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# Preliminary Hydrogeological Study

## River's Edge Subdivision Town of Grand Valley

**GMBP File: 104104**

**November 24, 2023**

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## PRELIMINARY HYDROGEOLOGICAL STUDY

### RIVER'S EDGE SUBDIVISION TOWN OF GRAND VALLEY

NOVEMBER 24, 2023

GMBP FILE: 104104

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## 1. INTRODUCTION

GM BluePlan Engineering Limited (GMBP) was retained to conduct a Preliminary Hydrogeological Study in support of a proposed residential development, the River's Edge Subdivision, located in the northeast portion of the Town of Grand Valley in Dufferin County, Ontario (shown on Figure 1, hereafter referred to as the "Site").

This hydrogeological study is being undertaken to assess the potential hydrogeological impacts, identify preliminary construction dewatering requirements and to support future construction dewatering approvals.

It is our understanding that the development will include single family, semi-detached, apartments and townhouse residential buildings, as well as yards, driveways, roadways, site servicing, park, open space and stormwater management infrastructure. It is also understood that the proposed development will be serviced with municipal sewage system and municipal water services. The Draft Plan of Subdivision (dated August 29, 2023) for the development is provided in Appendix A.

This report presents the findings of the hydrogeological study, which has gathered data from a review of background information and field investigations and provides an assessment of the preliminary expected requirements for construction dewatering.

### 1.1 Purpose and Scope

The purpose of this report is to gather information about the Site from existing sources as well as from Site-specific field investigation activities to characterize the hydrogeological setting of the Site.

The study considers a desktop "Study Area" that encloses the area within 500 m of the Site (see Figure 2) and involves the following scope of work:

1. Desktop Study, including collection of information from publicly available sources (Ontario Geological Survey maps, Ontario water well database, Grand River Conservation Authority (GRCA), Ontario Source Protection Atlas),
2. Search of Ministry of the Environment, Conservation and Parks (MECP) water well records within 500 m of the Site boundary,
3. Field Investigation, including,
  - a. Completion of overburden boreholes and installation of monitoring wells, for characterization of overburden hydrogeological conditions (completed as part of Geotechnical Investigations by Peto McCallum Ltd. (June 2009) and JLP Services Inc. (April 2022)),
  - b. Measurement of groundwater levels including long term groundwater elevation data collection (2009-2015, 2022 - present),
  - c. Collection of groundwater samples and laboratory analysis by a CALA/SCC accredited laboratory for general groundwater chemistry parameters,
  - d. Completion of hydraulic testing in select monitoring wells, and,



- e. Door-to-door well survey of potential well supplied properties within 125 m of the proposed development site boundaries (to be completed at a later date, the current report will be revised to incorporate the findings after well survey is completed).
4. Hydrogeological data analysis and reporting including:
  - a. Presentation of information gathered through desktop study and field investigation,
  - b. Preliminary Construction Dewatering Assessment, including estimated flow rates and water quality as well as identification of potential impacts due to dewatering,
5. Preparation of PTTW application (to be completed at a later date after municipal approvals are obtained and construction schedule is finalized)
  - a. Preparation of PTTW application, required mapping, compilation of supporting documents and submission to the MECP.

A more detailed description of the field investigation activities is provided in Section 3 (Methodology).

## 2. BACKGROUND

### 2.1 Site Location and Setting

The 36.583-hectare (ha) subject property is located in the northeast part of the Town of Grand Valley, adjacent to the Grand River (Figure 1).

Under existing conditions, the northerly portion of the Site is used for agricultural purposes while the southerly portion was used for aggregate extraction. The areas formerly used for aggregate extraction are no longer in production and consist of vacant land. The easterly portion of the Site consists mainly of wooded areas and slope towards the Grand River with a wetland located in the southeast portion of the Site.

The lands to the west and south of the Site have been developed as residential lands consisting of mostly single-family housing. An existing townhome condominium block is located southwest of the Site. The Grand River borders the Site at the westerly property boundary followed by additional wooded areas and agricultural lands further west of the Grand River.

Legally, the Site is described as Part of Lot 31, Concession 3, Geographic Township of East Luther, All of Block C, Registered Plan 114 (Village of Grand Valley), Town of Grand Valley, County of Dufferin.

Figure 1 shows the location of the Site on a regional scale and Figure 2 shows an aerial view of the Site and Study Area.

### 2.2 Proposed Development

The "Project" mainly involves the development of a residential subdivision. The proposed development generally consists of single family and semi-detached lots, a townhouse block, an apartment block, a park block, open space areas, internal roadways and a stormwater management block. Appendix A contains the proposed Draft Plan of Subdivision (dated August 29, 2023) prepared by GSP Group.

An extension of Bielby Street from Scott Street to County Road 25 will form the main roadway connection for this development. A third road connection to the existing road network will be provided by extending Luther Road from the existing cul-de-sac to the Bielby Street extension.

As shown on the Draft Plan of Subdivision (Appendix A), a pedestrian walkway connection has been provided from Crozier Street to the proposed park block. The development will be serviced with municipal water and sewage services.

### 2.3 Local Relief and Drainage

Locally, topography across the Site varies, with grades ranging from 4% to in excess of 15% along the valley slope adjacent to the Grand River. There is approximately 25m of fall across the Site from the northwest to the southeast. The elevation ranges from approximately 481m at the northwest portion of the Site, falling to approximately 455m towards the easterly and southeasterly portions of the Site.

The majority of the Site drains overland in the easterly direction towards the Grand River. The central portion of the Site drains in the easterly direction to an existing wetland located at the southeast portion of the Site ultimately discharging to the Grand River.

### 2.4 Geology and Physiography

Majority of the Site is located within the physiographic region known as the Dundalk Till Plain, with the westerly portion of the Site in the Stratford Till Plain region, as shown on Figure 3a (Chapman and Putnam 1984). The Dundalk Till Plain is characterized by swamps or bogs and by poorly drained depressions, with the local soils generally consisting of a surficial deposit of silt, probably windblown, underlain by poorly draining gleysolic soils. Given the Site's proximity to the Stratford Till Plain, there may be a transitional influence on the Site of moraines and broad clay soils, typical of the Stratford Till Plain region (Chapman and Putnam 1984).

In terms of physiographic landforms, mapping from the Ontario Geological Survey (Chapman and Putnam 2007) indicates the majority of the Site lies within a Spillways landform, with the northeasterly portion, along the Grand River, within Till Moraines and the northwesterly portion within an Undrumlined Till Plain. Figure 3b shows the physiographic landforms present at and in the vicinity of the Site.

According to mapping from the Ontario Geological Survey (2010), the surficial geological materials of the Site are mainly Tavistock Till (silt to clayey silt till) occupying the northwest to the central portion, with Glaciofluvial outwash (gravel and gravelly sand, frequently overlain by several feet of sand or silt) occupying the central and southeastern portion, and Alluvium (unsubdivided silt, sand, gravel) occupying a small portion of the Site along the southeast. The surficial geological materials reported beyond the Site boundary include Tavistock Till and Glaciofluvial outwash (in all directions) as well as Glaciolacustrine or local pond sediments (to the west), Catfish Creek till (to the east along the Grand River), and Alluvium to the north and south (along the Grand River) (Figure 4).

The bedrock in the Study Area is the Guelph Formation dolostone, a tan to brown, medium-to very thick bedded, fine to medium-crystalline, fossiliferous, sucrosic dolostone. Beneath the Guelph Formation is a discontinuous aquitard known as the Eramosa Formation, which contains argillaceous and bituminous material, which in turn is underlain by the Goat Island Formation, an aquifer of lower transmissivity which is noted for distinctive geochemistry with elevated sulphate and halite (Brunton 2009). The Goat Island Formation is underlain by the Gasport Formation.

Water well records attributed to locations within 500 metres of the Site provide observations of the stratigraphy at greater depths (MECP 2022a). A review of select records in the vicinity of the Site indicates that at shallow depths the soils are generally reported as clay/clay and stones/boulders, gravel, hardpan (till), gravel with stones, with deeper soils being described mainly as clay, gravel, sand, sand and gravel with mention of cobbles and boulders throughout, underlain by grey, blue, brown limestone. The transition from the overburden material to the underlying dolostone bedrock is reported as between 4.3 mbgs (Well ID 1704706) to 32.3 mbgs (Well ID 1701231).

Reviewing the water well records (MECP 2022a) in the vicinity of the Site, the thickness of the limestone unit is reported as approximately 96 m (at least) in this area (Well ID 1701037).

## 2.5 Local Use of Groundwater

### 2.5.1 Source Water Protection

A review of source protection mapping available through the GRCA (2022) and the Source Water Protection Information Atlas (MECP 2022) indicates that the municipal water supply wells and associated WHPAs are located west and southwest of the Site (i.e., they do not overlap with the Site). The nearest municipal wells (Town of Grand Valley Wells PW-1 and PW- 2) are located approximately 675 m southwest of the Site and the Site does not overlap a Wellhead Protection Area (WHPA), or a Wellhead Water Quantity Zone (WHPAQ).

The central portion of the Site does however overlap a Significant Groundwater Recharge Area (SGRA) (Intrinsic Vulnerability Level – Moderate to High). This designation under the Sourcewater Protection (SWP) framework will guide the impact assessment of the dewatering activities insofar as potential impacts to municipal water sources are concerned.

### 2.5.2 Water Well Records

A search of the MECP water well records database (MECP 2022a) returned approximately 130 water well records attributed to locations within the 500 m Study Area. Table 1 provides a summary of the information provided in the water well records. Figure 5 illustrates the locations of the water well records within the Study Area.

A brief summary of information collected from the water well records is as follows:

- Among well records belonging to overburden wells:
  - By usage:
    - Monitoring: 12 records
- Among well records belonging to bedrock wells:
  - By usage:
    - Abandoned: 3 records
    - Commercial: 1 record
    - Domestic: 98 records
    - Monitoring: 2 records
    - Municipal: 3 records
    - Public: 7 records
  - Average Static Water Level: 26.7 mbgs
- Among well records that are unknown (either bedrock or overburden)
  - By usage:
    - Abandoned: 2 records
    - Domestic: 1 record
    - Unknown: 1 record

Copies of select water well records within 500 m of the Site are provided in Appendix B.

## 2.6 Relevant Local and Site-Specific Reports

### 2.6.1 Geotechnical Investigation – Peto McCallum Ltd. (April 2009)

Peto MacCallum Ltd. (Peto) completed a geotechnical investigation of the property in April 2009 followed by a slope assessment in 2012.

Based on the 2009 geotechnical investigation boreholes, there appears to be between 600 and 800mm of topsoil at the north and west portions of the Site and close to 200mm thick topsoil towards the easterly central portion of the Site.

The subsurface Site soils consist of a mix of clayey silt till with cobbles and occasional seams of sand and gravelly sand which exhibited groundwater seepage as some locations (BH1, BH3, and BH 4) underlain by sand and gravelly sand deposits. The clayey silt till materials are found predominantly at the north end of the property while the sands and gravels are found towards the central portion of the property (Peto McCallum Ltd. 2009). Borehole logs are presented in Appendix C with locations shown on enclosed borehole plan in Appendix C and on Figure 6.

### 2.6.2 Geotechnical Investigation – JLP Services Inc.

JLP Services Inc. (JLP) completed a follow-up geotechnical investigation at the southerly portion of the Site in April 2022. Based on the JLP report, the topsoil layer at the southerly portion of the Site ranges between 50 to 900mm at boreholes MW1, MW2 and MW3. Topsoil, consisting of silty sand to sandy silt, buried at a depth of approximately 2.4 mbgs and 0.3 mbgs was encountered at boreholes MW3 and MW4, respectively.

Deposits of loose to compacted fill have also been encountered at boreholes MW1, MW3 and MW4. The fill consists of wet sandy silt to silty sand, some gravel, trace clay and some organics. Below the fill deposit (MW1, MW3) and topsoil (MW2), a sand and gravel deposit was encountered extending to investigated depth at MW1 and MW 2. At MW3, sand deposit was encountered below the sand and gravel unit. Bedrock (or large boulder) was encountered below the fill deposit at MW4.

JLP recommended that the surficial and buried topsoil be removed and replaced with engineered fill and the areas of loose fill be excavated, placed and compacted. Borehole logs are presented in Appendix C.

Peto and JLP geotechnical investigations recommend an impermeable liner for the proposed stormwater management (SWM) facility construction due to the high permeability of the Site soils at the proposed SWM facility location. The JLP investigation recommends a minimum 1m thick clay liner conforming to OPSS.MUNI 1205 requirements, or an approved equivalent geosynthetic liner.

### 2.6.3 Additional Monitoring Wells On-site

During the site visit in May 2022, an additional three monitoring wells were found to be located onsite. These wells were installed by others and at this time, there is no report available to confirm the installation details for these wells. These wells are designated as wells MW101, MW102 and MW103 and locations are shown on Figure 6.

## 2.7 Identified Receptors

Receptors are those entities which may be affected by the proposed development or its construction. They may include anthropogenic features, water users, or ecological features.

Receptors relevant to the development and anticipated construction dewatering activities include the following:

- Municipal water resources (per the Source Protection Plan),
- Private water wells on nearby sites,
- Construction activities,
- Significant natural areas such as wetland/woodland areas on-site and the Grand River adjacent to the Site.

### 3. FIELD INVESTIGATION METHODOLOGY

The hydrogeological field investigation involved the following activities:

- Water level monitoring (manually and by electronic datalogging pressure transducers);
- Hydraulic conductivity testing (single-well response testing);
- Groundwater quality sampling and laboratory analyses;
- Site reconnaissance.

Water levels were monitored by GM BluePlan at the monitoring wells installed as part of the 2009 Geotechnical Investigation by Peto McCallum Ltd. (BH3, BH4 and BH9) in 2009 and between 2010 and 2015. Water level data was collected by manual measurement using an electronic water level tape and is graphically presented on hydrographs (see Charts BH 3, BH4, BH9, after text).

Starting in May 2022, water levels are monitored by GMBP at each of the seven existing on-Site monitoring wells (BH3, BH4 and BH9 (2009 wells installed by Peto) and MW1, MW2, MW3 and MW4 (2022 wells installed by JLP). Water level data is collected by manual measurement using an electronic water level tape and through the use of electronic datalogging pressure transducers at most wells. The pressure transducers were installed in the monitoring wells on May 20, 2022. A continuous record of groundwater level data has been collected from the time of logger installation up to July 2023 (see Charts MW1 through MW3, after text). Monitoring well MW4 (installed by JLP in 2022) was dry between May and September 2022 (see Chart MW4, after text). Consequently, the logger from this well was moved to monitoring well MW103 (one of the wells installed by others, see Charts MW101 through MW103, after text). Well locations are shown on Figure 6.

Samples of groundwater were collected from select monitoring wells on November 12, 2022. Prior to purging and sampling, static water levels in the monitoring wells were measured using a Solinst water level tape to determine the well volume and for determination of groundwater flow direction. Each monitoring well to be sampled or where a slug test was to be performed at a later date, was purged and developed, using dedicated inertial pump tubes, of at least five (5) well volumes or the monitoring well was purged until dry several times.

Using the same dedicated pump tube, water quality samples were then collected into laboratory supplied bottles specific to the requested analysis. Samples were kept cool (between 0 and 10°C) and submitted to a CALA/SCC-accredited laboratory (ALS Laboratories, Waterloo) under standard chain-of-custody protocols for analyses. Samples for metals analysis were field filtered using 0.45 µm Waterra® inline disposable filter and preserved using laboratory prepared preservative. Laboratory results are summarized in Table 3. The laboratory-issued Certificate of Analysis is provided in Appendix D.

Single-well response tests (or “slug tests”) were conducted at select monitoring wells on November 18, 2022 (BH4, BH9 and MW2, where a sufficient water column was present on day of testing). These tests were conducted using the rising-head mode. Preparation for the test began by recording a manual measurement of the static groundwater level and installing a datalogging pressure transducer at an appropriate depth. A “slug” (weighted PVC cylinder) was inserted into the well to cause an increase in the water level in the well. The slug was then removed from the well to cause a proportional decrease in the water level and the subsequent increase in water levels (“rising-head”) was measured with time as the water level in the well returned to equilibrium. The data collected from these tests was analyzed using the Bouwer-Rice (1976) method to determine the hydraulic conductivity of the soil intersecting the well screen.

Site reconnaissance was completed by GMBP to visually observe the Site and confirm desktop study information. This occurred concurrently with other field activities, mainly in November 2022.

## 4. FIELD INVESTIGATION FINDINGS

### 4.1 Groundwater Levels

At monitoring wells BH3, BH4 and BH9, groundwater levels were measured manually by GMBP staff using an electronic water level probe in 2009 and every two to six months between February 2010 and July 2015. In May 2022, these three wells, and the wells installed in April 2022 (MW1 to MW4), were equipped with electronic datalogging pressure transducers to collect continuous water level measurements. In September 2022, logger from MW4 was moved to a nearby well MW103 (installed by others), as the monitoring well MW4 was dry for several months after logger installation.

Hydrographs of the groundwater level data collected from these wells are enclosed after text (see Charts BH3, BH4, BH9, MW1 through MW4 and MW101 through MW103), manual water level measurements are summarized in Table 2. A record of manual groundwater level measurements, along with elevations and monitoring well details, is also included on the hydrographs. Monitoring well and geotechnical borehole locations are shown on Figure 6.

The record of groundwater data from the wells where long term manual measurements are available, i.e., BH3, BH4 and BH9 (between 2009 and 2015, 2022-2023), indicates that the range of fluctuation (i.e., vertical distance between maximum "seasonal high" and minimum "seasonal low" groundwater levels) is about 4.09 m at BH3, 3.14 m at BH4 and 2.03 m at BH9. To date, the highest groundwater levels on-site occur at BH4, ranging in elevation from 475.86 and 476.97 m (data from 2009-2015 and 2022-2023). Maximum groundwater levels recorded at BH3, are approximately 469.17 m and 470.92 m (data from 2009-2015 and 2022-2023). Maximum groundwater levels recorded at BH9, are approximately 454.96 m and 455.25 m (data from 2022-2023 and 2009-2015). As shown on Figure 6, BH3 and BH4 are located in the upland area of the Site with ground surface at 471.06 m and 477.01 m, respectively, while BH9 is located in the former gravel extraction area at a ground surface elevation of 455.39 m.

At the location of the monitoring wells installed in 2022 (MW1 to MW4), and the additional wells installed by others (MW101 to MW103) within the lower lying area of the Site (former gravel extraction area), based on water level measurements collected between April 2022 (by JLP during geotechnical investigation) and May to July 2023 (i.e., the period of monitoring by datalogger), the range of fluctuation in groundwater levels recorded to date is approximately to 2.3 (MW3) to 2.21 m (MW103). Maximum groundwater levels recorded at these instruments are approximately 453.97 m (MW103) to 454.11 m (MW2).

#### 4.1.1 Groundwater Gradients

Groundwater contours based on seasonal high groundwater level measurements from 2009 to 2023 (BH3, BH4, and BH9) and May to July 2023 (MW1, MW2, MW3 and MW 103) have been plotted in Figure 7. These contours have been determined through a numerical interpolation of the maximum water level readings recorded at each of the monitoring wells. A moderate degree of interpretive judgment was applied to extrapolate the seasonal high groundwater level surface outside of the area circumscribed by the available monitoring wells. This interpretation was based mainly on topography.

The orientation of the contours indicates that the lateral direction of groundwater flow is generally toward the Grand River - to the northeast in the northerly part of the Site, and to south/southeast in the southerly portion of the Site.

The spacing of the contours indicates a lateral gradient of approximately 0.01 (in the southern portion of the Site, between MW2 and BH9) to about 0.02 (in the northern portion of the Site between BH4 and BH9).



## 4.2 Hydraulic Conductivity Testing

### 4.2.1 Single Well Response Tests (Slug Tests)

The hydraulic conductivity of the soil intersected by the well screen was tested at select monitoring wells, where sufficient water column was present on the day of testing (i.e., BH4, BH9, and MW2) using a single-well response testing method. The testing was conducted at each of the three monitoring wells in a rising-head mode.

Spreadsheets showing the test data and the calculated hydraulic conductivity values are provided in Appendix E. Overall, the data collected from the tests were very conducive to analysis, with few irregularities and consistent trends in water level change with time.

BH4, BH9, and MW2 were each installed (i.e., well screen is located) in the soil layers as listed below. The results of this testing provide estimates of the hydraulic conductivity of each corresponding soil layer. Below is a summary of the hydraulic conductivity test results:

- BH4
  - Soil Layer: SAND
  - Rising-Head Test:  $3.3 \times 10^{-6}$  m/s
- BH9
  - Soil Layer SAND AND GRAVEL (clayey silt till also reported in screen interval)
  - Rising-Head Test:  $1.5 \times 10^{-4}$  m/s
- MW2
  - Soil Layer SAND AND GRAVEL
  - Rising-Head Test:  $4.1 \times 10^{-6}$  m/s

Using Hazen's equation, the results of grain size distribution tests (see Appendix C, BH9 SS3 and MW2 Sample 2) suggest a hydraulic conductivity in the range of  $6 \times 10^{-5}$  to  $1 \times 10^{-4}$  m/s for the Sand and Gravel unit. Though it is recognized that estimates based on grain size distribution tests can vary from *in situ* conditions by a variety of factors (e.g. density, bedding/stratification, sample disturbance and loss of fines) prior experience with dewatering at other sites with coarse glaciofluvial deposits in the Wellington County area (e.g. Guelph, Fergus) and Grand Valley indicate a similar range in hydraulic conductivity.

It therefore appears that the hydraulic conductivity of the coarse material is not uniform across the Site.

The geometric mean is  $1.3 \times 10^{-5}$  m/s.

## 4.3 Shallow Groundwater Quality

Samples of groundwater were collected from monitoring wells with sufficient water column i.e., BH4 BH9 and MW2. Results of analyses are provided in Appendix D (laboratory certificate of analysis) and are summarized in Table 3 for general chemistry and metals parameters.

The results of the analyses indicate that the quality of the groundwater in the shallow sand aquifer is generally compliant with Provincial Water Quality Objectives.

Qualitatively, the groundwater quality results are characterized by moderate mineralization, as indicated by the elevated hardness, calcium, and magnesium concentrations. There is some evidence of anthropogenic impacts to the shallow aquifer, such as elevated sodium (24.5 mg/L at BH4 and 93.8 mg/L at MW2), and chloride (138 mg/L at BH4 and 330 mg/L at MW2). The elevated sodium and chloride concentrations are likely due to the application of road salt.

#### 4.4 Site Reconnaissance

While attending the Site to undertake other fieldwork activities, GMBP made reconnaissance observations to verify, where possible, findings from the desktop review.

The use of the Site under current conditions is as follows:

- Northerly part of the Site, north of Luther Road, is currently under agricultural use (field under grass cover during Fall 2022 visits),
- Forested area in the northeastern part of the Site with a steep slope towards the adjacent Grand River,
- Southerly portion of the Site, formerly used for aggregate extraction, consists of mainly wooded areas, open areas where extraction activities took place and sloped lands towards the Grand River,
- Several walking trails are present throughout, leading from the adjacent residential lands along the western and southern portions of the Site, down into the former gravel extraction area.

The Site topography was confirmed to vary significantly across the Site: moderately sloping upland area in the northern part of the Site in the agricultural use portion, with a significant drop towards the river along the wooded area in the northeasterly portion of the Site. In the central and southerly portion of the site, where the former aggregate extraction took place, there is a steep slope from the existing residential lands along the west part of the Site, to the former gravel extraction area. A wetland is present in the southeasterly portion of the Site.

### 5. HYDROGEOLOGICAL CONCEPTUAL SITE MODEL

A “conceptual model” of a Site describes its physical setting and provides an interpreted overview of the hydrogeological behavior of the Site. It provides a basis for general understanding of groundwater flows and other hydrogeological phenomena as well as a basis for the assessment of potential impacts.

The topography of the Site consists of an upland area (northern part of the Site currently under agricultural use) with a steep slope from the existing residential lands along the westerly property boundary into the former gravel extraction area and towards the forested area northwest of agricultural field and to the west bank of the Grand River. There is approximately 25 m of fall in the northwest to southeast direction across the site. A wetland area is present in the southeast part of the Site, near the forested part of the Site and the River.

