	2008/07/17	ND, RDL=1		ug/L	
		Total Iron (Fe)	2008/07/17	ND, RDL=100		ug/L	
		Total Lead (Pb)	2008/07/17	ND, RDL=0.5		ug/L	
		Total Magnesium (Mg)	2008/07/17	ND, RDL=50		ug/L	
		Total Manganese (Mn)	2008/07/17	ND, RDL=2		ug/L	

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NORBERT M WOERNS
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Client Project #: HYATT DEVELOPMENTS
P.O. #:
Project name: UXBRIDGE, ONTARIO

Quality Assurance Report (Continued)

Maxxam Job Number: MA875011

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1564153	MIL	Method Blank	Total Molybdenum (Mo)	2008/07/17	ND, RDL=1		ug/L	
			Total Nickel (Ni)	2008/07/17	ND, RDL=1		ug/L	
			Total Potassium (K)	2008/07/17	ND, RDL=200		ug/L	
			Total Selenium (Se)	2008/07/17	ND, RDL=2		ug/L	
			Total Silicon (Si)	2008/07/17	ND, RDL=50		ug/L	
			Total Silver (Ag)	2008/07/17	ND, RDL=0.1		ug/L	
			Total Sodium (Na)	2008/07/17	ND, RDL=100		ug/L	
			Total Thallium (Tl)	2008/07/17	ND, RDL=0.05		ug/L	
			Total Tungsten (W)	2008/07/17	ND, RDL=1		ug/L	
			Total Uranium (U)	2008/07/17	ND, RDL=0.1		ug/L	
			Total Vanadium (V)	2008/07/17	ND, RDL=1		ug/L	
			Total Zinc (Zn)	2008/07/17	ND, RDL=5		ug/L	
			Total Zirconium (Zr)	2008/07/17	ND, RDL=1		ug/L	
		RPD	Total Aluminum (Al)	2008/07/17	NC		%	25
			Total Iron (Fe)	2008/07/17	NC		%	25
			Total Lead (Pb)	2008/07/17	NC		%	25
			Total Magnesium (Mg)	2008/07/17	0.2		%	25
			Total Manganese (Mn)	2008/07/17	NC		%	25
			Total Sodium (Na)	2008/07/17	0.08		%	25
1564680	KTH	Spiked Blank	Colour	2008/07/18		101	%	75 - 125
		Method Blank	Colour	2008/07/18	ND, RDL=2		TCU	
		RPD	Colour	2008/07/18	NC		%	25

ND = Not detected
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample
(1) The recovery was above the upper control limit. This may represent a high bias in some results for flagged analytes. For results that were not detected (ND), this potential bias has no impact.
(2) The recovery in the matrix spike was not calculated (NC). Because of the high concentration of this analyte in the parent sample, the relative difference between the spiked and unspiked concentrations is not sufficiently significant to permit a reliable recovery calculation.

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Validation Signature Page

Maxxam Job #: A875011

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Christina Nervo

CHRISTINA NERVO, Scientific Services

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

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APPENDIX 5

CLIMATIC WATER BALANCE

Climatic Water Balance -Uxbridge Ontario (1954 to 1975)
Soil Moisture 100mm/yr

Date	Temperature ºC	Precipitation (mm)	Potential Evapotranspiration (mm)	Actual Evapotranspiration (mm)	Deficit (mm)	Surplus (mm)
January	-8.3	48	1	1	0	26
February	-7.6	54	1	1	0	31
March	-2.5	49	5	5	0	71
April	5.5	65	31	31	0	70
May	12	71	74	74	0	12
June	17.5	71	111	109	-2	5
July	19.8	77	128	101	-28	1
August	19	86	114	88	-26	1
September	14.9	60	76	57	-20	1
October	9.2	65	42	36	-6	6
November	2.4	71	13	13	0	16
December	-5.3	66	2	2	0	25
Total	**6.4***	**783**	**598**	**518**	**-82**	**265**

Note: Soil Moisture typical for sandy silt to silty sand loam with shallow rooted plants
Data from Meterological Service of Canada, 2008
Numbers rounded off
** Average Annual Temperature*