In terms of hydrostratigraphy, the geologic strata underlying the Site are characterized generally as:

- Upper Till deposits with seams of sand and gravelly sand which exhibited groundwater seepage (in the upland area, not affected by former gravel extraction operations)
- Sand aquifer (greater than 5 m thick), overlying
- Till aquitard, overlying
- Guelph Formation (dolostone) bedrock.

Based on water level data collected from the Site, the Sand aquifer is interpreted to be an unconfined or “water-table” aquifer, in which the direction of lateral groundwater flow is mainly toward the northeast in the northern portion of the Site and to the south/southeast in the southern portion of the Site. Groundwater levels fluctuate over the course of the year, typically reaching “seasonal high” levels during the late winter and early spring and descending gradually to “seasonal low” levels in the summer and fall. The interval separating “seasonal high” from “seasonal low” ranges from about 0.46 m to 2.89 m depending on location and the soils intersected by the screen.

The low-lying wetland area in the southeasterly portion of the Site and the Grand River appear to be a reflection of the proximity of the water table to ground surface.

Given the average thickness of the overburden (about 27 m in the upland area where no gravel extraction took place (Well Record No. 7305097) and about 17 m, east of the Grand River (Well Record No. 1702086) and the



predominance of till materials below the shallow/surficial sand aquifer, there appears to be significant hydraulic separation between the overburden aquifer and the bedrock aquifer. As such, activities affecting the overburden aquifer (e.g., dewatering) would not be likely to affect the bedrock aquifer.

## 6. CONSTRUCTION DEWATERING ANALYSIS

### 6.1 Dewatering Estimates

Due to the relative elevation of groundwater levels and required excavations (e.g., for servicing and for stormwater management pond construction), it is expected that some degree of dewatering will be required for the construction of the proposed development.

Due to the presence of coarse saturated soils on-Site, there is potential for substantial groundwater flows whenever excavations penetrate into these strata, or where they approach close enough to strata that are under subartesian pressures.

Preliminary calculations indicate that construction dewatering rates could reach 706,000 L/d during construction of the Stormwater Management (SWM) Pond alone (see Appendix F). This is based on a seasonal high groundwater elevation of 455.8 masl and a hydraulic conductivity of  $3 \times 10^{-4}$  m/s. Seasonal fluctuation in groundwater level may result in a lesser discharge requirement.

Dewatering rates for servicing may also be significant. For example, preliminary grades for servicing along Luther Road indicate excavations down to elevations around 472 masl in an area where groundwater levels have been recorded near 476 masl in underlying sand and gravel strata which may require depressurization during construction. Preliminary calculations show that dewatering for servicing may also be in the range of 336,000 L/d in certain locations on-Site (see Appendix F). This estimate is based on a hydraulic conductivity of the underlying sand and gravel of  $3 \times 10^{-4}$  m/s, the seasonal high groundwater level of 476 masl and a minimum drawdown requirement of 3.0 m.

Presently, construction dewatering rates in excess of 400,000 L/d from any single source require a Permit to Take Water to be obtained from the Ministry of the Environment, Conservation and Parks. It is therefore recommended that a Permit to Take Water be obtained for this project.

A more fulsome analysis of dewatering rates shall be prepared to support an application for Permit to Take Water to the Ministry of the Environment, Conservation and Parks.

It is noted that recent proposals posted to the Environmental Registry of Ontario, if accepted and incorporated into existing regulations, would remove the limitations on daily discharge rates for dewatering activities: this dewatering activity would then be able to proceed under a registration to the Environmental Activity and Sector Registry (per O.Reg. 63/16) rather than a Permit to Take Water.

Due to the size of the Site, it is expected that there will be ample space to provide erosion and sediment control and discharge management facilities to ensure that the discharge does not impact neighbouring lands or the local environment. The lands downgradient from the proposed development area may also be able to absorb a substantial amount of the discharged water by infiltration, which will limit the potential for erosion of the ground surface approaching the Grand River.

### 6.2 Zone of Influence

Based on preliminary calculations (see Appendix F), the radius of influence of dewatering is expected to be less than 100 m (e.g., 16.5 m to 83 m, based on preliminary estimates). The corresponding zone of influence is therefore expected to be smaller than that area within 100 m of any given excavation for the proposed project.

To support the Permit to Take Water application to the MECP, an assessment for potential of dewatering-induced ground settlement will be required for the areas within the identified zone of influence.

A more detailed assessment of the zone of influence for the proposed project shall be prepared to support the anticipated PTTW application and associated settlement assessment.

### 6.3 Methodology

Sump pumping is expected to be applicable for most dewatering applications (e.g. servicing and stormwater pond construction) during construction. Coarse, cohesionless materials are prevalent throughout the site which, if saturated at the time of excavation, would require shallow excavation slopes: deep wells or wellpoints may therefore be preferable if there is a need to limit the size of an excavation.

However, there are some locations (e.g., along Luther Road) where subartesian pressures may require the sand aquifer to be depressurized using deep wells or wellpoints to prevent base heave or “quick” conditions and improve excavation stability.

A more fulsome review of dewatering methodologies and applications across the Site shall be prepared to accompany the PTW application to the MECP. Any applicable additional groundwater level data should be included and considered in that review.

Due to the limitations of suction lift, the practical depth of operation for wellpoints is about 5 m (Powers *et al*, 2007). If wellpoints are used, it may be necessary to reduce the suction lift by excavating a bench alongside the servicing trench and placing the header line and pump on the bench.

Generally, sump dewatering will not be suitable for any location where the depressurization of deeper subartesian strata is required: those areas must be addressed by wellpoints or deep wells.

It will be the responsibility of the contractor to select and implement an appropriate dewatering methodology.

## 7. IMPACT ASSESSMENT

A proposed development may result in hydrogeological impacts due to the effects it may have on the hydrogeological system. Hydrogeological impacts generally fall into two categories: water quality impacts or water quantity impacts. A given receptor may be impacted by both, either, or neither of these types of impacts depending on the potential severity of the effect, whether there is a pathway between the source and the receptor, and whether the receptor is sensitive to that type of impact.

Table 3 (below) provides the results of a screening assessment used to identify which types of impacts apply to which receptors. Potential impacts identified in the screening process will be discussed in greater detail in the following sections.

Table 3: Screening of Potential Hydrogeological Impacts

Receptor	Potential Impacts Related to		Rationale
	Water Quantity	Water Quality	
Municipal Water Resources/ Source Water Protection	■	■	The Site is not located within a Well Head Protection Area. Central portion of the Site lies within a Significant Groundwater Recharge Area.  The Source Protection Plan does not provide any policies related to these areas.
Private Water Wells	■	■	Records for domestic water wells within the Study Area were identified. The records indicate that there are several bedrock water supply wells at properties within 125 m of the Site. There was no overburden water supply well records identified within 125 m of the Site based on review of available well records.
Adjacent Grand River and On-Site Wetland Area	■	■	Ecological classification mapping (Natural Resource Solutions Inc. 2022) indicates the presence of a wetland in the southeasterly portion of the Site. The zone of influence is expected to overlap with part of the wetland area. There is potential for the dewatering discharge to be released overland and flow into the wetland area and into the river.
Construction Activities	■	■	Construction dewatering may be required to complete servicing activities. The approval and operation of groundwater control systems will be considered a potential water quantity impact to the project.  The dewatering discharge may result in impacts to surface water quality for which the construction project is responsible to mitigate.

## 7.1 Municipal Water Resources / Source Water Protection

### 7.1.1 Quantity

The nearest municipal wells (Town of Grand Valley Wells PW-1 and PW-2) are located approximately 675 m southwest of the Site and the Site does not overlap a Wellhead Protection Area (WHPA), or Wellhead Water Quantity Zone (WHPAQ). The Site does however overlap with a Significant Groundwater Recharge Area (SGRA) (Intrinsic Vulnerability Level – Moderate to High).

Within SGRA, there are no designated “significant” drinking water threats.

As such impacts to municipal water resources are not anticipated.

## 7.1.2 Quality

Potential groundwater quality impacts related to the long-term operation of the subdivision are being addressed through the stormwater management design which will provide a level of treatment according to MECP stormwater management guidelines.

In addition to this and as discussed in Section 7.1.1, no source protection vulnerable areas have been identified to overlap the Site except an SGRA for which no policies are in place. As such, quality impacts to municipal source water are not anticipated.

## 7.2 Private Water Wells

### 7.2.1 Quantity

#### Long-Term Subdivision Operation

Regarding the long-term operation of the subdivision, potential groundwater quantity impacts are not anticipated.

The development will be municipally serviced for water. Therefore, there will be no private water wells installed for the proposed development. In some cases, private water wells may cause a distributed water quantity impact (i.e., due to the cumulative water taking from numerous wells over a large area). However, these impacts will not occur because no private wells will be installed.

The subdivision is not expected to induce long-term impacts to the quantity of water available to private water wells.

#### Construction Dewatering

Construction dewatering will be undertaken to facilitate certain aspects of the construction process (i.e., construction of SWM pond and site servicing) and is expected to result in a temporary drawdown of the water table. The zone of influence of the dewatering activity has been estimated to extend up from about 16.5 m to 83 m from the proposed excavation areas (based on preliminary dewatering estimates).

These activities are not likely to affect wells that have been installed into the bedrock because of the depth to bedrock as well as a thick layer of till that creates a substantial hydraulic separation between the surface and the bedrock.

However, there is the potential for shallow/dug wells constructed in the surficial sand aquifer to be affected by the drawdowns imposed by the construction dewatering activities. Based on the review of the available MECP well records, there were no shallow overburden wells identified on properties within 125 m of the Site. A door-to-door survey will be completed in the near future, to provide additional information on whether there are active shallow overburden water supply wells in the Site vicinity.

Regardless, should shallow water supply wells be identified in the Site vicinity, it is expected that because of the distance between the excavation areas, the amount of drawdown that will be experienced by these wells is expected to be relatively minor and should not result in substantial loss of water availability. Should shallow overburden wells be identified in Site vicinity as part of the door-to-door well survey, it is recommended that a water quantity (i.e., water level) monitoring program be implemented for all users of dug wells who will permit the monitoring of their well within 100 m of the Site.

## 7.2.2 Quality

### Long-Term Subdivision Operation

It is recognized that stormwater management ponds have the potential to facilitate the infiltration of certain chemical constituents into the groundwater. Chemicals of concern are mainly sodium and chloride (i.e., constituents of road salt) and to a lesser extent other metals and organic chemicals (i. e., oil and grease, fuel and exhaust residues) which may be generated from roadway runoff. It is expected that deep (i.e., bedrock) wells will not be affected by these. Though there is potential for shallow overburden wells to be susceptible to these types of impacts, the risk will be substantially reduced because the SWM pond will be constructed with a compacted clay liner to mitigate the transport of these chemicals of concern into the groundwater.

To further mitigate potential risk to private water well users, it is recommended that a well monitoring program be implemented for all residences that utilize a shallow overburden well within 100 m of proposed SWM facility. Based on the currently proposed location of the SWM pond, the nearest residential lots are located greater than 100 m, as such it is not anticipated that shallow overburden wells are in less than 100 m proximity to the proposed location of the SWM facility).

### Construction Dewatering

For the same reasons discussed above (Section 7.2.1), the dewatering activity is not expected to affect drilled wells installed in the bedrock. Though generally more susceptible to being affected by surficial activities, the quality of water available to the dug overburden water supply wells (should any be identified) is not expected to be affected by the proposed dewatering.

The discharge of water from the dewatering system is not expected to cause degradation of water quality available to local wells because the main parameter of interest is total suspended solids, which will be filtered out by the local geological materials before it reaches one of the nearby wells. Furthermore, erosion and sediment controls will be provided during construction process to prevent the release of sediment-laden water to the environment.

The act of pumping water may in some cases cause changes to local groundwater gradients and can contribute to silting up of nearby wells, but this is a rare occurrence. Should any active overburden wells be identified as part of the door-to-door well survey on neighbouring properties, it is likely that they are located far enough away from the proposed work area that these gradient effects will be substantially attenuated.

Impacts to the quality of groundwater available to local private well users are therefore not expected. As a precautionary measure, it is recommended that should overburden water supply wells be identified within 125 m of the Site, a well monitoring program will be initiated (where Owners will permit access for monitoring) and would include the collection and analysis of a baseline (i.e., pre-construction) water quality sample(s) from dug wells identified in the door-to-door well survey in Site vicinity.

## 7.3 Wetland Area and the Grand River

### 7.3.1 Quantity

#### Long-Term Subdivision Operation

With respect to the subdivision itself, the quantity of water available to the wetland area is considered to have been addressed satisfactorily through the stormwater management design (see discussion in Section 7.1.1).

Because erosion and channelization can cause increased runoff and reduced recharge, to preserve the recharge functionality of the wetland area it is recommended that the stormwater management facility outlet be designed to minimize erosion. This may involve the provision of a dispersed discharge (e.g., flow spreader) in the design

of the stormwater management facility outlet. The stormwater management design should also seek to maintain peak runoff flows at pre-development levels.

Incorporating these provisions to limit erosion, water quantity impacts to the wetland area are not expected.

#### Construction Dewatering

During construction dewatering, it is noted that the quantity of water available in the wetland area may be affected by the drawdown caused by the dewatering system. The drawdown at the wetland area is expected to be relatively minor (approximately 2 m and less). Monitoring data have shown that groundwater levels on-Site tend to fluctuate within a range of 0.47 m to 2.89 m over the course of a year (see Section 4.1 and Charts BH3, BH4, BH9, MW1 through MW4 and MW101 through MW103, after text). As such, the drawdown caused by dewatering is likely to be within the range of typical seasonal fluctuation. The potential for impact is further offset by the fact that the dewatering discharge will be released to the same catchment from which it was taken and would thus offset the magnitude and extent of impact of the drawdown.

The discharge of water from the dewatering system is not expected to cause quantity-related impacts to the wetland area. This is partly because the water is being taken from the same catchment to which it is being discharged, and also because there is a municipal drainage channel downstream of the wetland area which drains the wetland to a storm catch basin south of the proposed development. The channel will provide an opportunity for excess water to drain away, limiting the potential for flooding or waterlogged conditions to impact the wetland.

In addition to the foregoing, the drawdown will also be temporary because the construction dewatering activity itself is expected to be temporary.

As such, it is not expected that the dewatering activity will cause water quantity impacts to the wetland area.

### 7.3.2 Quality

#### Long-Term Subdivision Operation

As discussed in Section 7.2.2, stormwater management ponds may be a potential point of entry for certain chemical constituents to enter the groundwater. Based on the available groundwater level data, it is expected that seepage from SWM Facility would enter the shallow groundwater system in the vicinity of the wetland area and the Grand River. Though wetland area is not a groundwater discharge feature, there is still the potential that groundwater from or affected by the seepage from SWM Facility could be available to the wetland area during periods of high groundwater.

To mitigate potential impacts to the wetland and the river in this way, it is recommended that SWM Facility be constructed with a suitable liner to reduce the rate of mass transfer between the SWM Facility and the groundwater.

#### Construction Dewatering

Due to the potential for some of the dewatering discharge water to reach the wetland area and the river as runoff, there is a possibility that the surface water quality of the wetland and river will be impacted by the dewatering operation.

The parameter of interest is total suspended solids, which may be due to the direct uptake of sediment from the pumps and/or wellpoints or may be due to the erosion of the ground surface at the point of discharge.

Mitigation plans (see Section 8) are to be implemented during the dewatering process to ensure that water received by the wetland will be of suitable quality.



## 7.4 Construction Activities

Construction activities are expected to be subject to potential hydrogeological impacts in the sense that there is potential for groundwater to seep into excavations. Dewatering is therefore expected to be required to facilitate the construction work.

An analysis of construction dewatering requirements has been completed and has identified potential for dewatering volumes in excess of 400,000 L/d (see Section 6). As such, it is recommended that a Permit to Take Water be obtained from the MECP in respect of the proposed dewatering project. A detailed monitoring and mitigation plan for the proposed dewatering activity will be prepared at the time of PTTW application preparation.

## 8. MITIGATION ACTIVITIES

Mitigation activities are divided into two categories: general mitigation activities and contingency mitigation activities.

General mitigation activities are those which are implemented for the duration of the dewatering project.

Contingency mitigation activities are those which are implemented when indicated by the results of the monitoring activities. For example, if a monitoring activity indicates that a water quality threshold has been exceeded, the corresponding contingency activity would then be implemented. A monitoring and contingency mitigation plan will be prepared at the time of preparation of the PTTW application.

### 8.1.1 General Mitigation Activities

The following mitigation activities are to be maintained throughout the duration of the dewatering activity:

1. Erosion and Sediment Control Plan
2. Dewatering Intake Points

#### Erosion and Sediment Control Plan

The Erosion and Sediment Control Plan concerns the management of discharge water. It involves the preparation of a discharge area consisting of a pad of clearstone surrounded by a silt sock barrier. Discharge will be released into the discharge area through a geotextile filter bag to capture sediment. The discharge area, selected by the contractor, shall be placed at least 15 m away from the wetland area (i.e., outside the established wetland buffer) and at least 15 m away from the riverbank. Where possible, the discharge area shall be placed such that the overland flow path that would be taken by the discharge, is fully vegetated.

The discharge area and filter bag shall be sized by the contractor according to the manufacturer specifications to ensure that there is sufficient capacity for the expected flow. It may be necessary to provide multiple filter bags to provide sufficient capacity and to provide flexibility or redundancy in maintenance.

All erosion and sediment control facilities shall be installed according to the following standards:

- OPSS.MUNI 805 (*Construction Specification for Temporary Erosion and Sediment Control Measures*)
- OPSS.MUNI 518 (*Construction Specification for Control of Water from Dewatering Operations*).

#### Dewatering Intake Points

Sump dewatering is particularly susceptible to the uptake of entrained sediment with the discharge water.

Therefore, all sumps shall be constructed as filtered sumps, lined with a clean granular material (e.g., clearstone), to allow entrained sediment to settle out before being taken up by the sump pump.

The contractor shall determine the number of sumps and select appropriate pumps to meet the dewatering drawdown and flow requirements.

Where wellpoints are utilized, the wellpoints shall be provided with adequate screens and/or filters and the network shall be properly developed and tuned to ensure minimal uptake of sediment with the dewatering stream.

The discharge from the construction dewatering works shall be released within the prepared discharge area described in "Erosion and Sediment Control Plan" above.

## 9. SUMMARY

A preliminary hydrogeological study has been undertaken to support municipal approval and future Permit to Take Water approval for construction dewatering activities associated with the construction of the River's Edge residential development located in the Town of Grand Valley in Dufferin County, Ontario. The following is a summary of the findings of the investigation:

- The Site is approximately 36.6 ha in size and is located in the northeast portion of the Town of Grand Valley.
- Municipal water services are available in the area, but some residents may continue to rely on private water wells for water supply.
- Topography across the Site varies, with grades ranging from 4% to in excess of 15% along the banks adjacent to the Grand River. There is approximately 25 m of fall across the Site in the northwest to the southeast direction.
- The Site is in the watershed of the Grand River and is located adjacent to the Grand River.
- The Site is situated within the Dundalk Till Plain and borders the Stratford Till Plain physiographic region.
- The hydrostratigraphy of the Site consists of:
  - Upper Till deposits with seams of sand and gravelly sand which exhibited groundwater seepage (in the upland area, not affected by former gravel extraction operations),
  - Sand aquifer (greater than 5 m thick), overlying
  - Till aquitard, overlying
  - Guelph Formation (dolostone) bedrock.
- Groundwater level measurements collected in the monitoring wells in the upland area of the Site, indicate seasonal high groundwater elevations ranging in elevation from 475.39 to 475.86 m (i.e., during late winter and into spring). In the lower lying area where former gravel extraction operations took place, groundwater elevations ranging from 451.79 m to 453.60 m were recorded between May 2022 and July 2023.
- Groundwater gradients indicate that the lateral component of groundwater flow is generally to the Grand River: to the northeast in the northerly part of the Site, and to south/southeast in the southerly portion of the Site.
- Locally, groundwater resources supply both the municipal system and potentially private water well users.
- In terms of source water protection, the Site is not located within a Wellhead Protection Area, however, it is located within a Significant Groundwater Recharge Area. The nearest municipal wells (Town of Grand Valley Wells PW-1 and PW-2) are located approximately 675 m southwest of the Site
- Hydraulic testing of overburden soils indicates that the average hydraulic conductivity of the surficial glaciofluvial sand unit is approximately  $1.3 \times 10^{-5}$  m/s.
- Groundwater quality testing indicates general compliance with the Provincial Water Quality Objectives despite evidence of minor influence of anthropogenic activities (e.g., elevated sodium and chloride likely due to road salt application).



- Construction dewatering is expected to be required for this site for the construction of servicing and the stormwater management facility. For construction dewatering approval purposes, preliminary dewatering rates have been estimated at:
  - From SWM Pond excavation 706,000 L/d
  - From sanitary sewer excavation 336,000 L/d
    - Based on a preliminary review of the Luther Road sanitary sewer extension.
- The zone of influence of dewatering has been estimated to be those areas within 16.5 to 83 m of excavations requiring dewatering.
- Based on preliminary dewatering estimates above 400,000 L/day, a MECP Permit to Take Water approval is expected to be required to permit construction dewatering.

## 10. CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented in this report, the hydrogeological impact assessment of the Site indicates that there are no major regulatory obstacles to the development of the Site.

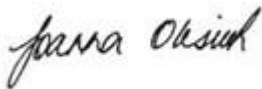
Regarding the hydrogeological conditions and impact assessment of the Site, GMBP make the following recommendations for consideration of the proposed dewatering activities:

- That all on-Site wells be decommissioned according to O.Reg. 903 by a licensed water well drilling contractor when it has been determined that the wells are no longer required for monitoring purposes and preferably before the start of house construction at the Site;
- That a Permit to Take Water be obtained from the MECP in respect of the proposed dewatering activity;
- That the stormwater management facility be constructed with an appropriate liner; and,
- That the outlet from the SWM Pond be constructed with provisions to limit erosion in the wetland area.


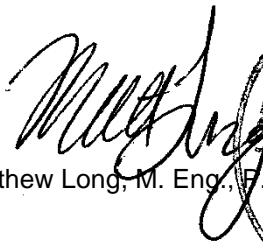
All of which is respectfully submitted.

GM BLUEPLAN ENGINEERING LIMITED

Per:



Joanna Olesiuk, M. A. Sc., P. Geo. (Limited)



Matthew Long, M. Eng., P. Eng.

## 11. STATEMENT OF LIMITATIONS

The information in this report is intended for the sole use of Thomasfield Homes Limited. GM BluePlan Engineering Limited accepts no liability for use of this information by third parties. Any decisions made by third parties on the basis of information provided in this report are made at the sole risk of the third parties.

GM BluePlan Engineering Limited cannot guarantee the accuracy or reliability of information provided by others. GM BluePlan Engineering Limited does not accept liability for unknown, unidentified, undisclosed, or unforeseen surface or sub-surface conditions that may be later identified.

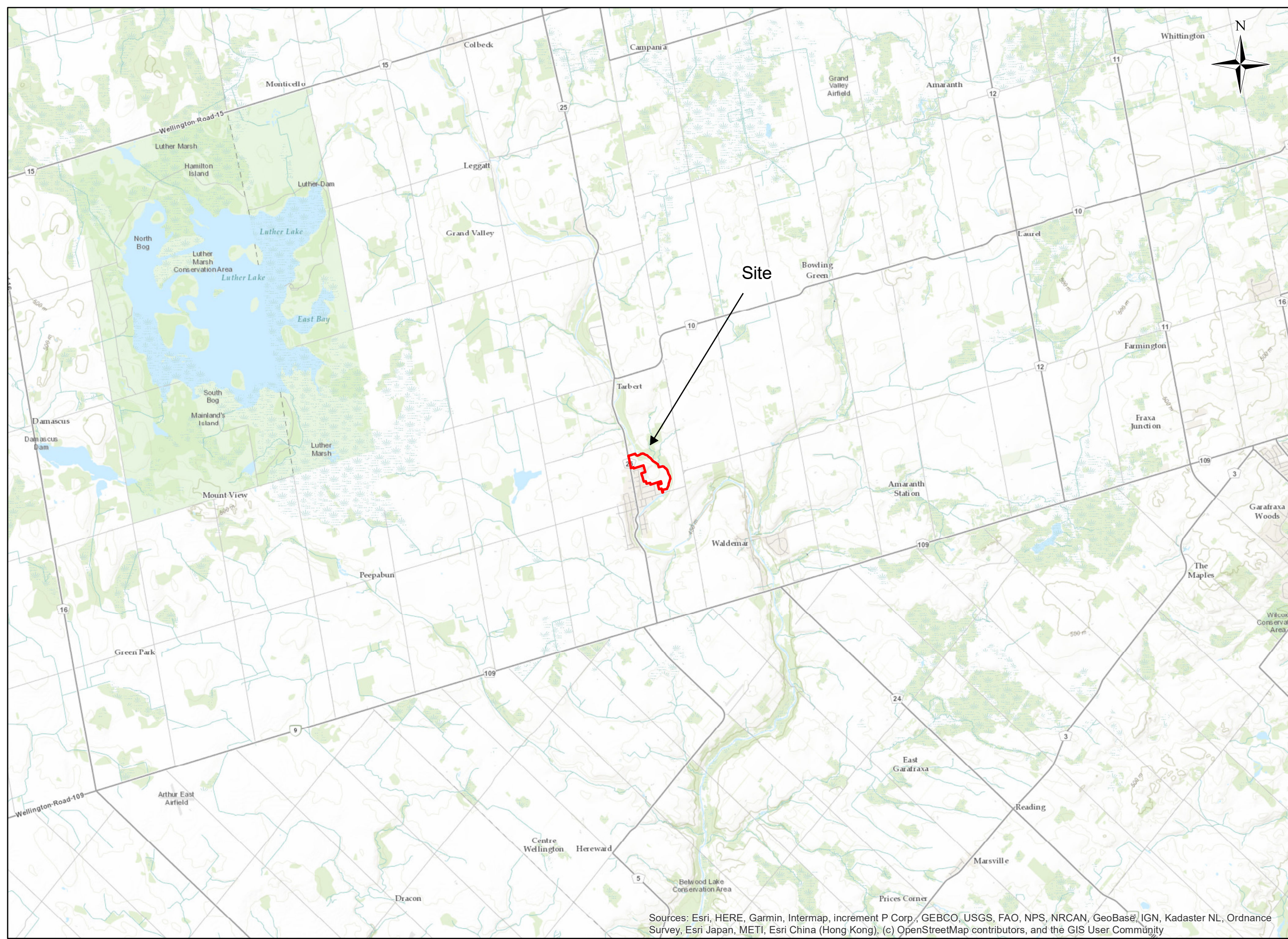
The conclusions pertaining to the condition of soils and/or groundwater identified at the site are based on the visual observations at the locations of the investigative boreholes/monitoring wells and on the reported laboratory results for the selected soil and/or groundwater samples. GM BluePlan Engineering Limited cannot guarantee the condition of soil and/or groundwater that may be encountered at the site in locations that were not specifically investigated as part of this investigation. This report is considered to be representative of the condition of the Site as of July 7, 2023.

## 12. REFERENCES

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## **FIGURES**





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

 Site Boundary  
 (approx.)

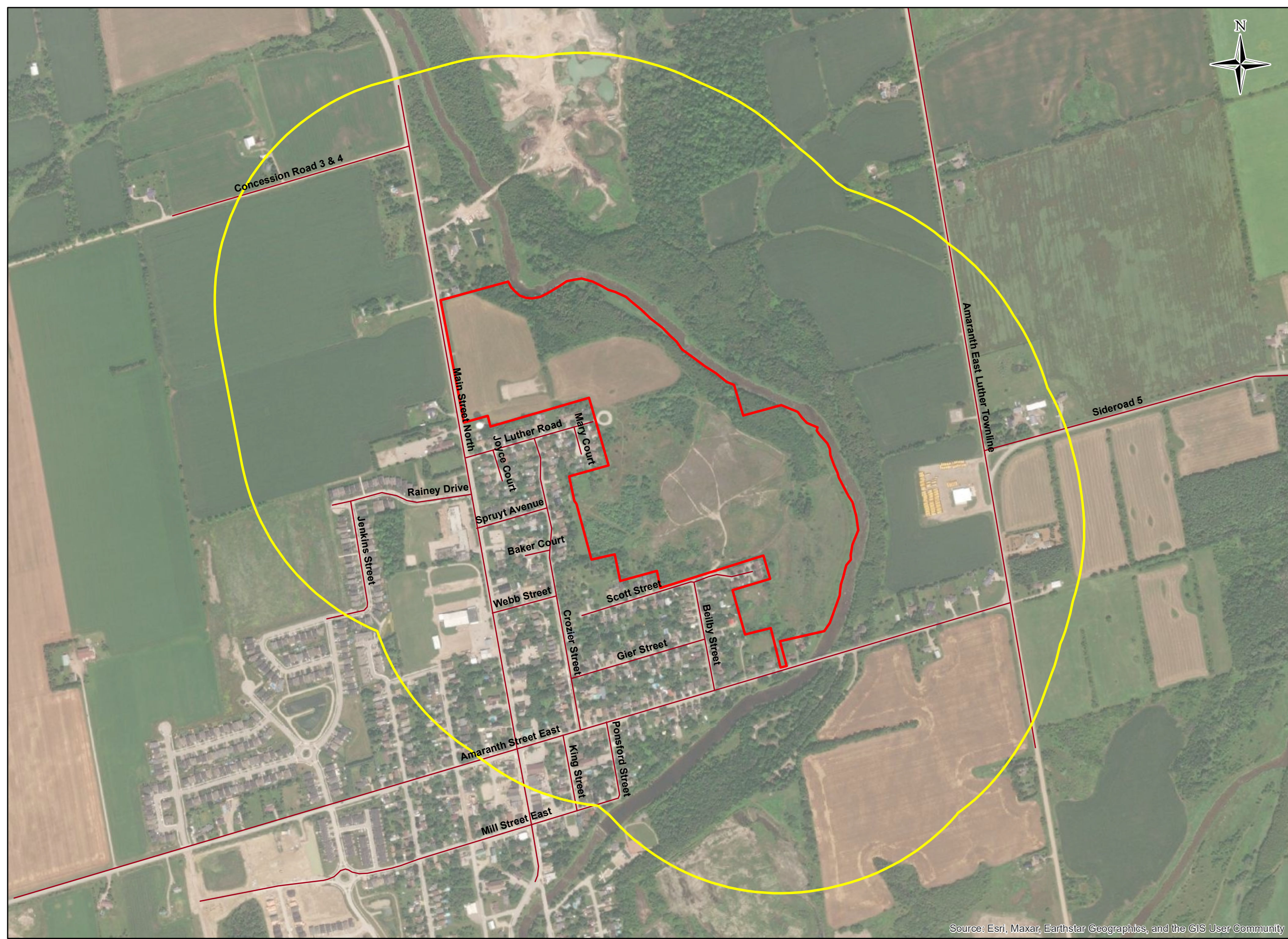
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Figure 1:  
 Site Location



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- Site Boundary (approx.)
- Study Area (500m)
- Roads

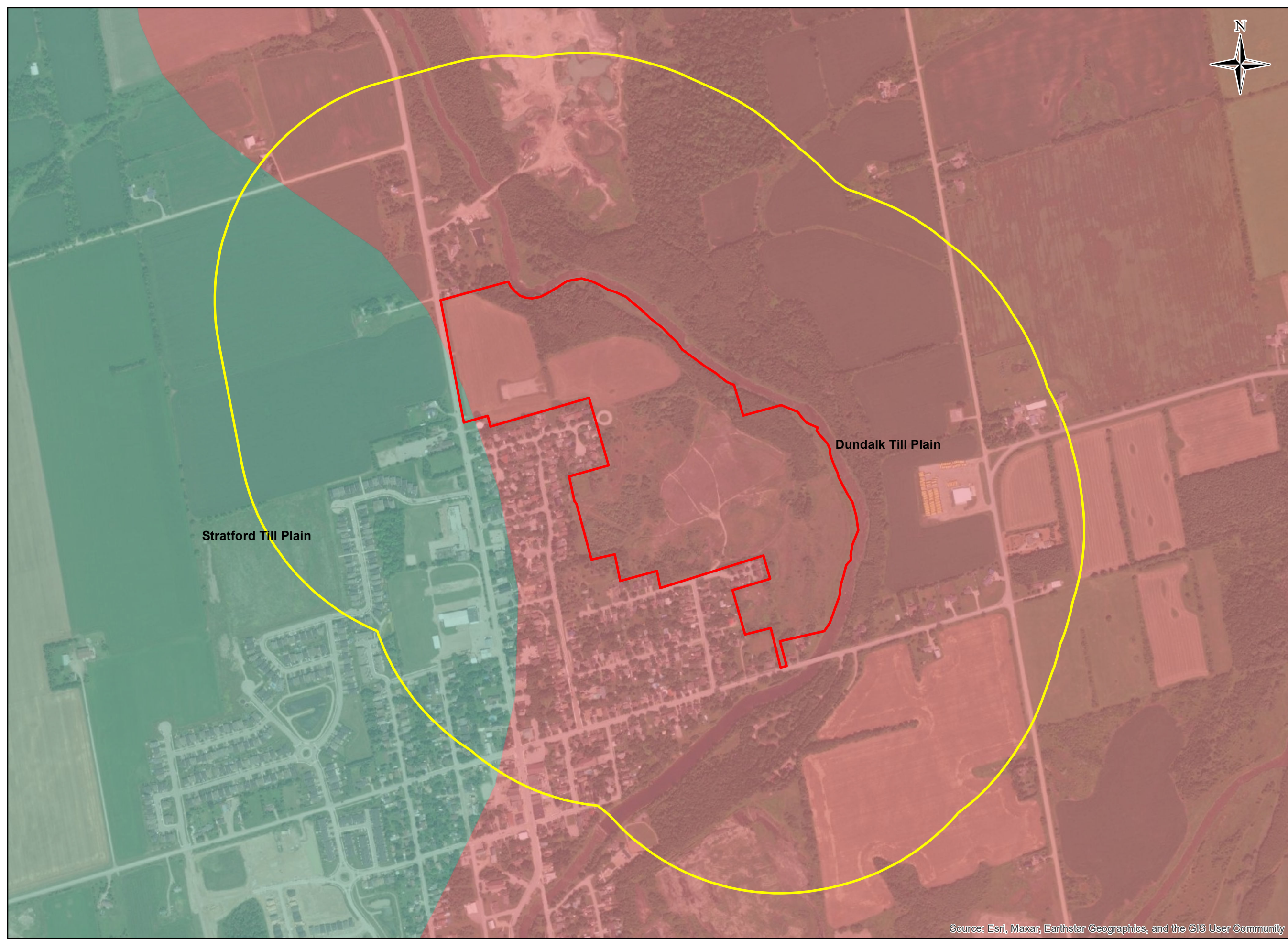
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Figure 2:  
 Study Area Layout



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- ▭ Site Boundary (approx.)
- ▭ Study Area (500m)
- Physiographic Regions**
- UNIT, REGION**
- ▭ 7, Dundalk Till Plain
- ▭ 8, Stratford Till Plain

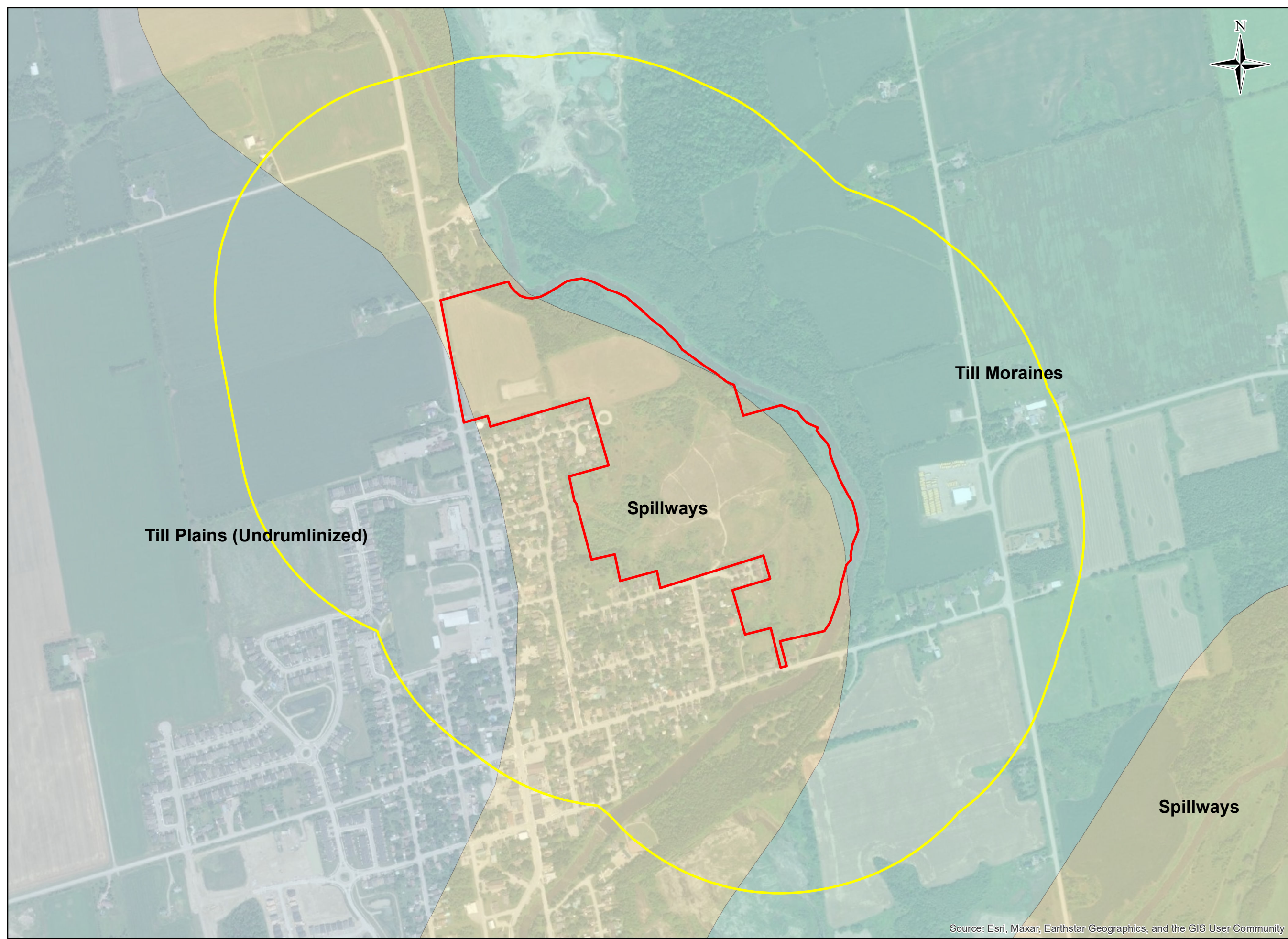
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**Figure 3a:**  
 Physiographic Regions



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
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 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- Site Boundary (approx.)
- Study Area (500m)
- Physiography of Southern Ontario**
- Spillways
- Till Moraines
- Till Plains (Undrumlinized)

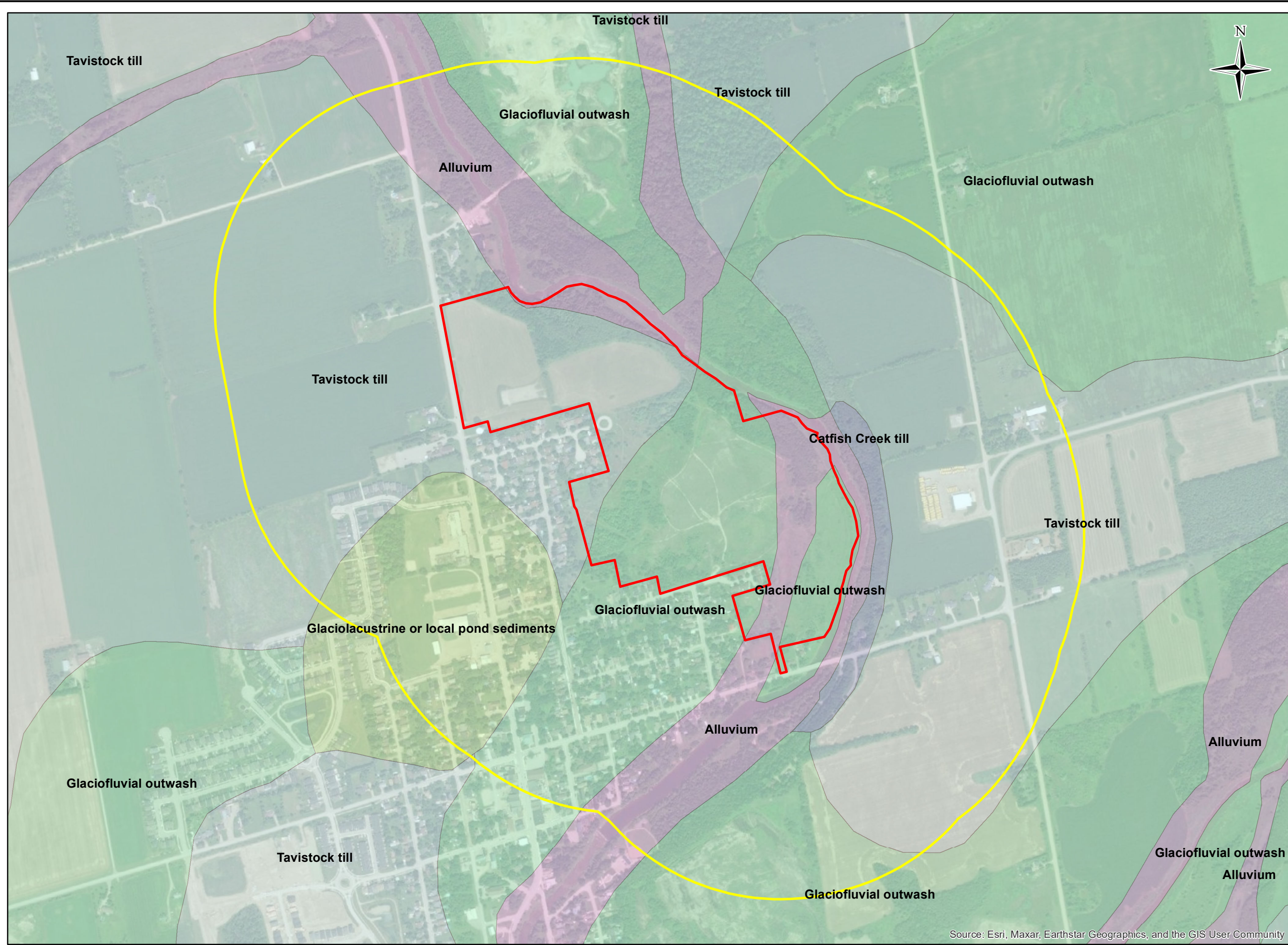
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**Figure 3b:**  
 Physiographic Landforms



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- Site Boundary (approx.)
- Study Area (500m)
- Surficial Geology of Ontario**
- Alluvium
- Catfish Creek till
- Glaciofluvial outwash
- Glaciolacustrine or local pond sediments
- Tavistock till

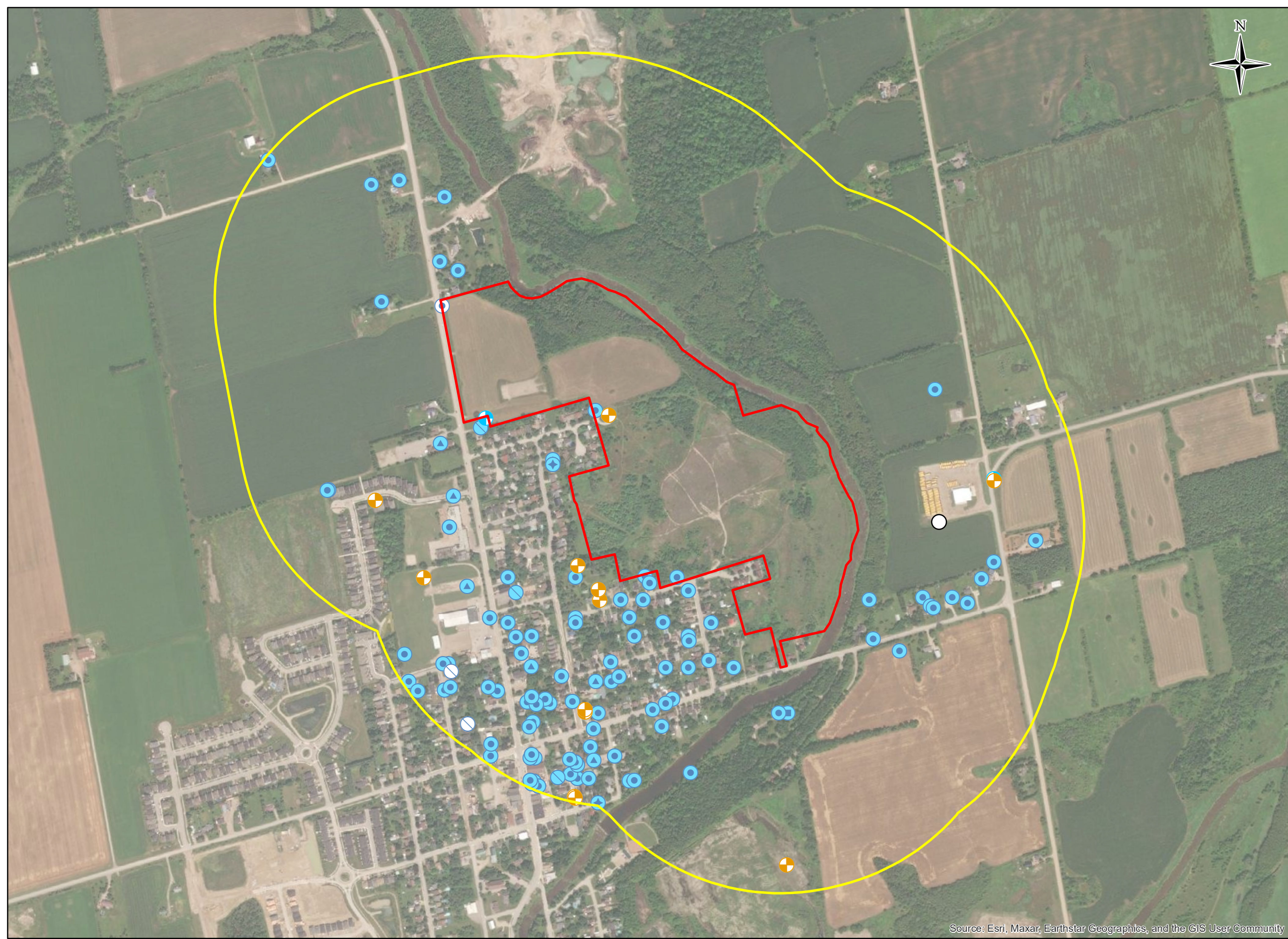
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 November 2022

Figure 4:  
 Surficial Geology



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
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 Town of Grand Valley

- Site Boundary (approx.)
- Study Area (500m)
- Use, Type**
- Abandoned, Bedrock
- Abandoned, Unknown
- Commercial, Bedrock
- Domestic, Bedrock
- Domestic, Unknown
- + Monitoring, Bedrock
- + Monitoring, Overburden
- + Municipal, Bedrock
- ▲ Public, Bedrock
- Unknown, Unknown

Scale: 1: 8,000  
 November 2022

Figure 5:  
 Well Records



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- ▭ Site Boundary (approx.)
- Monitoring Location**
- ⊕ Borehole
- ⊕ Monitoring Well