Climatic Water Balance - Uxbridge (1954 to 1975)
Soil Moisture 200 mm/yr

Date	Temperature (º C)	Precipitation (mm)	Potential Evapotranspiration (mm)	Actual Evapotranspiration (mm)	Deficit (mm)	Surplus (mm)
January	-8.3	48	1	1	0	18
February	-7.6	54	1	1	0	22
March	-2.5	49	5	5	0	62
April	5.5	65	31	31	0	66
May	12	71	74	74	0	12
June	17.5	71	111	111	0	5
July	19.8	77	128	125	-3	1
August	19	86	114	102	-12	1
September	14.9	60	76	66	-11	1
October	9.2	65	42	39	-3	5
November	2.4	71	13	13	0	6
December	-5.3	66	2	2	0	14
Total	**6.4***	**783**	**598**	**570**	**-29**	**213**

Note: Soil Moisture typical for sandy silt to silty sand loam with medium depth rooted plants

Data from Meterological Service of Canada, 2008

Numbers rounded off

* Average Annual temperature

Climatic Water Balance - Uxbridge, Ontario (1954-1975)
Soil Moisture 350 mm/yr

Date	Temperature (º C)	Precipitation (mm)	Potential Evapotranspiration (mm)	Actual Evapotranspiration (mm)	Deficit (mm)	Surplus (mm)
January	-8.3	48	1	1	0	11
February	-7.6	54	1	1	0	19
March	-2.5	49	5	5	0	54
April	5.5	65	31	31	0	64
May	12	71	74	74	0	12
June	17.5	71	111	111	0	5
July	19.8	77	128	128	0	1
August	19	86	114	112	-2	1
September	14.9	60	76	73	-3	1
October	9.2	65	42	41	-1	5
November	2.4	71	13	13	0	6
December	-5.3	66	2	2	0	12
Total	**6.4***	**783**	**598**	**592**	**-6**	**191**

Note: Soil Moisiure typical for sandy silt to silty sand loam with deep rooted plants - trees
Data from Meterological Service of Canada, 2008
Numbers rounded off
* Average Annual temperature

APPENDIX 6

ONTARIO BUILDING CODE
SUPPLEMENTARY GUIDE SG-6

SG-6 Percolation Time and Soil Descriptions

ESTIMATION OF PERCOLATION TIME (Referenced in Article 8.2.1.2.)

(a) The purpose of this Section and the associated Tables and Charts is to provide assistance to those who must decide on the percolation time(s) to be used in design. Suggested relationships between percolation time, coefficient of permeability and soils of various types are given. IT MUST BE EMPHASIZED THAT, PARTICULARLY FOR FINE GRAINED SOILS, THERE IS NO CONSISTENT RELATIONSHIP DUE TO THE MANY FACTORS INVOLVED. The following guidance is presented for the soil types outlined in the Unified Soil Classification System (Table 1). In order to assess a particular soil.
(i) Table 2 and Table 3 - Approximate relationship of soil types to permeability and percolation time.
(ii) Charts 1 to 14 - Typical grain size distribution curves for soil types in the Unified Soil Classification System.

(b) In Table 2 and Table 3, a range of values of "K" and of "T" are given for various soil descriptions. The principal modifiers which will influence selection of a "T" value within the range given are:
(i) The structure - "massive" fine-grained soils have high values of "T".
(ii) The density - For a given soil higher density produces a higher value of "T".
(iii) The percentage of clay - the higher the percentage the higher the value of "T".
(iv) The mineralogy of the clay portion - The more it "swells" the higher the value of "T".
(v) The plasticity of the soil - The higher the plasticity index the higher the value of "T".
(vi) Liquid Limit - the higher the liquid limit the higher the value of "T".
(vii) Organic content - The presence of fine organic particles, detectable by colouration and odour, can significantly reduce the permeability and raise the value of "T".

TABLE 1
Unified Soil Classification

Coarse - Grained Soils		Fine - Grained Soils	
Group Symbols	Typical Names	Group Symbols	Typical Names
GW	Well-graded gravels, gravel-sand mixtures, little or no fines	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
GM	Silty gravels, gravel-sand-silt mixtures	OL	Organic silts and organic silty clays of low plasticity
GC	Clayey gravels, gravel-sand-clay mixtures	MH	Inorganic silts, micoceous or diatomaceous fine sandy or silty soils, elastic silts
SW	Well-graded sands, gravelly sands, little or no fines	CH	Inorganic clays of high plasticity, fat clays
SP	Poorly-graded sands, gravelly sands, little or no fines	OH	Organic clays of medium to high plasticity, organic silts
SM	Silty sands, sand-silt mixtures		
SC	Clayey sands, sand-clay mixtures	PT (highly organic soils)	Peat and other highly organic soils