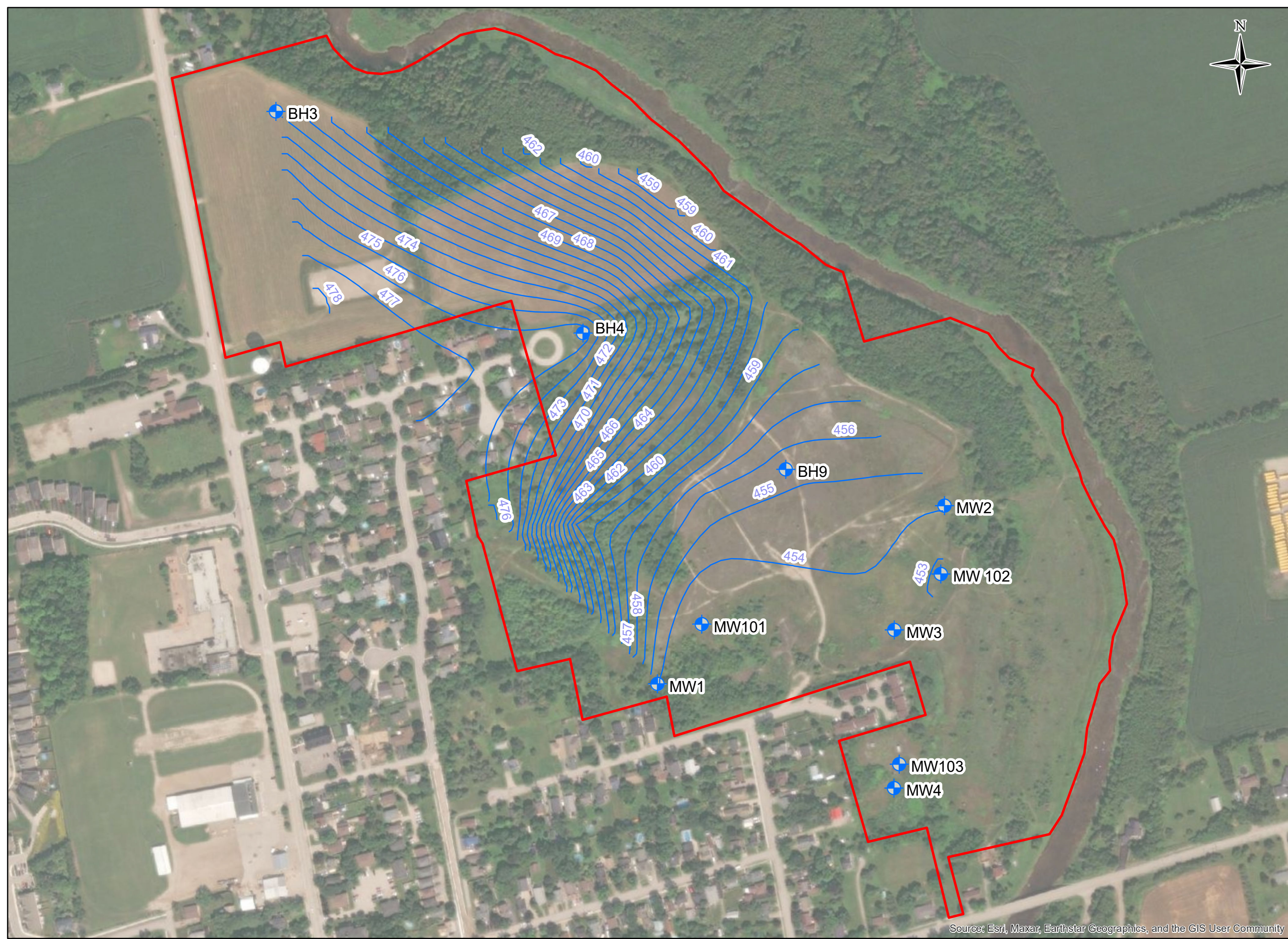
Scale: 1: 3,500  
 November 2022

Figure 6:  
 Site Investigation Layout



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





Project: 104104  
 Hydrogeological Study  
 River's Edge  
 Subdivision

Part of Lot 31  
 Concession 3,  
 Geographic Township  
 of East Luther,  
 All of Block C,  
 Registered Plan 114  
 Town of Grand Valley

- ▭ Site Boundary (approx.)
- Contours - SHGWL (2023-07-07)
- ⊕ Monitoring Wells

Scale: 1: 3,500  
 September 2023

Figure 7  
 Seasonal High  
 Groundwater Level



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



## **TABLES**

**Table 1  
MECP Well Records Summary**

MECP Well ID	Date Completed	Well Type	Well Depth (mbgs)	Depth to Bedrock (mbgs)	Static Water Level (mbgs)	Well Use
1700239	7/15/1948	Bedrock	29	12.2	7	Domestic
1700240	7/10/1950	Bedrock	27.4	15.2	4.6	Domestic
1700241	11/7/1950	Bedrock	29.3	20.1	10.7	Domestic
1700242	11/15/1950	Bedrock	24.4	9.1	2.4	Domestic
1700243	11/29/1950	Bedrock	31.4	11.9	5.2	Domestic
1700244	12/6/1950	Bedrock	20.4	6.1	0.9	Domestic
1700246	5/25/1951	Bedrock	20.4	6.1	-0.6	Domestic
1700247	7/4/1951	Bedrock	19.8	6.7	-1.2	Domestic
1700248	10/15/1951	Bedrock	21.9	9.1	2.7	Domestic
1700249	1/20/1952	Bedrock	27.4	15.2	5.5	Domestic
1700202	11/13/1958	Bedrock	58.5	27.4	10.7	Domestic
1700209	5/24/1952	Bedrock	31.4	13.1	0	Domestic
1700210	7/10/1956	Bedrock	53.9	29.3	18.3	Domestic
1700252	3/9/1954	Bedrock	71.9	24.4	14	Domestic
1700253	4/24/1954	Bedrock	21.9	11.3	0	Domestic
1700255	8/5/1955	Bedrock	18.9	11.6	4.3	Domestic
1700256	8/16/1955	Bedrock	19.8	6.7	3.7	Domestic
1700258	9/21/1955	Bedrock	38.1	21.3	10.7	Domestic
1700260	7/26/1957	Bedrock	54.9	28.3	13.7	Domestic
1700261	11/19/1957	Bedrock	10.4	7.6	2.1	Domestic
1700262	12/3/1957	Bedrock	35.7	12.8	4	Domestic
1700264	4/18/1958	Bedrock	19.8	7.6	0	Domestic
1700270	3/25/1960	Bedrock	47.2	11.6	3.4	Domestic
1700274	2/2/1963	Bedrock	18.3	9.1	1.2	Domestic
1700277	10/4/1963	Bedrock	43.9	24.4	18.3	Domestic
1700278	10/15/1963	Bedrock	38.1	18.3	9.8	Domestic
1700284	11/5/1956	Bedrock	22.9	11.9	2.7	Domestic
1700285	12/14/1965	Bedrock	62.5	22.3	15.2	Domestic
1700286	9/9/1965	Bedrock	32.6	20.1	12.2	Domestic
1700287	9/25/1965	Bedrock	33.5	20.4	12.8	Domestic
1700288	8/26/1965	Bedrock	69.5	55.5	16.8	Domestic
1700289	2/16/1966	Bedrock	27.4	18	7.6	Domestic
1700290	6/17/1966	Bedrock	22.9	12.2	3	Domestic
1700292	7/4/1966	Bedrock	22.9	9.1	1.8	Domestic
1700293	8/4/1966	Bedrock	30.5	16.8	9.8	Domestic
1700866	9/4/1968	Bedrock	33.2	7	1.8	Domestic
1700868	10/10/1969	Bedrock	44.2	11.6	3.4	Domestic
1700923	6/3/1968	Bedrock	22.3	14	4.6	Domestic
1700924	7/16/1968	Bedrock	68.6	21.6	9.1	Domestic

**Table 1  
MECP Well Records Summary**

MECP Well ID	Date Completed	Well Type	Well Depth (mbgs)	Depth to Bedrock (mbgs)	Static Water Level (mbgs)	Well Use
1700925	7/11/1968	Bedrock	58.8	26.8	19.5	Domestic
1700963	4/9/1969	Bedrock	21.3	8.2	0	Domestic
1700965	3/19/1969	Bedrock	51.8	9.8	-1.8	Commercial
1700982	6/3/1969	Bedrock	52.1	11.3	3.7	Domestic
1701037	10/14/1969	Bedrock	125	29	18.9	Public
1701172	10/29/1970	Bedrock	54.9	22.3	14.6	Domestic
1701209	5/20/1971	Bedrock	30.5	15.2	2.7	Domestic
1701231	8/13/1971	Bedrock	131.1	32.3	22.6	Public
1701270	10/29/1971	Bedrock	83.8	26.2	21.3	Public
1701289	11/22/1971	Bedrock	42.7	11.6	3	Domestic
1701290	11/24/1971	Bedrock	29	7	0.3	Domestic
1701291	11/26/1971	Bedrock	38.1	13.4	6.1	Domestic
1701561	10/11/1973	Bedrock	62.2		15.8	Public
1701581	11/9/1973	Bedrock	51.8		18.6	Domestic
1701587	11/5/1973	Bedrock	41.1	11.6	1.8	Domestic
1701604	10/17/1973	Bedrock	37.8	10.7	3.7	Public
1701793	9/20/1974	Bedrock	45.7		0.3	Domestic
1701795	12/18/1974	Bedrock	68.6	3.7	16.5	Domestic
1701824	8/14/1974	Bedrock	64.9	21.3	9.1	Domestic
1701921	7/3/1975	Bedrock	42.7	13.7	6.1	Domestic
1701929	7/16/1975	Bedrock	10.7	5.5	3.4	Domestic
1701938	7/22/1975	Bedrock	13.7	4.9	1.8	Domestic
1701997	8/23/1975	Bedrock	129.5	28.7	20.4	Municipal
1702032	10/13/1975	Bedrock	29	7.3	0.9	Municipal
1702086	5/3/1976	Bedrock	59.4	18	4.6	Domestic
1702117	5/27/1976	Bedrock	42.7	13.1	4.6	Domestic
1702128	7/21/1976	Bedrock	16.2	6.1	2.4	Domestic
1702324	8/26/1977	Bedrock	42.7	26.2	20.1	Domestic
1703271	9/4/1986	Bedrock	24.4	9.1	0.9	Public
1702249	8/30/1976	Bedrock	50.3	7.6	1.5	Domestic
1702267	4/9/1977	Bedrock	42.7	13.4	7.6	Domestic
1702312	11/4/1977	Bedrock	57.9	10.1	0.9	Domestic
1702333	5/10/1977	Bedrock	50.3	12.8	1.8	Domestic
1702335	6/27/1977	Bedrock	50.3	11	3.4	Domestic
1702503	7/23/1978	Bedrock	23.5	14	5.2	Domestic
1702536	4/9/1979	Bedrock	36	6.1	0.6	Domestic
1702605	7/25/1979	Bedrock	33.8	12.5	5.5	Domestic
1702607	5/16/1979	Bedrock	61.6	15.2	1.5	Domestic
1702609	9/26/1979	Bedrock	11.3	7	4.6	Domestic

**Table 1  
MECP Well Records Summary**

MECP Well ID	Date Completed	Well Type	Well Depth (mbgs)	Depth to Bedrock (mbgs)	Static Water Level (mbgs)	Well Use
1702645	10/22/1979	Bedrock	15.8	8.5	1.5	Domestic
1702689	11/22/1980	Bedrock	29.3	25	18.3	Domestic
1702777	<null>	Bedrock	67.1	24.7	18.6	Domestic
1702786	6/29/1981	Bedrock	32	9.8	3.4	Domestic
1702889	10/4/1982	Bedrock	24.7	11.6	7.3	Domestic
1702977	12/8/1983	Bedrock	43.6	9.8	3	Domestic
1702978	12/2/1983	Bedrock	70.1	19.5	13.7	Domestic
1702979	10/5/1983	Bedrock	66.1	25.9	21.6	Municipal
1703111	7/5/1984	Bedrock	38.4	25.9	19.2	Domestic
1703192	8/23/1985	Bedrock	32	8.8	0	Domestic
1703286	10/25/1986	Bedrock	32.9	21	9.1	Domestic
1703364	7/2/1986	Bedrock	21.3	11.9	4	Domestic
1703565	12/11/1987	Bedrock	67.1	28.7	19.8	Domestic
1703744	11/16/1988	Bedrock	36.6	11.9	5.5	Domestic
1703746	3/26/1988	Bedrock	26.5	12.8	4.6	Domestic
1703747	11/17/1988	Bedrock	21	11.6	5.2	Domestic
1703818	10/25/1988	Bedrock	20.4	14.6	0	Domestic
1703945	8/1/1989	Bedrock	51.2	12.8	6.7	Domestic
1704036	10/6/1989	Bedrock	40.2	20.4	12.8	Domestic
1704157	4/5/1990	Bedrock	80.2	23.8	20.1	Public
1704693	8/15/1993	Bedrock	59.7	26.2	19.2	Domestic
1704705	8/15/1993	Overburden	6.7	5.2	0	Monitoring
1704706	8/15/1993	Overburden	6.7	4.3	0	Monitoring
1704707	8/15/1993	Overburden	4.6		0	Monitoring
1704708	8/15/1993	Overburden	11	4.3	0	Monitoring
1704795	11/21/1994	Bedrock	129.5		0	Abandoned
1704969	9/3/1996	Bedrock	60.4	23.5	0	Domestic
1705038	6/19/1997	Bedrock	51.8	27.1	12.2	Domestic
1705039	6/12/1997	Bedrock	61.3	27.7	16.8	Domestic
1705612	8/23/2000	Bedrock	29.9	23.8	13.1	Monitoring
1705613	8/25/2000	Overburden	4.9		0	Monitoring
1705732	9/24/2001	Bedrock	53.6	23.5	20.4	Domestic
1706271	8/10/2004	Bedrock	51.8	28.3	8.9	Domestic
1706511	10/11/2005	Bedrock	36.9	20.4	15.8	Domestic
1706732	10/5/2006	Bedrock	118	22.9	5	Domestic
7048573	7/23/2007	Bedrock	54.9		21.3	Domestic
7124261	1/19/2009	Bedrock	0		3.7	Abandoned
7124829	4/17/2009	Overburden	13.7		0	Monitoring
7149323	7/15/2010	Overburden	6.7		0	Monitoring



**Table 1  
MECP Well Records Summary**

MECP Well ID	Date Completed	Well Type	Well Depth (mbgs)	Depth to Bedrock (mbgs)	Static Water Level (mbgs)	Well Use
7158773	10/8/2010	Bedrock	122.5		0	Domestic
7166178	5/11/2011	Bedrock	43.3		9.1	Domestic
7180820	9/28/2011	Unknown	0		0	Domestic
7199645	11/9/2011	Unknown	0		0	Abandoned
7239276	3/19/2015	Overburden	4.6		0	Monitoring
7239277	3/19/2015	Overburden	4.6		0	Monitoring
7265499	5/22/2016	Bedrock	0		0	Abandoned
7290235	6/1/2017	Overburden	6.1		0	Monitoring
7290219	6/1/2017	Overburden	7.6		0	Monitoring
7290220	6/1/2017	Overburden	7.6		0	Monitoring
7305097	1/23/2018	Bedrock	130.4		21.1	Monitoring
7321434	7/25/2018	Unknown	0		0	Abandoned
7372419	10/6/2020	Unknown	0		0	Unknown

**Table 2. Manual Groundwater Measurements (2009, 2010-2015, 2022-2023)**

<b>WELL ID</b>	<b>BH3</b>		<b>BH4</b>		<b>BH9</b>	
<b>Ground Elev. (m)</b>	<b>471.023</b>		<b>477.000</b>		<b>455.326</b>	
<b>TOC Elev. (m) (2022)</b>	<b>472.512</b>		<b>478.094</b>		<b>456.377</b>	
<b>Date</b>	Depth to water (m)	Groundwater Elevation (m)	Depth to water (m)	Groundwater Elevation (m)	Depth to water (m)	Groundwater Elevation (m)
May 9, 2009	-	-	2.250	475.860	2.260	454.134
February 19, 2010	4.623	467.508	2.553	475.557	2.591	453.803
August 18, 2010	3.528	468.603	2.441	475.669	2.710	453.684
November 23, 2010	3.445	468.686	2.533	475.577	2.812	453.582
August 5, 2011	3.192	468.939	2.409	475.701	3.118	453.276
October 12, 2011	4.381	467.750	2.575	475.535	3.168	453.226
December 12, 2011	2.960	469.171	2.607	475.503	2.560	453.834
February 23, 2012	4.179	467.952	2.508	475.602	2.710	453.684
April 4, 2012	3.833	468.298	2.445	475.665	2.682	453.712
August 28, 2012	4.560	467.571	2.529	475.581	2.750	453.644
October 30, 2012	4.370	467.761	2.600	475.510	1.950	454.444
December 14, 2012	3.756	468.375	2.537	475.573	2.644	453.750
February 22, 2013	4.234	467.897	2.468	475.642	2.684	453.710
April 29, 2013	3.126	469.005	2.367	475.743	1.329	455.065
June 13, 2013	3.591	468.540	2.349	475.761	2.071	454.323
August 19, 2013	3.857	468.274	2.355	475.755	2.574	453.820
October 31, 2013	3.300	468.831	2.384	475.726	2.616	453.778
December 11, 2013	3.830	468.301	2.354	475.756	2.688	453.706
February 12, 2014	5.007	467.124	2.377	475.733	2.783	453.611
April 29, 2014	3.230	468.901	2.362	475.748	1.141	455.253
June 6, 2014	3.998	468.133	2.333	475.777	2.671	453.723
August 18, 2014	4.679	467.452	2.450	475.660	2.678	453.716
October 27, 2014	4.360	467.771	2.510	475.600	2.700	453.694
December 9, 2014	3.795	468.336	2.474	475.636	2.696	453.698
February 25, 2015	4.258	467.873	2.480	475.630	2.974	453.420
April 2, 2015	4.614	467.517	2.480	475.630	2.640	453.754
May 15, 2015	4.180	467.951	2.447	475.663	2.708	453.686
July 15, 2015	3.945	468.186	2.440	475.670	2.708	453.686
May 20, 2022	2.508	470.004	2.547	475.547	2.714	453.663
September 24, 2022	Dry	-	2.631	475.463	3.291	453.086
November 12, 2022	Dry	-	2.702	475.392	3.387	452.990
November 18, 2022	Dry	-	-	-	3.410	452.967
July 7, 2023	2.470	470.042	2.905	475.189	2.667	453.710

**Notes:**

TOC - top of well casing elevation (m)

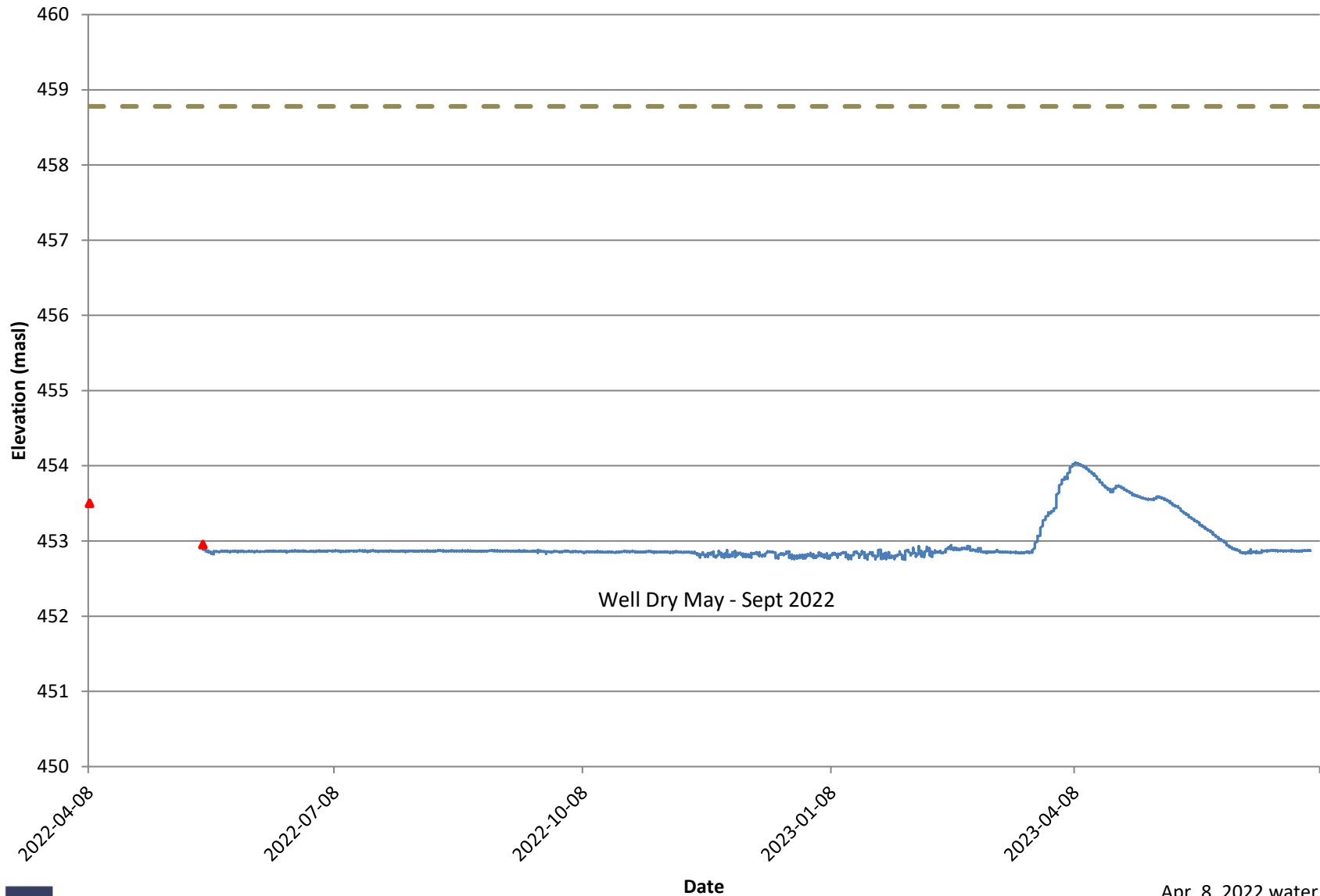
Table 2: Results of Groundwater Quality Analyses - General Chemistry, Organic Parameters and Metals

Sample ID	PWQOs	Detection Limit	Units	BH 4	BH 9	MW 2
Date Sampled				12-Nov-2022	12-Nov-2022	12-Nov-2022
<b>General Chemistry</b>						
conductivity		1.0	µS/cm	954	392	1620
alkalinity, total (as CaCO <sub>3</sub> )		1.0	mg/L	298	241	428
colour, apparent		2.0	CU	658	893	438
hardness (as CaCO <sub>3</sub> ), dissolved		0.50	mg/L	451	220	737
pH	6.5-8.5	0.10	pH units	7.92	8.19	8.42
solids, total dissolved [TDS]		10	mg/L	564	218	898
turbidity		0.10	NTU	>4000	>4000	3190
<b>Anions and Nutrients</b>						
ammonia, total (as N)		0.0050	mg/L	0.0344	0.0176	0.258
chloride		0.50	mg/L	138	2.06	330
fluoride		0.020	mg/L	0.092	0.078	0.394
nitrate (as N)		0.020	mg/L	0.442	0.022	<0.100
nitrite (as N)		0.010	mg/L	<0.010	<0.010	<0.050
phosphate, ortho-, dissolved (as P)		0.0030	mg/L	<0.0030	<0.0030	<0.0030
sulfate (as SO <sub>4</sub> )		0.30	mg/L	22.0	9.91	12.3
<b>Dissolved Metals</b>						
aluminum, dissolved	0.075	0.0010	mg/L	0.0348	0.0287	0.0088
antimony, dissolved	0.02	0.00010	mg/L	<0.00010	<0.00010	0.00023
arsenic, dissolved	0.005	0.00010	mg/L	0.00131	0.00032	0.00080
barium, dissolved		0.00010	mg/L	0.0680	0.0191	0.0431
beryllium, dissolved	1.1	0.000020	mg/L	<0.000020	<0.000020	<0.000020
bismuth, dissolved		0.000050	mg/L	<0.000050	<0.000050	<0.000050
boron, dissolved	0.2	0.010	mg/L	0.013	<0.010	0.152
cadmium, dissolved	0.0005	0.0000050	mg/L	<0.0000050	0.0000122	<0.0000125
calcium, dissolved		0.050	mg/L	97.3	61.0	56.2
cesium, dissolved		0.000010	mg/L	<0.000010	<0.000010	<0.000010
chromium, dissolved		0.00050	mg/L	<0.00050	<0.00050	<0.00050
cobalt, dissolved	0.009	0.00010	mg/L	0.00020	<0.00010	<b>0.00099</b>
copper, dissolved	0.005	0.00020	mg/L	0.00124	0.00235	0.00183
iron, dissolved	0.30	0.010	mg/L	0.029	0.026	<0.010
lead, dissolved	0.005	0.000050	mg/L	0.000093	0.000170	0.000056
lithium, dissolved		0.0010	mg/L	0.0083	<0.0010	0.0029
magnesium, dissolved		0.0050	mg/L	50.6	16.4	145
manganese, dissolved		0.00010	mg/L	0.0185	0.00424	0.132
molybdenum, dissolved	0.04	0.000050	mg/L	0.000752	0.00164	0.0299
nickel, dissolved	0.03	0.00050	mg/L	0.00069	<0.00050	0.00244
phosphorus, dissolved	0.01	0.050	mg/L	<b>&lt;0.050</b>	<b>&lt;0.050</b>	<b>&lt;0.050</b>
potassium, dissolved		0.050	mg/L	1.90	0.737	7.53
rubidium, dissolved		0.00020	mg/L	0.00059	0.00037	0.00050
selenium, dissolved	0.10	0.000050	mg/L	0.000130	0.000084	0.000082
silicon, dissolved		0.050	mg/L	7.88	3.56	4.21
silver, dissolved	0.0001	0.000010	mg/L	<0.000010	<0.000010	<0.000010
sodium, dissolved		0.050	mg/L	24.5	2.34	93.8
strontium, dissolved		0.00020	mg/L	0.226	0.0736	0.452
sulfur, dissolved		0.50	mg/L	7.44	3.30	5.87
tellurium, dissolved		0.00020	mg/L	<0.00020	<0.00020	<0.00020
thallium, dissolved	0.0003	0.000010	mg/L	<0.000010	<0.000010	0.000024
thorium, dissolved		0.00010	mg/L	<0.00010	<0.00010	<0.00010
tin, dissolved		0.00010	mg/L	<0.00010	<0.00010	0.00235
titanium, dissolved		0.00030	mg/L	0.00180	0.00099	<0.00030
tungsten, dissolved	0.03	0.00010	mg/L	<0.00010	0.00062	0.00048
uranium, dissolved	0.005	0.000010	mg/L	0.00157	0.000477	0.000300
vanadium, dissolved	0.006	0.00050	mg/L	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.02	0.0010	mg/L	<0.0010	0.0053	0.0020
zirconium, dissolved	0.004	0.00020	mg/L	<0.00020	<0.00020	<0.00020

1. Criteria are from the Provincial Water Quality Objectives (MECP 1994)
2. Criteria and concentrations are given in units consistent with the units listed for the associated parameter.
3. Concentrations with in red shaded cells and bold text exceed the corresponding criteria.

## **CHARTS**

# MW1



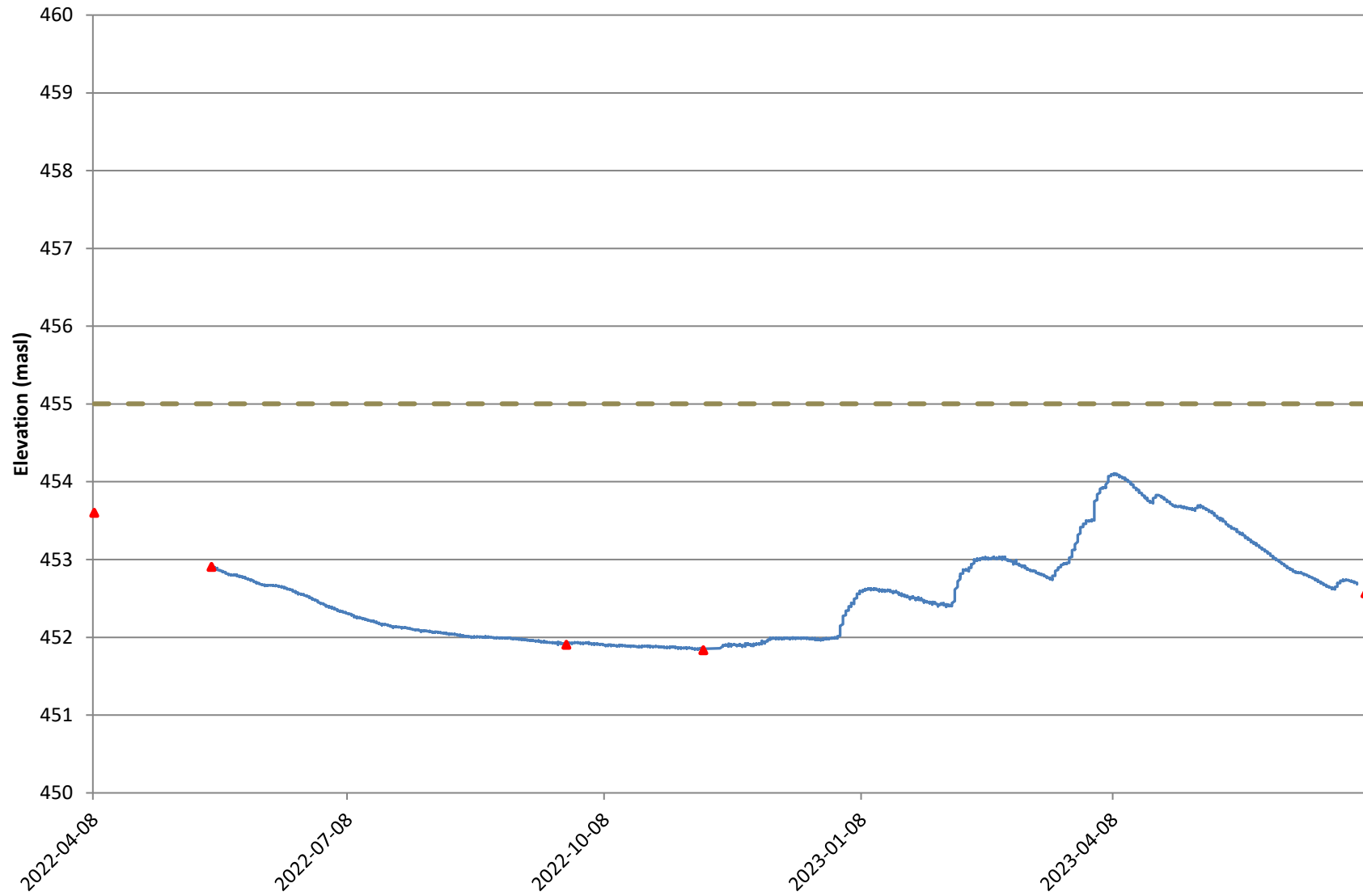
— Groundwater Level

▲ Manual Readings

- - - Ground Surface

Apr. 8, 2022 water level  
by JLP Services Inc.

# MW2



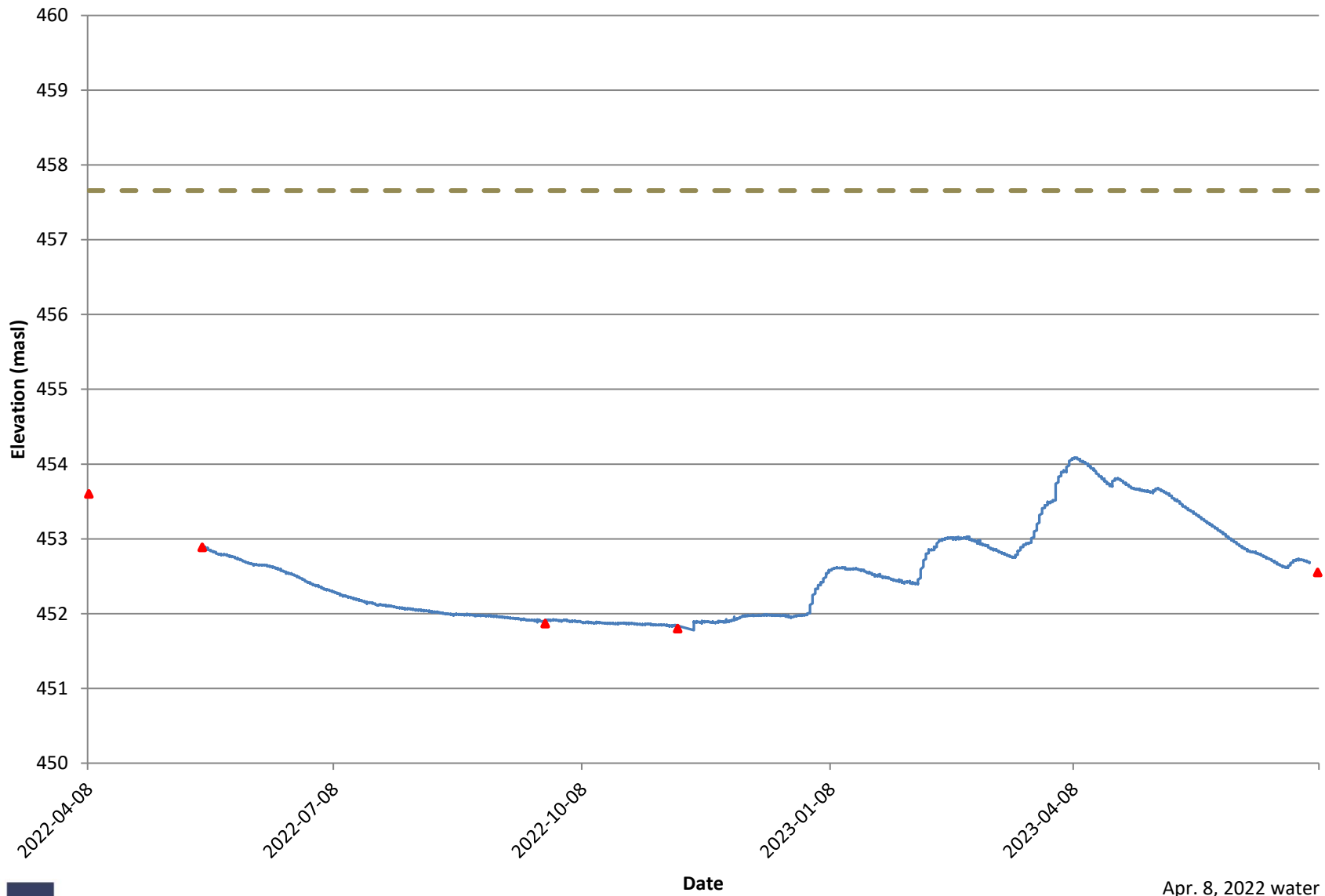
— Groundwater Level

▲ Manual Readings

— Ground Surface

Apr. 8, 2022 water level  
by JLP Services Inc.

# MW3



— Groundwater Level

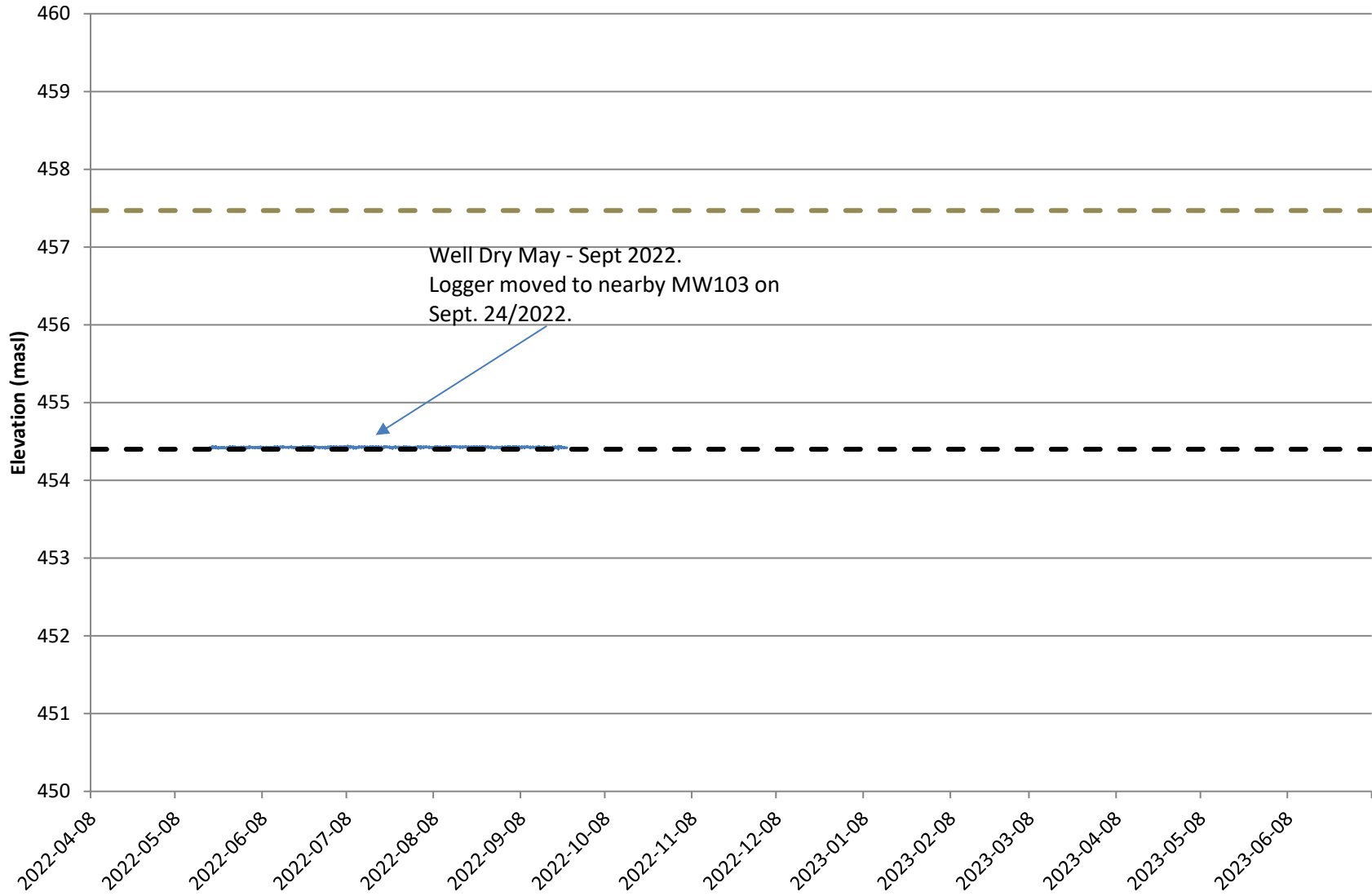
▲ Manual Readings

- - - Ground Surface

Apr. 8, 2022 water level  
by JLP Services Inc.