TABLE 2
APPROXIMATE RELATIONSHIP OF SOIL TYPES
TO PERMEABILITY AND PERCOLATION TIME

SOIL TYPE (unified soil classification)	Coefficient of Permeability K - cm/sec.	Percolation Time- T mins/cm.	Comment
COARSE GRAINED - MORE THAN 50% LARGER THAN #200			
G.W. - Well graded gravels, gravel-sand mixtures, little or fines.	10^{-1}	< 1	very permeable unacceptable
G.P. - Poorly graded gravels, gravel-sand mixtures, little or no fines.	10^{-1}	< 1	very permeable unacceptable
G.M. - Silty gravels, gravel sand-silt mixtures.	10^{-2} - 10^{-4}	4 - 12	Permeable to medium permeable depending on amount of silt.
G.C. - Clayey gravels, gravel-sand-clay mixtures.	10^{-4} - 10^{-6}	12 - 50	Important to estimate amount of silt and clay
S.W. - Well graded sands, gravelly sands little or no fines.	10^{-1} - 10^{-4}	2 - 12	medium permeability
S.P. - Poorly graded sands gravelly sand, little or no fines.	10^{-1} - 10^{-3}	2 - 8	medium permeability
S.M. - Silty sands, sand-silt mixtures.	10^{-3} - 10^{-5}	8 - 20	medium to low permeability
S.C. - Clayey sands, sand-clay mixtures.	10^{-4} - 10^{-6}	12 - 50	medium to low permeability (depends on amount of clay

TABLE 3
APPROXIMATE RELATIONSHIP OF SOIL TYPES TO PERMEABILITY AND PERCOLATION TIME

SOIL TYPE (unified soil classification)	Coefficient of Permeability K - cm/sec.	Percolation Time- T mins/cm.	Comment
FINE GRAINED - MORE THAN 50% PASSING #200			
M.L. - Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, clayey silts with slight plasticity	10^{-5} - 10^{-6}	20 - 50	medium to low permeability
C.L. - Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	10^{-6} and less	over 50	unacceptable
O.L. - Organic silts, organic silty clays of low plasticity; liquid limit less than 50	10^{-5} and less	20 - over 50	acceptable depends on clay content.
M.H. - Inorganic silts, micareaous or diatomageous fine sandy or silty soils, elastic silts	10^{-6} and less	over 50	unacceptable
C.H. - Inorganic clays of medium to high plasticity, organic silts	10^{-7} and less	over 50	unacceptable
O.H. - Organic clays of medium to high plasticity-organic silt; liquid limit over 50	10^{-6} and less	over 50	unacceptable

SELECTION OF "T" TIME FROM THE ABOVE TABULATION

A range of "T" times for each soil type is shown above. Select from within this range by determining if the soil is within the low, middle or high part of the range considering the soil identifiers and soil characteristics. Consider structure, density, colour, prevalence or organics, the clay content and minerology, the plasticity index and liquid limit and the functioning of existing systems in similar soils in the area.

Note: The following Ministry of the Environment Reports provide further information on the relationship between grain size, coefficient or permeability and percolative time.

- "Study on the Feasibility of Correlating Percolation Time with Laboratory Permeability" - 1975 - Research Report No. S56 by H. T. Chan, PhD., P.Eng.
- "Study of Conventional Tile Fields in Fine-Grained Soils" - 1979 Research Report 74 by H. T. Chan, PhD., P.Eng.