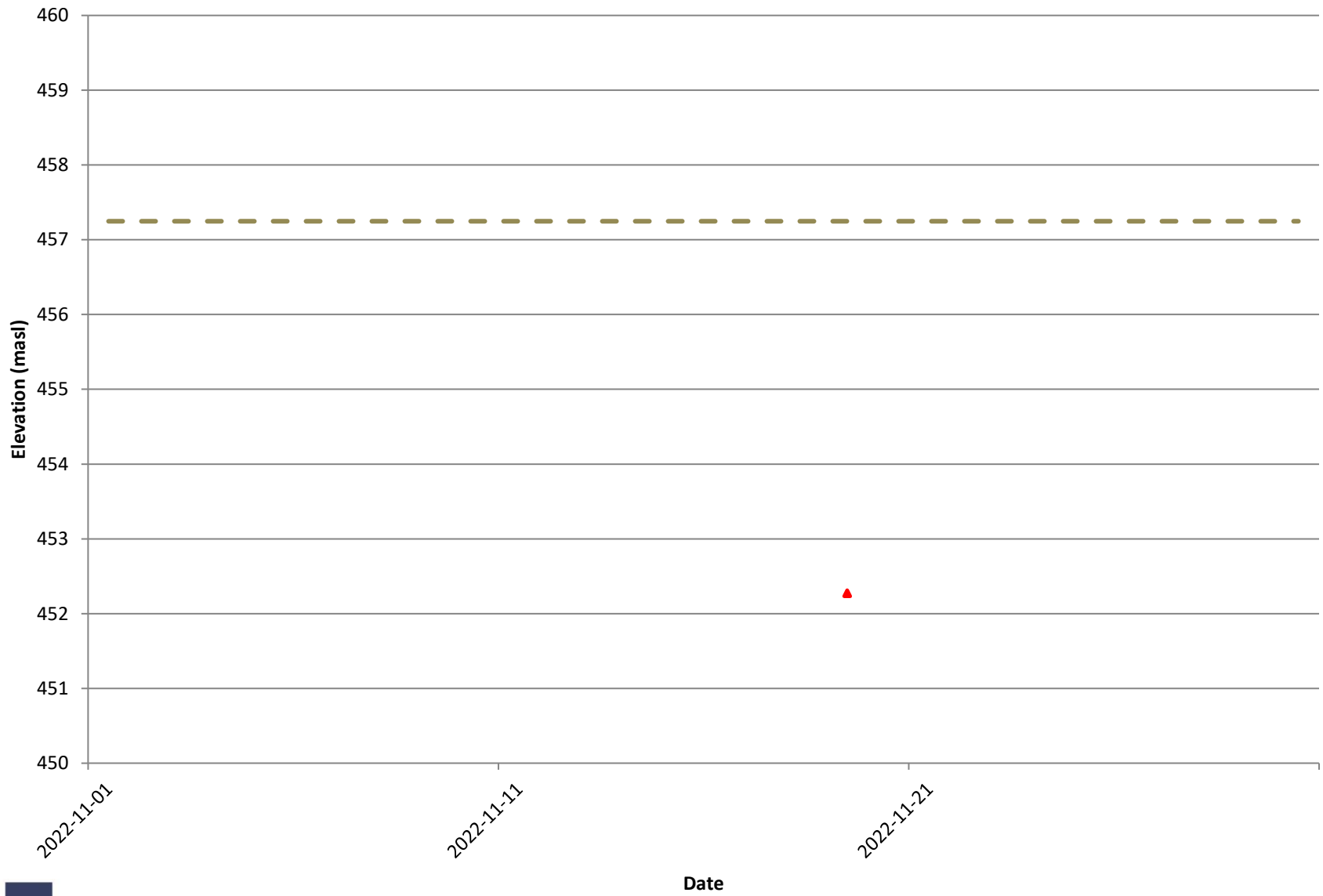
# MW4



**Date**  
— Groundwater Level    ▲ Manual Readings  
— Ground Surface    — Well bottom

Apr. 8, 2022 water level  
by JLP Services Inc. - well  
dry

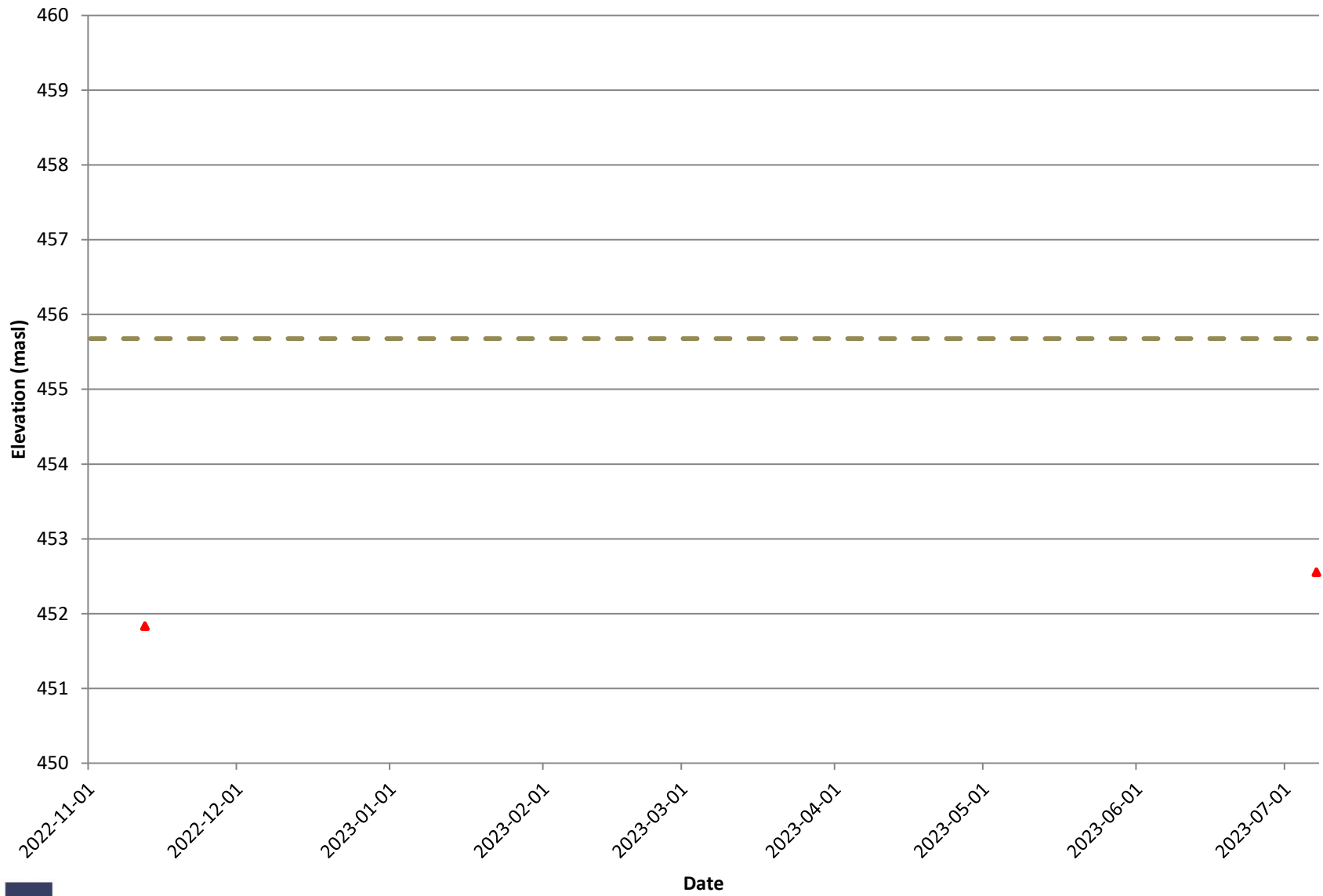
# MW101



▲ Manual Readings

— Ground Surface

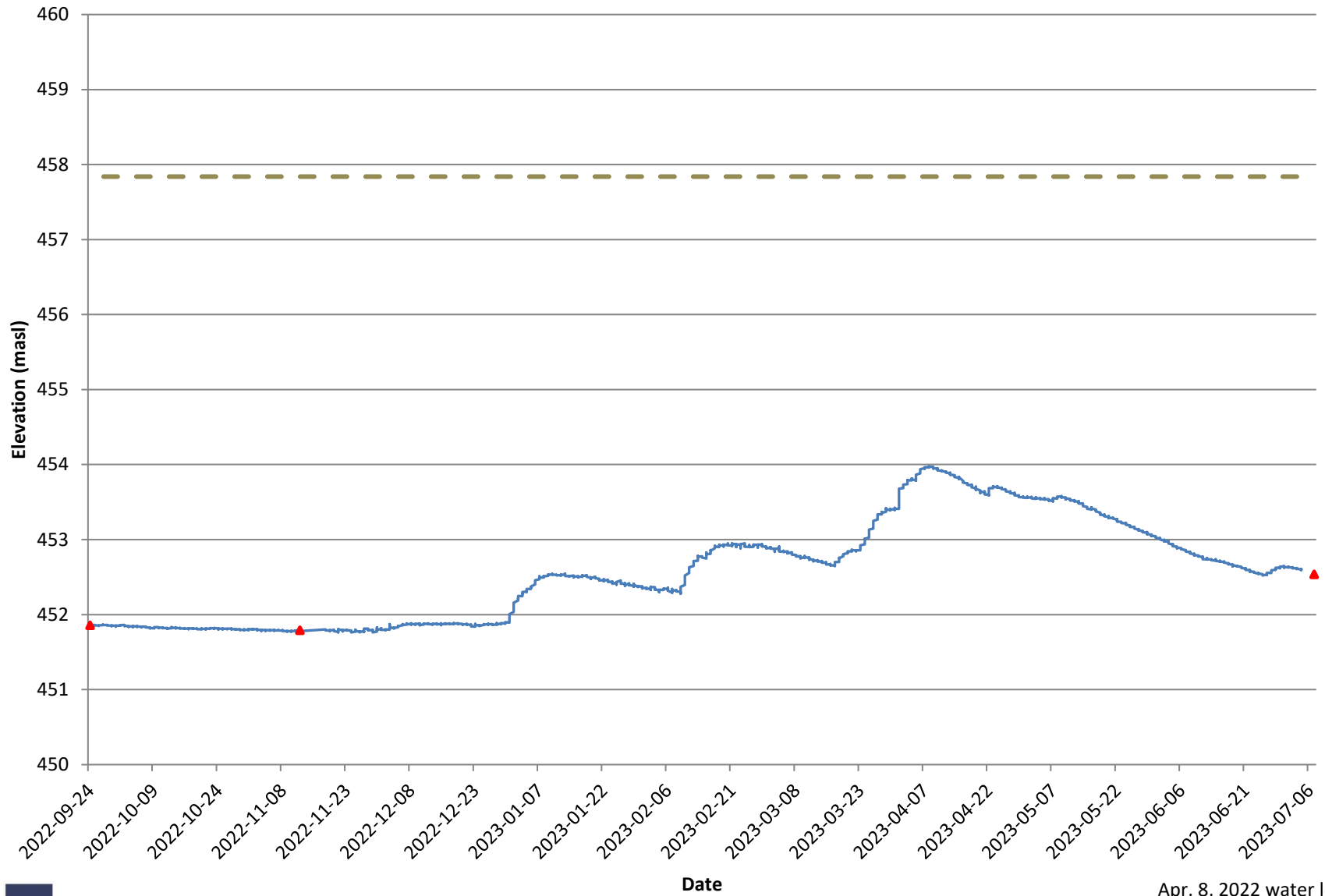
# MW102



▲ Manual Readings

— Ground Surface

# MW103



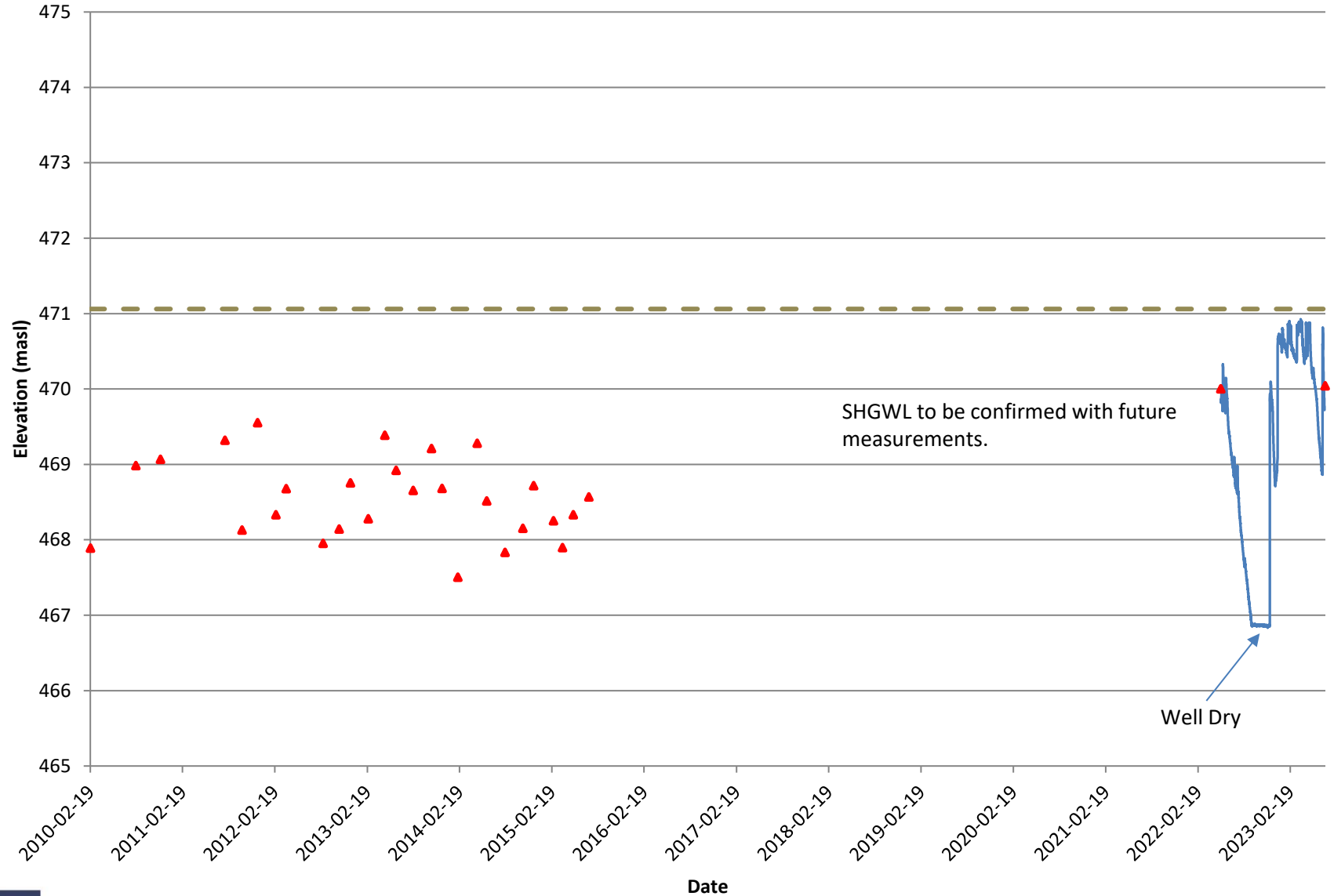
— Groundwater Level

▲ Manual Readings

— Ground Surface

Apr. 8, 2022 water level  
by JLP Services Inc.

# BH3



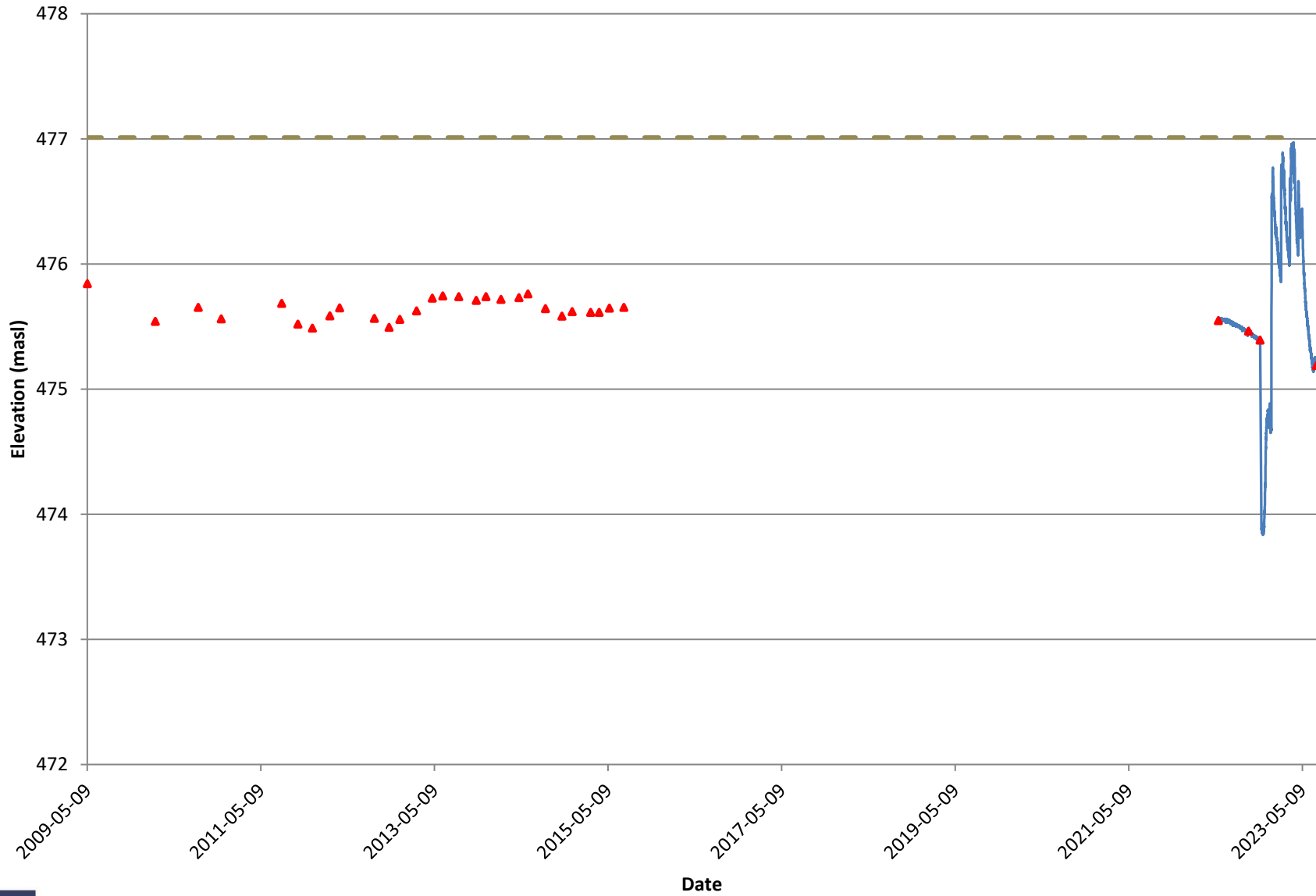
SHGWL to be confirmed with future measurements.

Well Dry

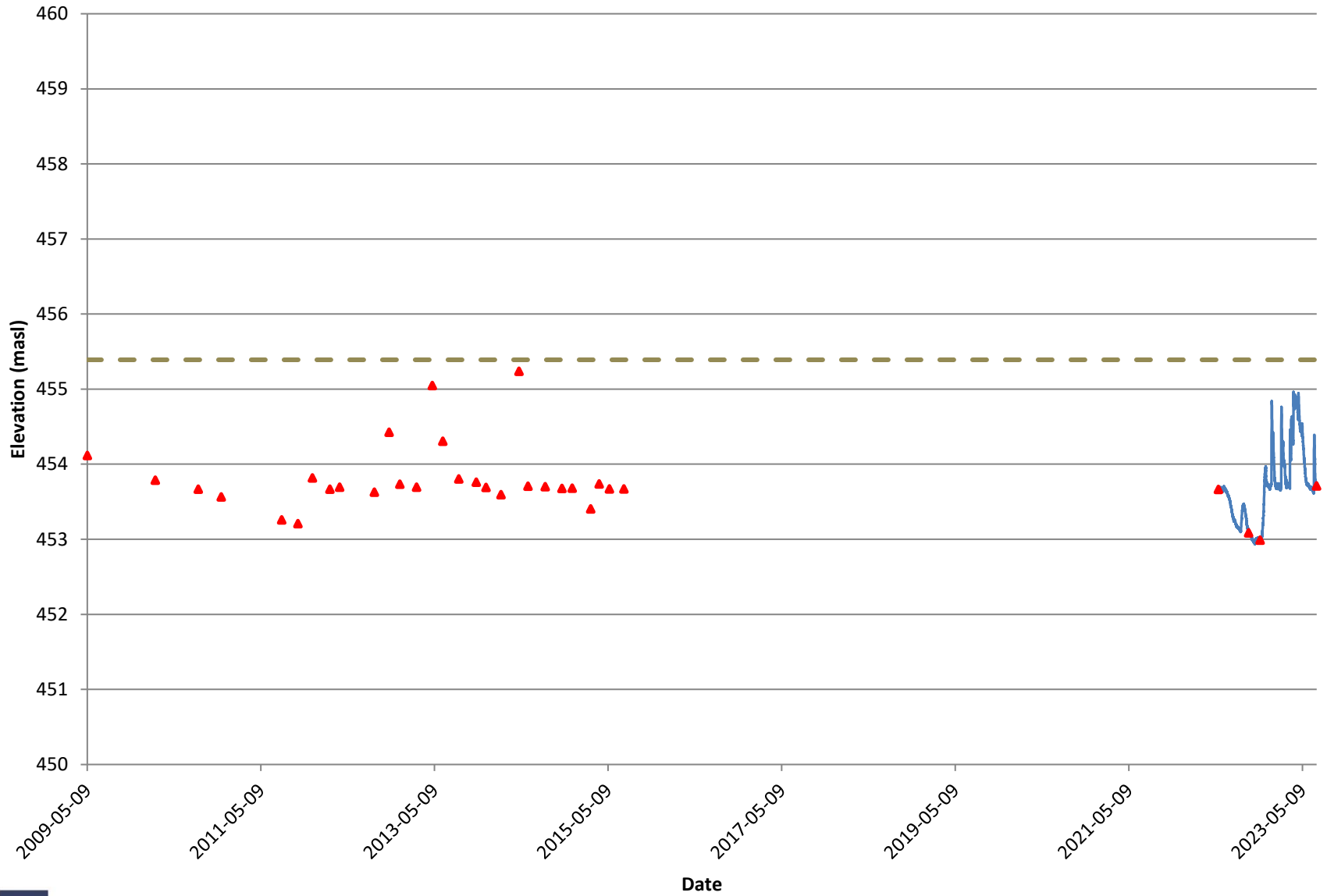


— Groundwater Level    ▲ Manual Readings    - - - Ground Surface

# BH4



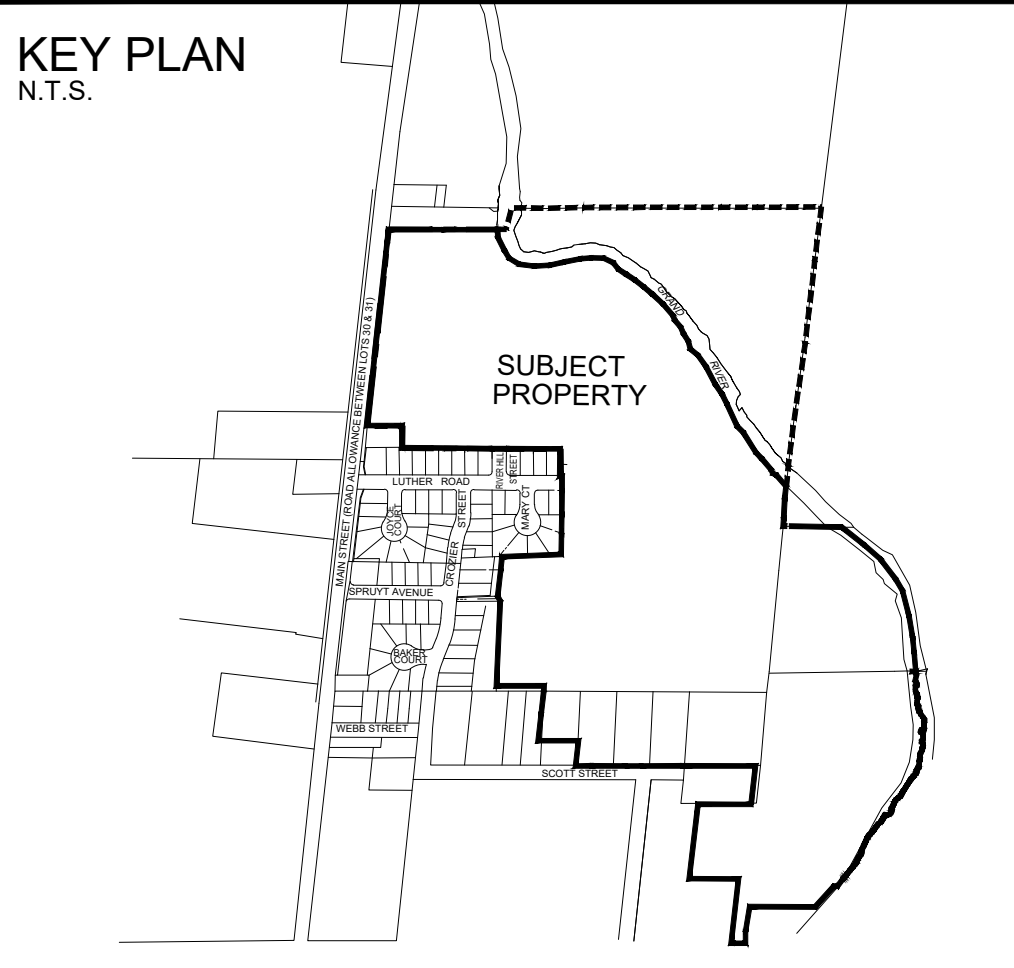
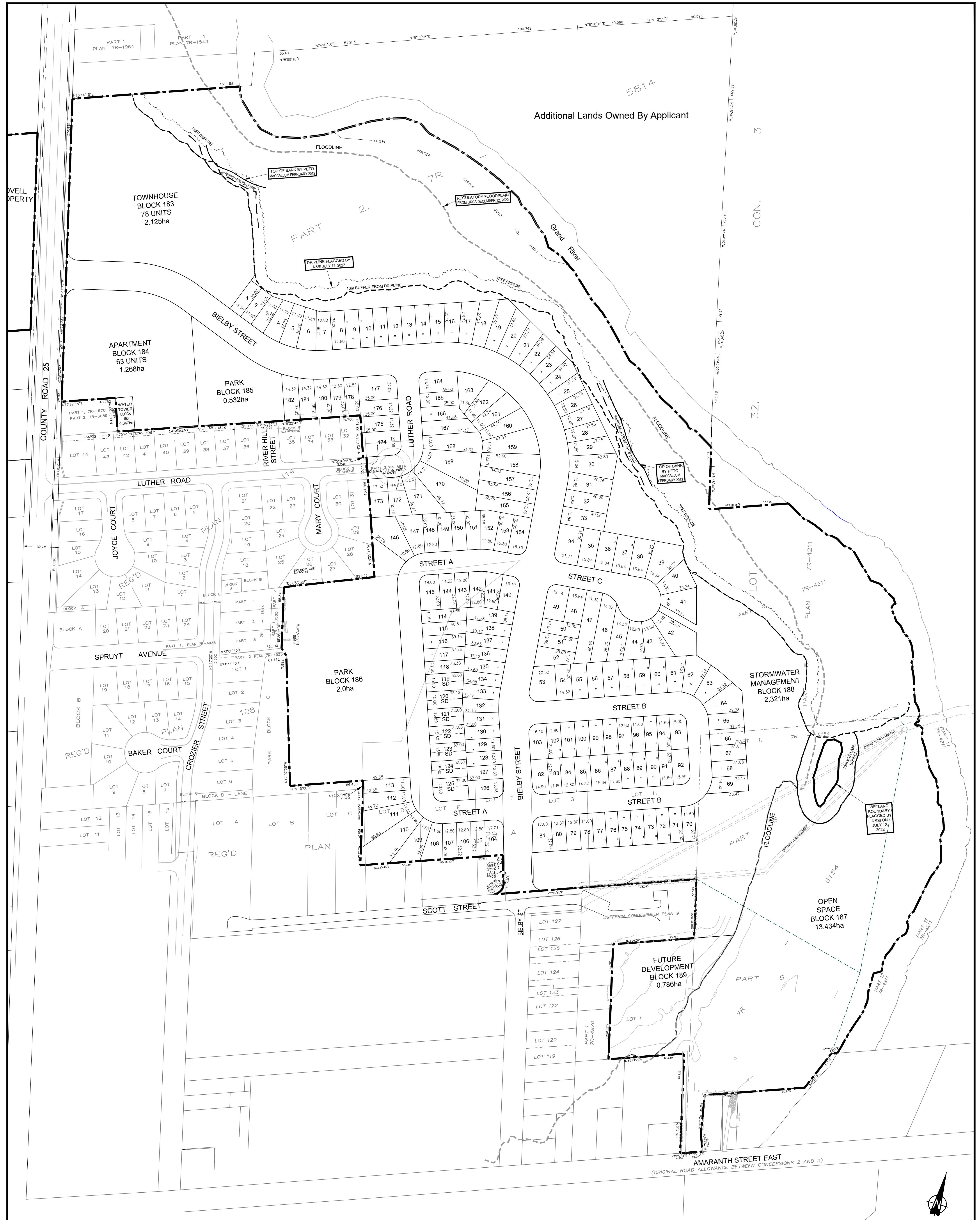
# BH9



— Groundwater Level    ▲ Manual Readings    - - - Ground Surface



**APPENDIX A:  
DRAFT PLAN OF SUBDIVISION**



**LAND USE SCHEDULE**

DESCRIPTION	LOTS/BLOCKS	UNITS	AREA (ha)
SINGLE DETACHED LOTS			9.271
11.6m	1-6, 52, 70-78, 82-83, 87-86, 108-118, 129-139, 160-163	54	
12.8m	7-29, 42-44, 50-51, 79-81, 84, 97-107, 126-128, 140-143, 146-159, 164-168, 178-179	71	
14.32m	40-41, 45-47, 54-69, 85, 144-145, 169-173, 175-176, 180-182	34	
15.84m	30-39, 48-49, 53, 86, 174, 177	16	
SEMI DETACHED	119-125	14	0.373
TOWNHOUSES	183	78	2.125
APARTMENT	184	63	1.268
PARK	185-186		2.532
OPEN SPACE	187		13.434
STORMWATER MANAGEMENT	188		2.321
FUTURE DEVELOPMENT	189		0.786
TO BE ADDED TO WATER TOWER	190		0.047
ROADS			4.425
<b>TOTAL</b>		<b>190</b>	<b>36.583ha</b>

**ADDITIONAL INFORMATION**  
(UNDER SECTION 51(17) OF THE PLANNING ACT)  
INFORMATION REQUIRED BY CLAUSES a,b,c,d,e,f,g,j and l ARE AS SHOWN ON THE DRAFT PLAN.  
h) Municipal water supply  
i) Silt, Clayey Silt Till, Gravel, Gravelly Sand, Sand, Unsubdivided Silt  
k) All sanitary and storm sewers as required

**OWNER'S CERTIFICATE**  
I AUTHORIZE THE GSP GROUP INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

Tom Krizan  
Ariss Glen Developments Limited

DATE

**SURVEYOR'S CERTIFICATE**  
I CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

James. M. Laws  
Ontario Land Surveyor

DATE

# DRAFT PLAN OF SUBDIVISION

## THOMASFIELD HOMES RIVER'S EGDE

PART OF LOT 31, CONCESSION 3  
GEOGRAPHIC TOWNSHIP OF EAST LUTHER  
ALL OF BLOCK C  
REGISTERED PLAN 114  
(VILLAGE OF GRAND VALLEY)  
TOWN OF GRAND VALLEY  
COUNTY OF DUFFERIN

PLANNING | URBAN DESIGN | LANDSCAPE ARCHITECTURE  
gspgroup.ca

Date: August 29, 2023  
Scale: 1:1500 metric

**REVISIONS**

No.	Description

Drawn By: MN  
Project No.: 23048  
Dwg File Name: dp23048a.dwg

**APPENDIX B:  
WATER WELL RECORDS**



UTM 5 R 1545 1892  
 Elev. 58 R 1545  
 Basin Q3V 11  
LOT 32



GROUND WATER BRANCH  
 17 No. 202  
 DEC 1 1958  
 ONTARIO WATER  
 RESOURCES COMMISSION

The Water-well Drillers Act, 1954  
 Department of Mines

# Water-Well Record

County or Territorial District... Wulfrin Township, Village, Town or City... E. Luther  
 Village, Town or City).....  
 address ..... Grand Valley R.R.  
 (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

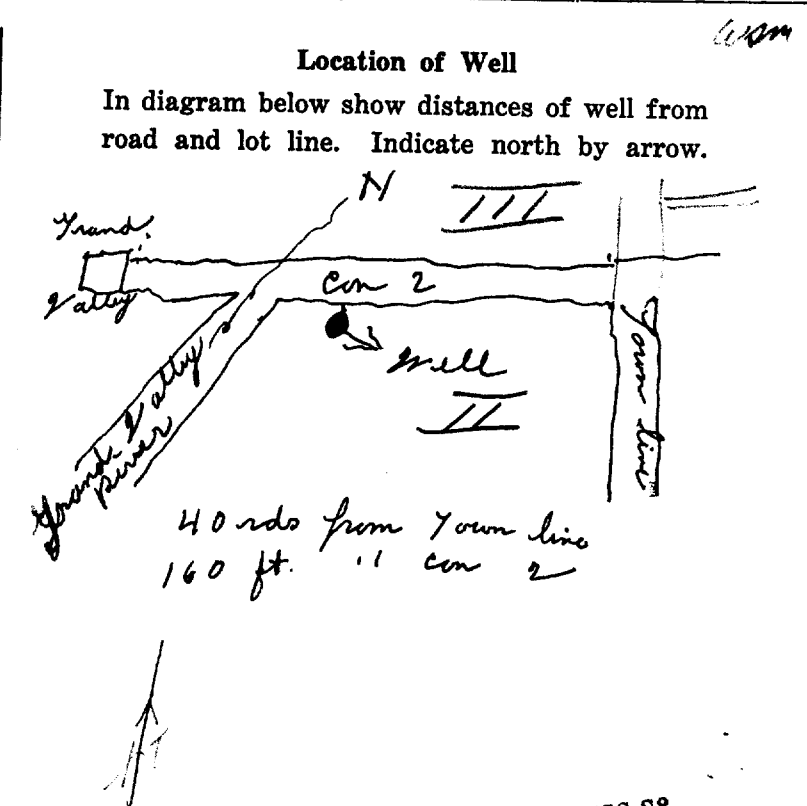
Casing diameter(s) ..... 4 1/2  
 Length(s) ..... 90 ft  
 Type of screen .....  
 Length of screen .....  
 Static level ..... 35 ft  
 Pumping rate ..... 5 g.p.m.  
 Pumping level ..... 7 1/2 ft  
 Duration of test ..... 1 hrs

## Well Log

## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>Clay &amp; stones</u>	<u>0</u>	<u>90</u>			
<u>gray hard rock</u>	<u>90</u>	<u>192</u>	<u>190</u>	<u>145/55</u>	<u>fresh</u>

For what purpose(s) is the water to be used? W & S  
 Is water clear or cloudy?..... clear  
 Is well on upland, in valley, or on hillside?..... hillside  
 Drilling firm Fred J. Davidson  
 Address ..... Wingham  
 Name of Driller Fred Davidson  
 Address ..... Wingham  
 Licence Number..... 72  
 I certify that the foregoing statements of fact are true.  
 Date Nov 24 F. J. Davidson  
 Signature of Licensee



## Map: Well records

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

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700209

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	

<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555103.30 Northing: 4860837.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	GRVL	STNS		0 ft	30 ft
BLUE	CLAY			30 ft	38 ft
GREY	MSND			38 ft	43 ft
GREY	LMSN	SHLE		43 ft	58 ft

BLUE	ROCK			58 ft	93 ft
GREY	LMSN			93 ft	103 ft

### Annular Space/Abandonment Sealing Record

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
4 inch	STEEL		60 ft

4 inch	OPEN HOLE		103 ft
--------	-----------	--	--------

### Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

### Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3628

### Results of Well Yield Testing

<b>After test of well yield, water was</b>	CLEAR
<b>If pumping discontinued, give reason</b>	
<b>Pump intake set at</b>	
<b>Pumping Rate</b>	5 GPM
<b>Duration of Pumping</b>	5 h:0 m
<b>Final water level</b>	12 ft
<b>If flowing give rate</b>	



<b>Recommended pump depth</b>	
<b>Recommended pump rate</b>	
<b>Well Production</b>	PUMP
<b>Disinfected?</b>	

### Draw Down & Recovery

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	FLW		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	

20		20	
25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

**Water Details**

Water Found at Depth	Kind
102 ft	Fresh

**Hole Diameter**

Depth From	Depth To	Diameter


**Audit Number:**

**Date Well Completed:** May 24, 1952

**Date Well Record Received by MOE:** February 03, 1953

## Related

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

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

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

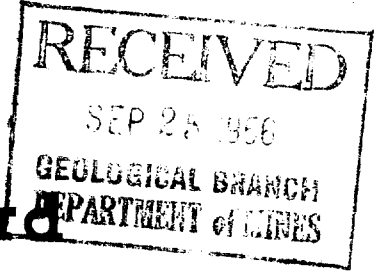
ATM 9 Z 14 E  
9 R 14 N  
 Elev. 9 14 5 4 5  
 Basin 2 3 2



ONTARIO

17 No 210

The Water-well Drillers Act, 1954  
Department of Mines



# Water-Well Record

County or Territorial District Dufferin Township, Village, Town or City E. Luther  
 Village, ~~Town~~ or City) Grand Valley  
 Address Grand Valley  
 (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

Casing diameter (s) 4 1/2 Static level 60 ft  
 Length (s) ..... Pumping rate 8 g.p.m.  
 Type of screen ..... Pumping level 25 ft  
 Length of screen ..... Duration of test .....

## Well Log

## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>dug well</u>	<u>0</u>	<u>26</u>			
<u>gravel</u>	<u>26</u>	<u>42</u>			
<u>hard clay</u>	<u>42</u>	<u>96</u>			
<u>lime rock</u>	<u>96</u>	<u>177</u>	<u>176</u>	<u>111</u>	<u>fresh</u>

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

Is water clear or cloudy? clear

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

Drilling firm Fred L. Warden

Address Wingham

Name of Driller Fred Sturdy

Address Wingham

Licence Number 72

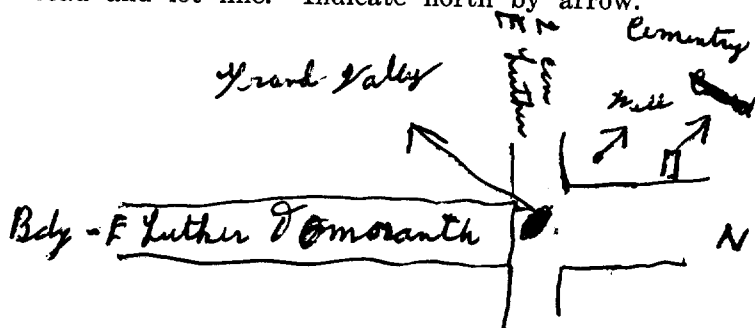
I certify that the foregoing statements of fact are true.

Date Aug 22 Fred L. Warden

Signature of Licensee

## Location of Well

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



65 ft from Rd  
 1/4 mile from cor  
 80 ft South of Cemetery

## Map: Well records

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

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700239

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	

<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555308.30 Northing: 4861174.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	LOAM			0 ft	1 ft
	GRVL			1 ft	40 ft
	LMSN			40 ft	95 ft

### Annular Space/Abandonment Sealing Record

--	--	--	--	--

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
4 inch	STEEL		40 ft
4 inch	OPEN HOLE		95 ft

### Construction Record - Screen

Outside	Material	Depth	Depth

Diameter		From	To

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 4918

## Results of Well Yield Testing

<b>After test of well yield, water was</b>	CLEAR
<b>If pumping discontinued, give reason</b>	
<b>Pump intake set at</b>	
<b>Pumping Rate</b>	30 GPM
<b>Duration of Pumping</b>	0 h:30 m
<b>Final water level</b>	29 ft
<b>If flowing give rate</b>	
<b>Recommended pump depth</b>	
<b>Recommended pump rate</b>	
<b>Well Production</b>	PUMP



<b>Disinfected?</b>		
---------------------	--	--

**Draw Down & Recovery**

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	23 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	

40		40	
45		45	
50		50	
60		60	

**Water Details**

Water Found at Depth	Kind
95 ft	Fresh

**Hole Diameter**

Depth From	Depth To	Diameter

**Audit Number:**

**Date Well Completed:** July 15, 1948

**Date Well Record Received by MOE:** June 08, 1950

## Related

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

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

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

UTM    Z    E  
9 R    N  
 Elev. 9 R 1500  
 Basin 23   



ONTARIO

The Well Drillers Act  
 Department of Mines, Province of Ontario

17 No 249

**RECEIVED**

AUG 8 1950

GEOLOGICAL BRANCH  
 DEPARTMENT OF MINES

# Water Well Record

County or District Wufferin To East Lether In village of Grand Valley  
 Con. Lot. Pt. Lot. Acres  
Grand Valley Acres  
 (including pump)

## Pipe and Casing Record

## Pumping Test

Casing diameter(s) <u>4 in</u>	Date <u>July 10/50</u>
Length(s) of casing(s) <u>56 ft</u>	Developed Capacity
Length of screen	Duration of Test
Type of screen	Pumping Rate
Type of pump	Drawdown
Capacity of pump	Static level of completed well <u>15 ft from top</u>
Depth of pump setting	Is well a gravel-wall type? <u>Rock</u>

## Water Record

Kind (fresh or mineral) <u>Fresh</u>	Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
Quality (hard, soft, contains iron, sulphur etc.)			
Appearance (clear, cloudy, coloured) <u>Clear</u>			
For what purpose(s) is the water to be used? <u>for domestic use of house in town</u>			
How far is well from possible source of contamination? <u>100 ft</u>			
What is source of contamination? <u>small stream from rain</u>			
Enclose a copy of any mineral analysis that has been made of water			

## Well Log

### Drift and Bedrock Record

From To

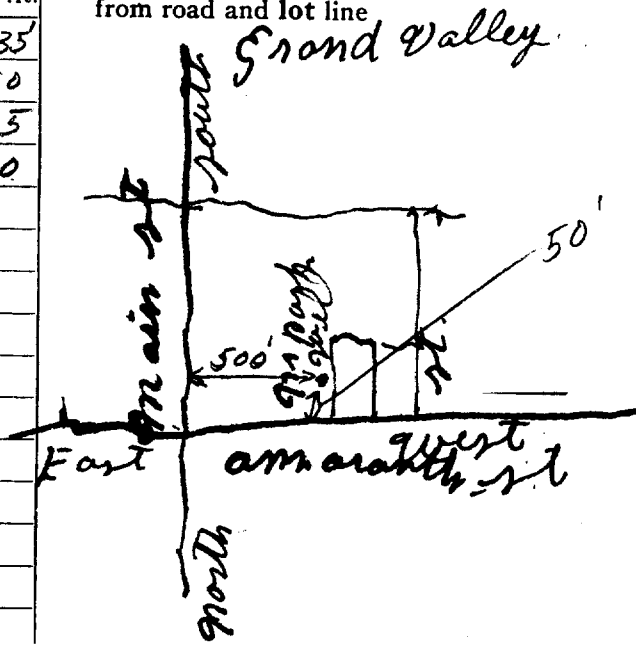
0 ft. ....ft.

<u>Hard Pan and Balders</u>	25	35	
<u>sand and gravel</u>	55	50	
<u>Blue Rock</u>	65	75	
<u>lime stone</u>	75	90	

Line 18 low good  
 18 ft  
 25-27  
 1 1/2 ft  
 Grand Pan  
 well  
 top  
 water level

### Location of Well

In diagram below show distances of well from road and lot line



Situation: Is well on upland, in valley, or on hillside? Hill side

Drilling Firm At any Amartin

Address Grand Valley

Recorded by H Amartin Address Grand Valley Ont

Date Aug 5th 1950 Licence Number 170











## Map: Well records

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

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700246

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	

<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555118.30 Northing: 4860827.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	GRVL	BLDR		0 ft	20 ft
BLUE	ROCK			20 ft	55 ft
	LMSN			55 ft	67 ft

### Annular Space/Abandonment Sealing Record

--	--	--	--	--

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
5 inch	STEEL		25 ft
5 inch	OPEN HOLE		67 ft

### Construction Record - Screen

Outside	Material	Depth	Depth

Diameter		From	To

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3628

## Results of Well Yield Testing

<b>After test of well yield, water was</b>	CLEAR
<b>If pumping discontinued, give reason</b>	
<b>Pump intake set at</b>	
<b>Pumping Rate</b>	
<b>Duration of Pumping</b>	
<b>Final water level</b>	0 ft
<b>If flowing give rate</b>	
<b>Recommended pump depth</b>	
<b>Recommended pump rate</b>	
<b>Well Production</b>	PUMP



<b>Disinfected?</b>		
---------------------	--	--

**Draw Down & Recovery**

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	-2 ft FLW		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	

40		40	
45		45	
50		50	
60		60	

**Water Details**

Water Found at Depth	Kind
	Fresh

**Hole Diameter**

Depth From	Depth To	Diameter

**Audit Number:**

**Date Well Completed:** May 25, 1951

**Date Well Record Received by MOE:** August 07, 1951

## Related

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

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

Updated: October 18, 2021

Published: March 20, 2014

## Map: Well records

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---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700247

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	



<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555143.30 Northing: 4860827.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	STNS	BLDR		0 ft	22 ft
BLUE	ROCK			22 ft	50 ft
	LMSN			50 ft	65 ft

### Annular Space/Abandonment Sealing Record

--	--	--	--	--

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
4 inch	STEEL		27 ft
4 inch	OPEN HOLE		65 ft

### Construction Record - Screen

Outside	Material	Depth	Depth

Diameter		From	To

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3628

## Results of Well Yield Testing

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

<b>Disinfected?</b>	
---------------------	--

**Draw Down & Recovery**

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	-4 ft FLW		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	



40		40	
45		45	
50		50	
60		60	

### Water Details

Water Found at Depth	Kind
60 ft	Fresh

### Hole Diameter

Depth From	Depth To	Diameter

**Audit Number:**

**Date Well Completed:** July 04, 1951

**Date Well Record Received by MOE:** August 07, 1951

## Related

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

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

Updated: October 18, 2021

Published: March 20, 2014

## Map: Well records

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700248

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	

<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555022.30 Northing: 4860821.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	STNS	GRVL		0 ft	30 ft
	ROCK			30 ft	45 ft
	ROCK			45 ft	72 ft

### Annular Space/Abandonment Sealing Record

--	--	--	--	--

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
4 inch	STEEL		45 ft
4 inch	OPEN HOLE		72 ft

### Construction Record - Screen

Outside	Material	Depth	Depth



Diameter		From	To

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3628

## Results of Well Yield Testing

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

<b>Disinfected?</b>	
---------------------	--

**Draw Down & Recovery**

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	9 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	

40		40	
45		45	
50		50	
60		60	

### Water Details

Water Found at Depth	Kind	
70 ft	Fresh	

### Hole Diameter

Depth From	Depth To	Diameter	

**Audit Number:**

**Date Well Completed:** October 15, 1951

**Date Well Record Received by MOE:** February 12, 1952

## Related

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

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

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

## Map: Well records

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

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 1700249

Well Audit Number:

Well Tag Number:

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	GRAND VALLEY VILLAGE
<b>Lot</b>	
<b>Concession</b>	



<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555007.30 Northing: 4860997.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>
	CLAY	STNS		0 ft	20 ft
	GRVL			20 ft	40 ft
	MSND			40 ft	50 ft
YLLW	ROCK			50 ft	60 ft

GREY	ROCK			60 ft	90 ft
------	------	--	--	-------	-------

### Annular Space/Abandonment Sealing Record

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

### Method of Construction & Well Use

Method of Construction	Well Use
Cable Tool	
	Domestic

### Status of Well

Water Supply

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
4 inch	STEEL		65 ft
4 inch	OPEN HOLE		90 ft

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3628

## Results of Well Yield Testing

<b>After test of well yield, water was</b>	
<b>If pumping discontinued, give reason</b>	
<b>Pump intake set at</b>	
<b>Pumping Rate</b>	
<b>Duration of Pumping</b>	
<b>Final water level</b>	
<b>If flowing give rate</b>	
<b>Recommended pump depth</b>	

<b>Recommended pump rate</b>	
<b>Well Production</b>	
<b>Disinfected?</b>	

**Draw Down & Recovery**

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL	18 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	

25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

**Water Details**

<b>Water Found at Depth</b>	<b>Kind</b>
89 ft	Fresh

**Hole Diameter**

<b>Depth From</b>	<b>Depth To</b>	<b>Diameter</b>


**Audit Number:**

**Date Well Completed:** January 20, 1952

**Date Well Record Received by MOE:** February 12, 1952

## Related

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

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

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





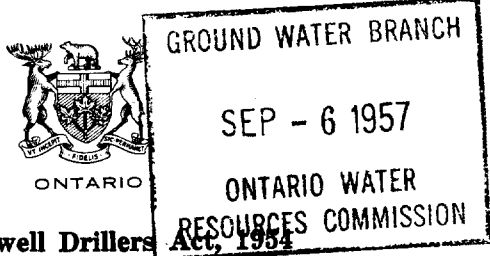








UT 9 Z 1505 E  
 Elev. 9 R 1505 N  
 Basin 23



17 No 260

The Water-well Drillers  
 Department of Mines

# Water-Well Record

*Grand Valley*  
~~East Valley~~

County or Territorial District DUFFERIN Township, Village, Town or City GRAND VALLEY  
 Con. Lot Street and Number (if in Village, Town or City)  
 Owner Grand Valley High School Address  
 Date completed 26 JULY 1957  
 (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

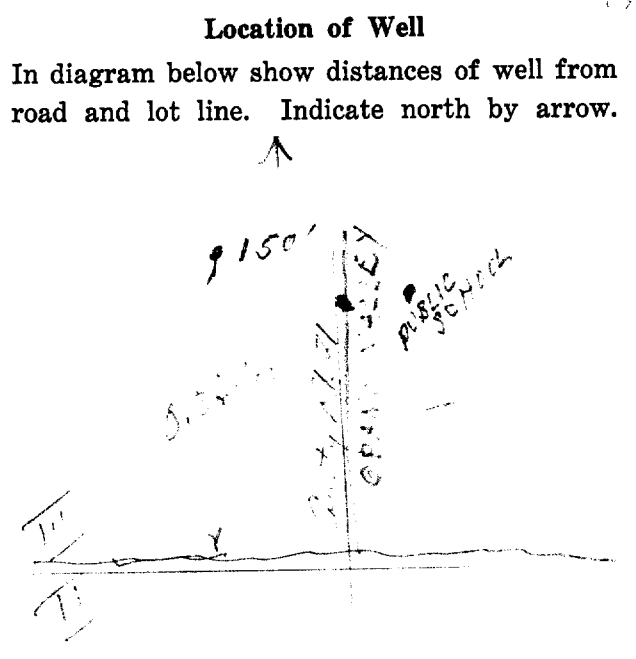
Casing diameter(s) 4" Static level 45'  
 Length(s) 5 - 100 Pumping rate 10 GAL. PER MIN.  
 Type of screen Pumping level 62'  
 Length of screen Duration of test 3 HRS.

## Well Log

## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
CLAY BOULDERS					
GRAVEL	0	93			
LIMESTONE	93	180	180	135	FRESH

For what purpose(s) is the water to be used?  
GRAND VALLEY HIGH SCHOOL  
 Is water clear or cloudy? CLEAR  
 Is well on upland, in valley, or on hillside? UPLAND  
 Drilling firm QUINCY & FORT  
 Address 560 RA  
 Name of Driller QUINCY & FORT  
 Address 560 RA  
 Licence Number 10000  
 I certify that the foregoing statements of fact are true.  
 Date 26/7/57 Quincy & Fort  
 Signature of Licensee









GROUND WATER BRANCH  
 17 MAY No 1958 264  
 ONTARIO WATER RESOURCES COMMISSION



UTM 9R 1485  
 Elev. 9R 1485  
 Basin g3

The Water-well Drillers Act, 1954  
 Department of Mines

# Water-Well Record

VALLEY

ip, Village, Town or City GRAND  
 Village, Town or City) VILLAGE  
 Address GRAND VALLEY  
 Owner J. Cudney  
 Date completed FRIDAY 18 April 1958  
 (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

Casing diameter(s) 4 inch  
 Length(s) 2  
 Type of screen  
 Length of screen

Static level flowing well  
 Pumping rate 10 gallons per minute  
 Pumping level  
 Duration of test 1 Hour

## Well Log

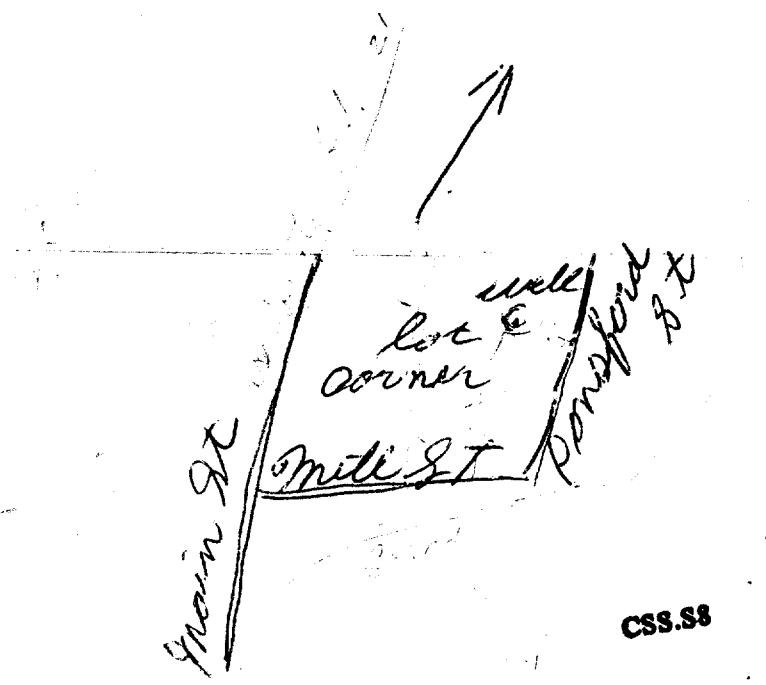
## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>Brown clay with stone</u>	<u>0 ft</u>	<u>25</u>	<u>65</u>	<u>65</u>	<u>Fresh</u>
<u>Hard Gray limestone</u>	<u>25 ft</u>	<u>65</u>			

For what purpose(s) is the water to be used?  
 Is water clear or cloudy? Clear  
 Is well on upland, in valley, or on hillside?  
 Drilling firm J. Cudney  
 Address Salem Ont  
 Name of Driller J. Cudney  
 Address Salem  
 Licence Number.....

## Location of Well

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



I certify that the foregoing statements of fact are true.