APPENDIX 7

WATER BALANCE ANALYSIS

Hyatt Cemetery Road Water Balance Analysis

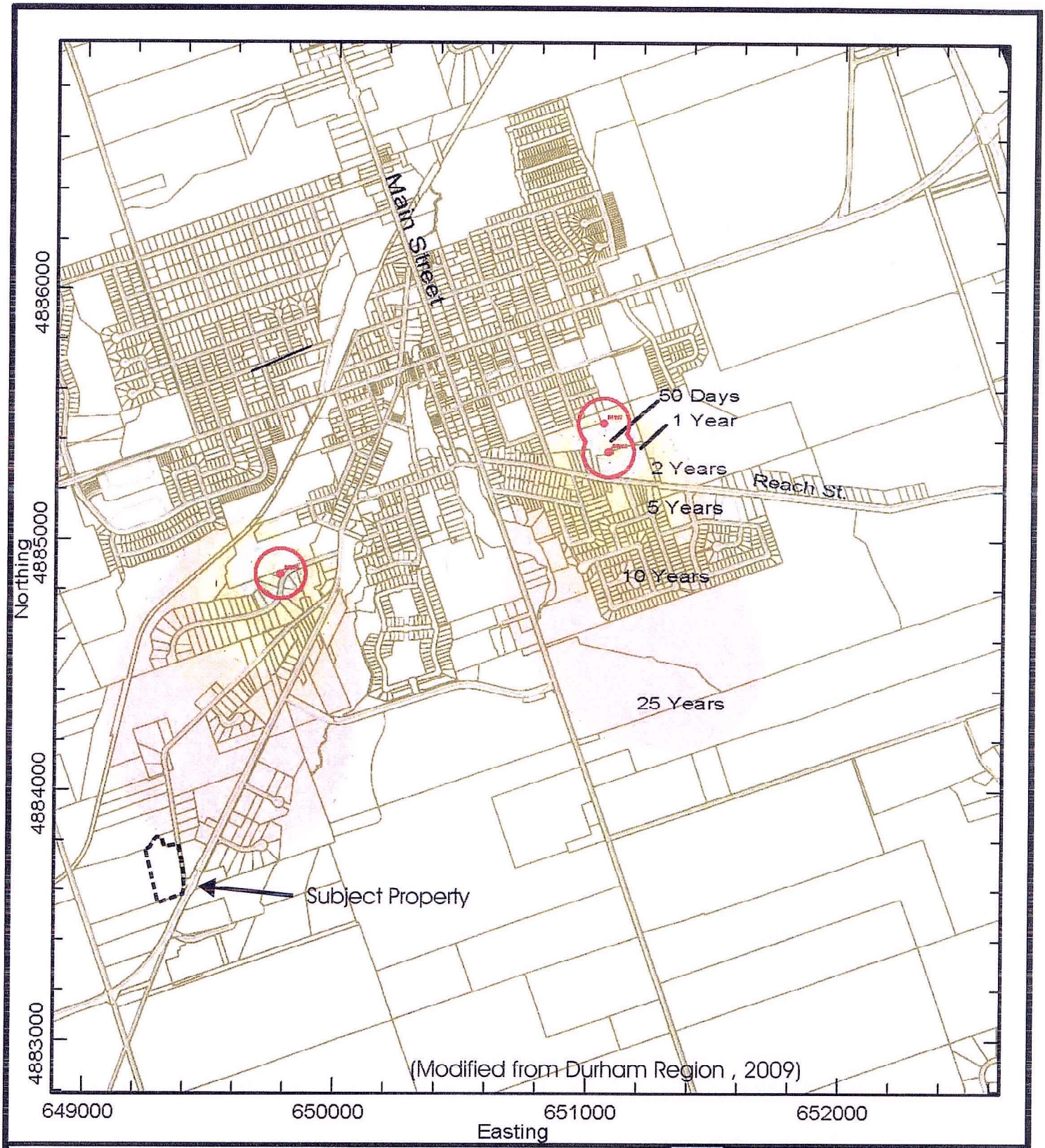
Hyatt Cemetery Road Water Balance		(Scenario 1 - Roof Runoff to Storm Sewers - Infiltration Factors 0.5 to 0.65)										
		Shallow rooted plants		Medium rooted plants		Deep rooted plants-trees		Pond	Impervious Area			
				(not applicable)					Roof	Roads & Flat Roofs		
Climate Data from Uxbridge			(mm)		(mm)		(mm)	(mm)	(mm)	(mm)		
(1954 to 1975)		Soil Moisture	100	Soil Moisture	200	Soil Moisture	350	N/A	NA	NA		
Evaporation Data from Bowmanville		Total Precip.	783	Total Precip.	783	Total Precip.	783	783	783	783		
		Evapotrans.	518	Evapotrans.	570	Evapotrans.	592	746	78.3	117.45		
		Surplus	265	Surplus	213	Surplus	191	37				
		Pot Evapotr	598	Pot Evapotr	598	Pot Evapotr	598					
		Post-development		Pre/Post-development		Pre/post-development						
		Infiltrn factor	0.5	Infiltrn Factor	0.65	Infiltrn factor	0.7	0.0	0	0		
		Runoff factor	0.5	Runoff factor	0.35	Runoff factor	0.7	1.0	0.9	0.85		
			(lawns)		(shrub meadow)		(forest)					
Pre-development Water Balance												
Areas	**Total**	**Pervious**	**Pervious**	**Impervious**	**Impervious**	**Perv. Infil.**	**Perv. R/O**	**Perv. ET**	**Imperv Infil**	**Imper R/O**	**Imperv ET**	**Total**
	(m^2)	**%**	**Area (m2)**	**%**	**Area (m2)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**
Open Space (meadow)	21,144	100	21,144.00		0.00	2,927.39	1,576.29	12,052.08	0.00	0.00	0.00	16,555.75
Open Space (wetland)	2,700			100.00	2,700.00				0.00	499.50	1,614.60	2,114.10
Exisitng Buildings	1,056			100.00	1,056.00					744.16	82.68	826.85
Total	**24,900**		**21,144.00**			**2,927.39**	**1,576.29**	**12,052.08**		**1,243.66**	**1,697.28**	**19,496.70**
Volume check(area X precip)												19,496.70
Percent Error												0.00
Post-development Water Balance												
Scenario 1- Runoff to Storm Sewers												
1) Open Space												
a) Landscaped north+east	4,800	100.00	4,800.00	0.00	0.00	636.00	636.00	2,486.40	0.00	0.00	0.00	3,758.40
b) Landscaped south+patio	100	100.00	100.00			13.25	13.25	51.80	0.00	0.00	0.00	78.30
b) Open Space (buffers/meadow)	4,300	100.00	4,300.00	100.00	0.00	595.34	320.57	2,451.00	0.00	0.00	0.00	3,363.90
c) Wetland	2,700	0.00		100.00	2,700.00	0.00	499.50	1,614.60				2,114.10
2) Building roof area	5,400	0.00		100.00	5,400.00	0.00	0.00	0.00	0.00	3,805.38	422.82	4,228.20
3) Paved surfaces	7,600	0.00		100.00	7,600.00	0.00	0.00	0.00	0.00	5,355.72	595.08	5,950.80
						0.00	0.00	0.00				
Column Check												
												19,496.70
Total	**24,900**		**9,200.00**		**15,700.00**	**1,244.59**	**1,469.32**	**6,603.80**	**0.00**	**9,161.10**	**1,017.90**	**19,496.70**
Volume Check (area X precip.)												**19,496.70**
Percent Error												**0.00**
Volume Difference (m3/yr)												**0.00**
% Change Pre to Post-dev						**Pre-dev**	**Post-dev**	**%Change**	**(m3/yr)**	**(L/sec)**	**% of total precip**	**% of total precip**
						(m3/yr)					**pre-development**	**post-development**
Infiltration						2,927.39	1,244.59	**-57.48**	**-1,682.80**	-0.05	**15.01**	**6.38**
Evapotransporation						13,749.36	7,621.70	**-44.57**	-6,127.66		70.52	39.09
Runoff						2,819.95	10,630.42	**276.97**	7,810.47		14.46	54.52
Total						19,496.70	19,496.70				100.00	100.00

Hyatt Cemetery Road Water Balance Analysis

Hyatt Cemetery Road Water Balance		(Scenario 2 - Roof Runoff to Pervious Surfaces - Infiltration Factors 0.5 to 0.65)											
		Shallow rooted plants		Medium rooted plants		Deep rooted plants-trees		Pond	Impervious Area				
Climate Data from Uxbridge			(mm)	(not applicable)					Roof	Roads & Flat Roofs			
(1954 to 1975)					(mm)		(mm)	(mm)	(mm)	(mm)			
Evaporation Data from Bowmanville		Soil Moisture	100	Soil Moisture	200	Soil Moisture	350	N/A	NA	NA			
		Total Precip.	783	Total Precip.	783	Total Precip.	783	783	783	783			
		Evapotrans.	518	Evapotrans.	570	Evapotrans.	592	746	78.3	117.45			
		Surplus	265	Surplus	213	Surplus	191	37					
		Pot Evapotr	598	Pot Evapotr	598	Pot Evapotr	598						
		Post-development		Pre/Post-development		Pre/post-development							
		Infiltm factor	0.5	Infiltm Factor	0.65	Infiltm factor	0.7	0.0	0	0			
		Runoff factor	0.5	Runoff factor	0.35	Runoff factor	0.7	1.0	0.9	0.85			
			(lawns)		(shrub meadow)		(forest)						
Pre-development Water Balance													
Areas	**Total**	**Pervious**	**Pervious**	**Impervious**	**Impervious**	**Perv. Infil.**	**Perv. R/O**	**Perv. ET**	**Imperv Infil**	**Imper R/O**	**Imperv ET**	**Total**	
	(m^2)	**%**	**Area (m2)**	**%**	**Area (m2)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	**(m3)**	
Open Space (meadow)	21,144	100	21,144.00		0.00	2,927.39	1,576.29	12,052.08	0.00	0.00	0.00	16,555.75	
Open Space (wetland)	2,700			100.00	2,700.00				0.00	499.50	1,614.60	2,114.10	
Exisitng Buildings	1,056			100.00	1,056.00					744.16	82.68	826.85	
Total	**24,900**		**21,144.00**			**2,927.39**	**1,576.29**	**12,052.08**		**1,243.66**	**1,697.28**	**19,496.70**	
Volume check(area X precip)												19,496.70	
Percent Error												0.00	
Post-development Water Balance													
Scenario 1- Runoff to Storm Sewers													
1) Open Space													
a) Landscaped north	4,000	100.00	4,000.00	0.00	0.00	530.00	530.00	2,072.00	0.00	0.00	0.00	3,132.00	
b) Landscaped east	600	100.00	800.00	0.00	0.00	346.09	346.09	441.60				1,133.78	
c) North Buffer	2,700	100.00	2,700.00	0.00	0.00	2,006.25	1,080.29	1,614.60				4,701.14	
d) Landscaped south	100	100.00	100.00	0.00	0.00	13.25	13.25	51.80				78.30	
e) South buffer	1,600	100.00	1,600.00	0.00	0.00	532.75	285.87	856.00				1,675.62	
c) Wetland	2,700	0.00	0.00	0.00	2,700.00	0.00	499.50	1,614.60				2,114.10	
2) Building roof area	4,800												
a) north roof area to paved surface		0.00	0.00	100.00	1,920.00	0.00	0.00	0.00		1,353.02	150.34	1,503.36	
b)north roof area to east landscaped area		0.00	0.00	100.00	720.00	0.00	0.00	0.00			56.38	56.38	
c) north roof to north buffer		0.00	0.00	100.00	2,160.00						169.13	169.13	
b) south area	600	0.00	0.00	100.00	600.00	0.00	0.00	0.00	0.00		46.98	46.98	
3) Paved surfaces													
a) north area	5,400	0.00	0.00	100.00	5,400.00	0.00	0.00	0.00	0.00	3,593.97	634.23	4,223.20	
b) south area	600	0.00	0.00	100.00	600.00	0.00	0.00	0.00	0.00	399.33	70.47	469.80	
c) patio	1,600	0.00	0.00	100.00	1,600.00	0.00	0.00	0.00	0.00		187.92	187.92	
Column Check													
												19,308.78	
Total	**24,900**		**9,200.00**		**15,700.00**	**3,428.34**	**2,756.00**	**6,650.60**	**0.00**	**5,346.32**	**1,315.44**	**19,496.70**	
Volume Check (area X precip.)												19,496.70	
Percent Error												0.00	
Volume Difference (m3/yr)												0.00	
% Change Pre to Post-dev						**Pre-dev**	**Post-dev**	**%Change**	**(m3/yr)**	**(L/sec)**	**% of total precip**	**% of total precip**	
						(m3/yr)					**pre-development**	**post-development**	
Infiltration						2,927.39	3,428.34	**17.11**	500.95	0.02	**15.01**	**17.58**	
Evapotransporation						13,749.36	7,966.04	**-42.06**	-5,783.32		70.52	40.86	
Runoff						2,819.95	8,102.32	**187.32**	5,282.38		14.46	41.56	
Total						19,496.70	19,496.70				100.00	100.00	

APPENDIX 8

UXBRIDGE WELLHEAD PROTECTION AREA MAP



LEGEND

Municipal Supply Wells
100 meter Buffer

ORTHOPHOTOGRAPHY, 2005 provided by the Regional Municipality of Durham

DATA SOURCES: Ministry of Environment (C) Queens Printer for Ontario Projection: UTM NAD 83 Zone 17

GENERAL: This map has been produced from a variety of sources. The Region of Durham does not make any representations concerning the accuracy, likely results, or reliability of the use of the materials. The Region hereby disclaims all representations and warranties.

The Regional Municipality of Durham

Uxbridge Wellhead Protection Area Map

Scale 1: 20000 metres

0 400 800

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26/01/2009 | Figure 1