Date April 18 1958 John Cudney  
 Signature of Licensee

UTM 9 Z 1515  
 Elev. 9 R 1515  
 Basin 93 1515



GROUND WATER BOARD  
 17 No 270  
 X

The Ontario Water Resources Commission Act, 1957

# WATER WELL RECORD

County or District Clifford Township, Village, Town or City Grand Valley  
 completed 25 March 1960  
 (day month year)  
 Address Grand Valley

## Casing and Screen Record

Inside diameter of casing 4"  
 Total length of casing 42'  
 Type of screen none used  
 Length of screen none used  
 Depth to top of screen                       
 Diameter of finished hole 4"

## Pumping Test

Static level 11'  
 Test-pumping rate 8 G.P.M.  
 Pumping level 11' 3"  
 Duration of test pumping 3 hrs  
 Water clear or cloudy at end of test clear  
 Recommended pumping rate 8 G.P.M.  
 with pumping level of 11'

## Well Log

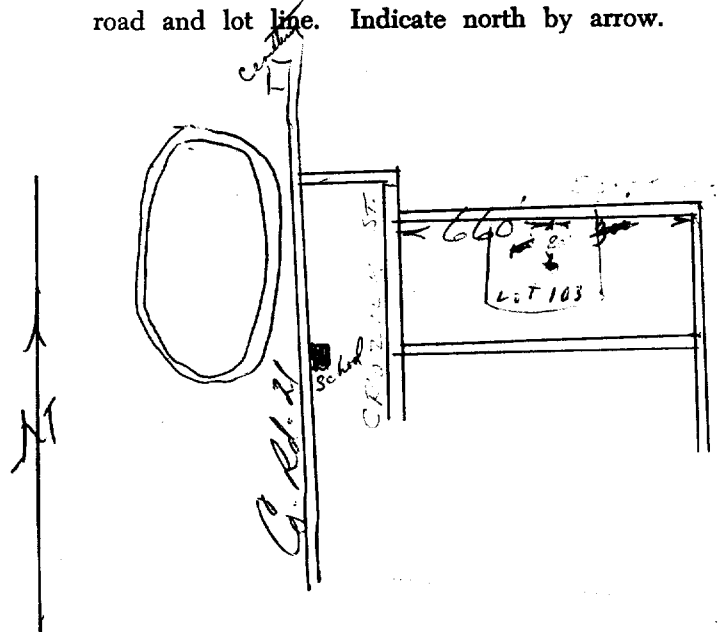
## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
<u>Gravel</u>	<u>0</u>	<u>30</u>	<u>154</u>	<u>143'</u>	<u>fresh</u>
<u>hard pan</u>	<u>30</u>	<u>38</u>			
<u>Brown shale</u>	<u>38</u>	<u>42</u>			
<u>gray lime</u>	<u>42</u>	<u>106</u>			
<u>white lime</u>	<u>106</u>	<u>155</u>			

For what purpose(s) is the water to be used?  
Domestic  
 Is well on upland, in valley, or on hillside? upland  
 Drilling Firm R. H. Gadke  
 Address Clifford  
 Licence Number 688  
 Name of Driller same  
 Address                       
 Date                       
R. H. Gadke  
 (Signature of Licensed Drilling Contractor)

## Location of Well

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



21/12  
FEB 11



ONTARIO WATER RESOURCES COMMISSION Act

# WATER WELL RECORD

LOT 14 AND 15  
No. 17  
PLAN 197  
~~AMARANTH ST~~

UTM: Z *9* *99999999* E  
Elev. *9* R  
Basin: *BUFFALO*  
County or District: ~~WELLINGTON~~  
Con. *1* Lot *5*

Township, Village, Town or City: *Grand Valley*  
Date completed: *2* (day) *7* (month) *1963* (year)  
Address: *GRAND VALLEY*

### Casing and Screen Record

Inside diameter of casing: *4 3/16*  
Total length of casing: *28*  
Type of screen: *-*  
Length of screen: *-*  
Depth to top of screen: *-*  
Diameter of finished hole: *4"*

### Pumping Test

Static level: *4'*  
Test-pumping rate: *8* G.P.M.  
Pumping level: *20'*  
Duration of test pumping: *2 hrs*  
Water clear or cloudy at end of test: *Clear*  
Recommended pumping rate: *8* G.P.M.  
with pump setting of *25'* feet below ground surface

### Well Log

#### Overburden and Bedrock Record

### Water Record

	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<i>Dug well Tiled</i>	<i>0</i>	<i>20</i>	<i>50-60</i>	<i>Fresh</i>
<i>Gravelly Clay</i>	<i>20</i>	<i>30</i>		
<i>Hard Brown limestone</i>	<i>30</i>	<i>60</i>		

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

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

Drilling or Boring Firm: *Chas Smith*

Address: *31 Wellington St. Orangeth*

Licence Number: *853*

Name of Driller or Borer: *Chas Smith*

Address: *31 Wellington St.*

Date: *Feb. 9 1963* *Orangeth*

(Signature of Licensed Drilling or Boring Contractor)

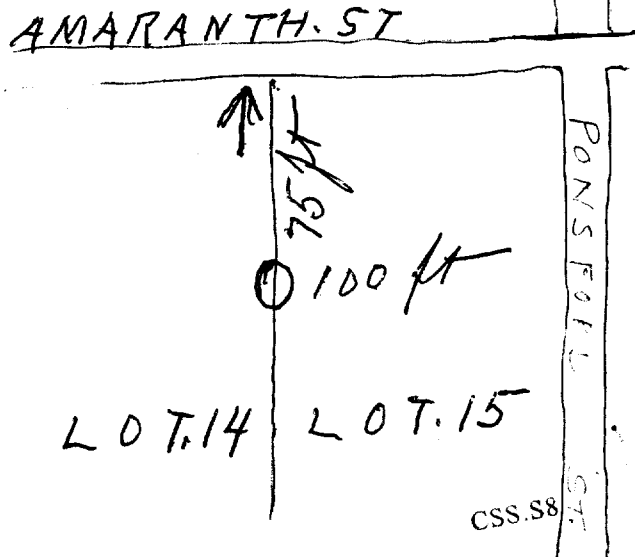
Form 7 15M Sets 60-5930

OWRC COPY

*PLAN-197*  
*10-14*

### Location of Well

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



UTM 9 Z 9999999 E  
9 R 9999999 N  
 Elev. 9 R 9



GROUND WATER BRANCH  
 NOV 19 1963 No. 277  
 ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin Dufferin Township, Village, Town or City Grand Valley  
 County or District Dufferin Date completed 4 10 63  
 (day month year)  
 Con. [redacted] Lot 3 plan 09A Address Grand Valley

### Casing and Screen Record

Inside diameter of casing 4 1/4  
 Total length of casing 86  
 Type of screen  
 Length of screen  
 Depth to top of screen  
 Diameter of finished hole 4 1/4

### Pumping Test

Static level 60 feet  
 Test-pumping rate 12 G.P.M.  
 Pumping level 65 feet  
 Duration of test pumping 2 hours  
 Water clear or cloudy at end of test clear  
 Recommended pumping rate 12 G.P.M.  
 with pump setting of 70 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	Kind of water (fresh, salty, sulphur)
<u>Sandy Clay</u>	<u>0</u>	<u>35</u>		<u>fresh</u>
<u>Stoney yellow Clay</u>	<u>35</u>	<u>80</u>		
<u>gray lime stone</u>	<u>80</u>	<u>144</u>	<u>140</u>	

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

Domestic

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

upland

Drilling or Boring Firm

John Cudney

Address

Salem ont

Licence Number

869

Name of Driller or Borer

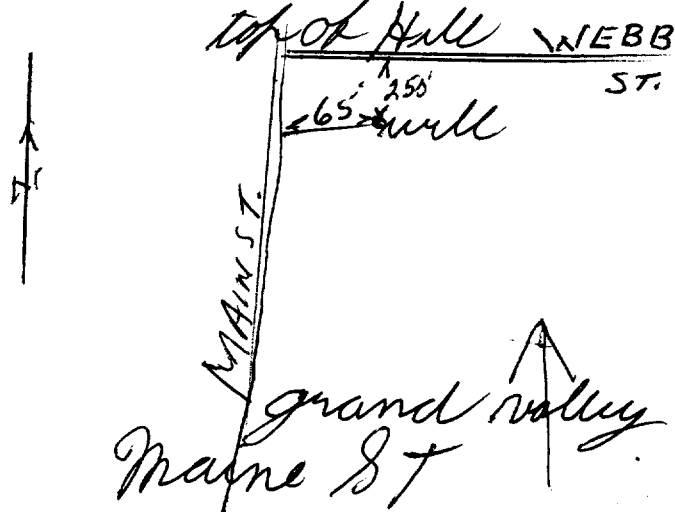
Address

Date

John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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







GROUND WATER BRANCH  
 NOV 17 1963  
 ONTARIO WATER RESOURCES COMMISSION

278  
 X

UTM 58R 1520  
 Elev 58R

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 Dufferin Township, Village, Town or City GRAND VALLEY  
 County or District \_\_\_\_\_ Date completed 15 10 63  
 (day month year)  
 Con \_\_\_\_\_ Lot \_\_\_\_\_ Address GRAND VALLEY

### Casing and Screen Record

Inside diameter of casing 4 1/4  
 Total length of casing 66  
 Type of screen \_\_\_\_\_  
 Length of screen \_\_\_\_\_  
 Depth to top of screen \_\_\_\_\_  
 Diameter of finished hole 4 1/4

### Pumping Test

Static level 39 feet  
 Test-pumping rate \_\_\_\_\_ G.P.M.  
 Pumping level 50 feet  
 Duration of test pumping 4 Hours  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 10 G.P.M.  
 with pump setting of 50 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>grey clay large stones</u>	<u>0</u>	<u>60</u>	<u>125</u>	<u>fresh</u>
<u>gray lime stone</u>	<u>60</u>	<u>125</u>		

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

Domestic

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

Hillside

Drilling or Boring Firm

JOHN N. CUDNEY

Address

SALEM ONT

Licence Number

869

Name of Driller or Borer

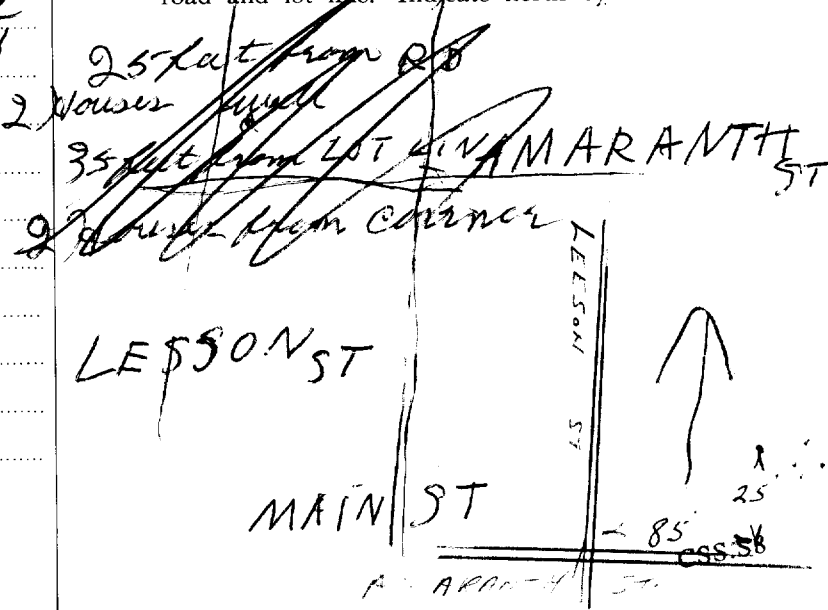
Address

Date

at 15/63  
John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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





WATER RESOURCES DIVISION  
 A17 24 N<sup>o</sup> 365  
 284  
 ONTARIO WATER RESOURCES COMMISSION

UTM [ ] Z [ ] E [ ]

59 R [ ] N [ ]  
 Elev 59 R 1515

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 Dufferin Township, Village, Town, City *Grand Valley*  
 County or District  
 Con. ~~GIER ST~~ Lot ~~65 and 64~~ Date completed 3<sup>rd</sup> July 1966  
 Address *PETROLIA, ONT.*

### Casing and Screen Record

Inside diameter of casing *4 1/4*  
 Total length of casing *22 feet*  
 Type of screen *-*  
 Length of screen *-*  
 Depth to top of screen *-*  
 Diameter of finished hole *4 1/4*

### Pumping Test

Static level *9 feet*  
 Test-pumping rate *12* G.P.M.  
 Pumping level *35 feet*  
 Duration of test pumping *4 Hours*  
 Water clear or cloudy at end of test *Clear*  
 Recommended pumping rate *12* G.P.M.  
 with pump setting of *35* feet below ground surface

### Well Log

### Water Record

#### Overburden and Bedrock Record

	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<i>gravel with large stones</i>	<i>0</i>	<i>39</i>	<i>75-</i>	<i>fresh</i>
<i>gray lime stone</i>	<i>39</i>	<i>75-</i>		

For what purpose(s) is the water to be used? *Domestic*  
 Is well on upland, in valley, or on hillside? *valley*  
 Drilling or Boring Firm *John Cudney*  
 Address *Salem ont*  
 Licence Number *1577*  
 Name of Driller or Borer  
 Address  
 Date *July 5-1965*  
*John Cudney*  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



UTM 52 R 1550 N



WATER RESOURCES DISTRICT 17 No. 285  
DEC 30 1965

The Ontario Water Resources Commission Act

Elev. 52 R 1550

# WATER WELL RECORD

Basin 23 | DUFFERIN

Township, Village, Town or City GRAND VALLEY

Con. Lot Date completed 14 Dec 1965  
(day month year)

Address GRAND VALLEY

### Casing and Screen Record

Inside diameter of casing 4"  
Total length of casing 80'  
Type of screen -  
Length of screen -  
Depth to top of screen -  
Diameter of finished hole 4"

### Pumping Test

Static level 50  
Test-pumping rate 5 G.P.M.  
Pumping level 100  
Duration of test pumping 2 HRS.  
Water clear or cloudy at end of test CLEAR  
Recommended pumping rate 3 G.P.M.  
with pump setting of 95 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>CLAY + STONES</u>	<u>0</u>	<u>48</u>	<u>170</u>	<u>FRESH</u>
<u>GRAVEL</u>	<u>48</u>	<u>60</u>	<u>+202</u>	
<u>CLAY</u>	<u>60</u>	<u>73</u>		
<u>LIMESTONE</u>	<u>73</u>	<u>205</u>		

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

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

Drilling or Boring Firm LADCO DRILLING  
Address HILLSBURGH RR. #1

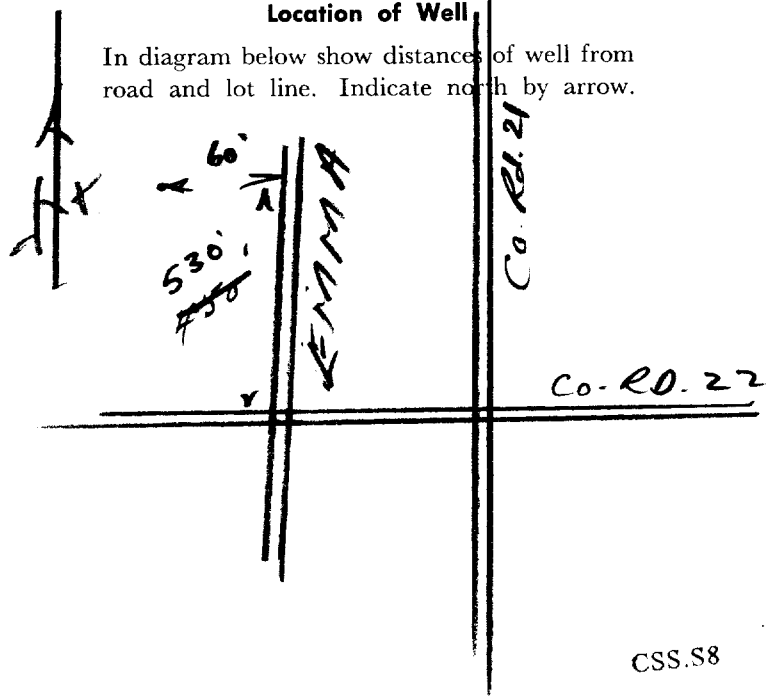
Licence Number 1570

Name of Driller or Borer ROY LANG  
Address HILLSBURGH.

Date Dec. 14/65  
Roy Roy Lang  
(Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



UTM 5 R 1540 E



WATER RESOURCES COMMISSION  
 DIVISION 17 No 286  
 ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 DUFFERIN County or District  
 Township, Village, Town or City GRAND VALLEY  
 Date completed 9 9 1965  
 (day month year)  
 Address GRAND VALLEY

### Casing and Screen Record

Inside diameter of casing 4 1/4  
 Total length of casing 66  
 Type of screen None  
 Length of screen None  
 Depth to top of screen 44  
 Diameter of finished hole 4 1/4

### Pumping Test

Static level 40 FEET  
 Test-pumping rate 7 G.P.M.  
 Pumping level 60 feet  
 Duration of test pumping 3 Hours  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 7 G.P.M.  
 with pump setting of 60 feet below ground surface

### Well Log

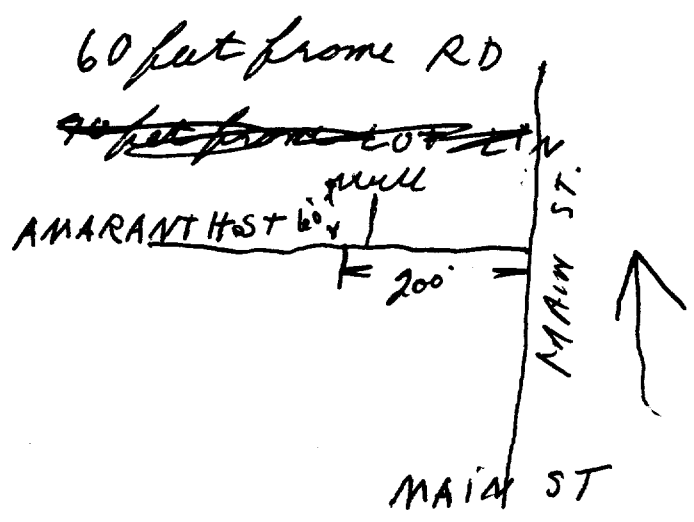
### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Long well</u>	<u>0</u>	<u>27</u>		
<u>gravity clay</u>	<u>27</u>	<u>66</u>	<u>107</u>	<u>fresh</u>
<u>Hard Blue lime Stone</u>	<u>66</u>	<u>107</u>		

For what purpose(s) is the water to be used?  
Domestic upland  
 Is well on upland, in valley, or on hillside?  
upland  
 Drilling or Boring Firm JOHN CUDNEY  
 Address SALEM, ONT  
 Licence Number 1597  
 Name of Driller or Borer  
 Address  
 Date Sept 9, 1965  
John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



UTM 59 R 1520



WATER RESOURCES DIVISION  
 172 No. 287  
 ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 Properin Ruffin Township, Village, Town or City GRAND VALLEY  
 County or District Properin Ruffin  
 Con. 10 Lot 10 Date completed 25 9 1965  
 (day month year)  
 Address Grand Valley

### Casing and Screen Record

Inside diameter of casing 4 1/4  
 Total length of casing 70 feet  
 Type of screen NONE  
 Length of screen NONE  
 Depth to top of screen NONE  
 Diameter of finished hole 4 1/4

### Pumping Test

Static level 42 feet  
 Test-pumping rate 10 G.P.M.  
 Pumping level 60 feet  
 Duration of test pumping 1 Hour  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 10 G.P.M.  
 with pump setting of 60 feet below ground surface

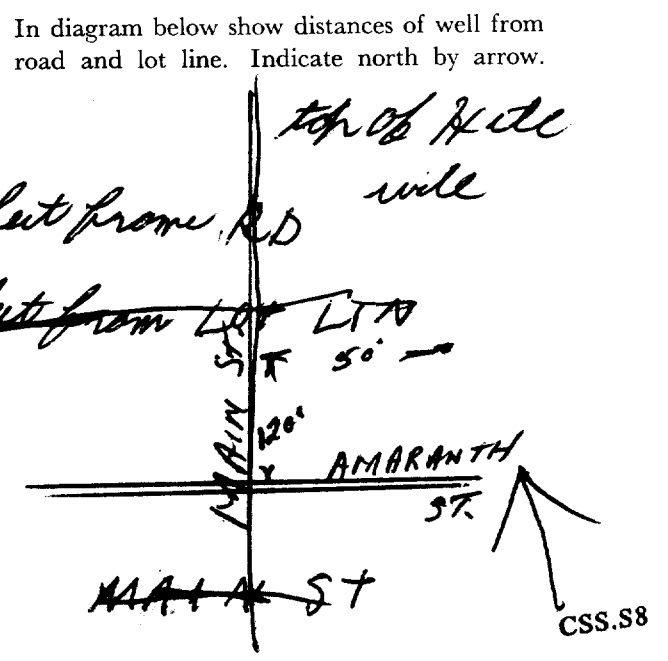
### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Clay with large stones</u>	<u>0</u>	<u>67</u>	<u>110</u>	<u>fresh</u>
<u>Hard Blue lime stone</u>	<u>67</u>	<u>110</u>		

For what purpose(s) is the water to be used? Domestic  
 Is well on upland, in valley, or on hillside? upland  
 Drilling or Boring Firm JOHN N. CUDNEY  
 Address SALEM - ONT  
 Licence Number 1597  
 Name of Driller or Borer John Cudney  
 Address John Cudney  
 Date John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well



CON 5 R 1520 E



WATER RESOURCES DIVISION  
17 No 288  
ONTARIO WATER RESOURCES COMMISSION  
GRAND VALLEY

The Ontario Water Resources Commission Act

Elev. 5 R 1520

# WATER WELL RECORD

Basin 23 DUFFERIN  
County or District

Township, Village, Town or City GRAND VALLEY  
Date completed 26 8 1965  
(day month year)

Con. Lot

Owner GRAND VALLEY DISTRICT HIGH SCHOOL  
(print in block letters) Address

### Casing and Screen Record

### Pumping Test

Inside diameter of casing 4 1/4  
Total length of casing none added  
Type of screen  
Length of screen  
Depth to top of screen  
Diameter of finished hole 4

Static level 5-5 feet  
Test-pumping rate 7 G.P.M.  
Pumping level 80 feet  
Duration of test pumping 4 hours  
Water clear or cloudy at end of test Clear  
Recommended pumping rate 7 G.P.M.  
with pump setting of 80 feet below ground surface

### Well Log

### Water Record

#### Overburden and Bedrock Record

Depend Drill rock  
gray lime stone  
previously drilled  
gray limestone

From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>182</u>	<u>228</u>	<u>228</u>	<u>fresh</u>
<u>0</u>	<u>182</u>		
<u>182</u>	<u>228</u>		

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

Domestic

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

upland

Drilling or Boring Firm JOHN CUDNEY

Address SALEM ONT

Licence Number 1577

Name of Driller or Borer

Address

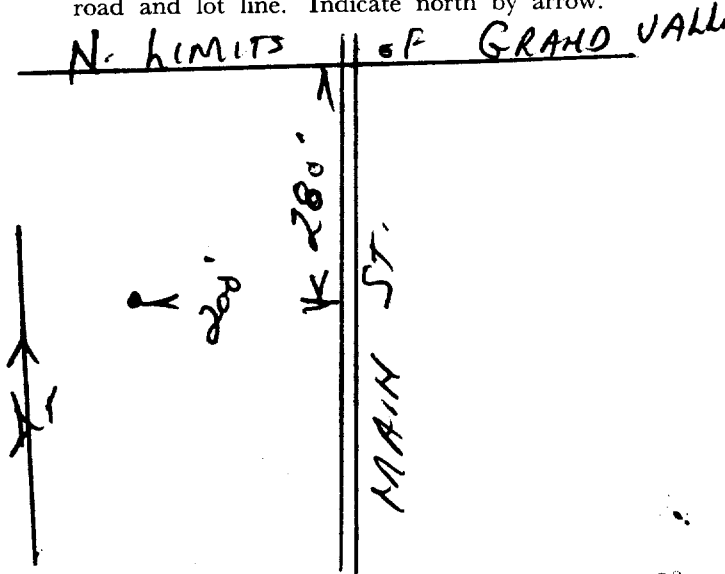
Date

John Cudney  
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

### Location of Well

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







WATER RESOURCES DIVISION  
 17 No. 289  
 MAY 19 1966  
 ONTARIO WATER RESOURCES COMMISSION

UTM 2 50 50  
 Elev. 50 1500

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 DIFFERIN Township, Village, Town or City GRAND VALLEY  
 County or District \_\_\_\_\_ Date completed 16 Feb. 1966  
 (day month year)  
 Con. \_\_\_\_\_ Lot \_\_\_\_\_ Address Grand Valley

### Casing and Screen Record

Inside diameter of casing 4"  
 Total length of casing 60'  
 Type of screen \_\_\_\_\_  
 Length of screen None  
 Depth to top of screen \_\_\_\_\_  
 Diameter of finished hole 4"

### Pumping Test

Static level 25'  
 Test-pumping rate 10 G.P.M.  
 Pumping level 25'  
 Duration of test pumping 2 hrs.  
 Water clear or cloudy at end of test clear  
 Recommended pumping rate 8 G.P.M.  
 with pump setting of 50 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Sand</u>	<u>0</u>	<u>20</u>		
<u>Hardpan and Boulders</u>	<u>20</u>	<u>59</u>		
<u>Grey Limestone</u>	<u>59</u>	<u>90</u>	<u>88</u>	<u>fresh</u>

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

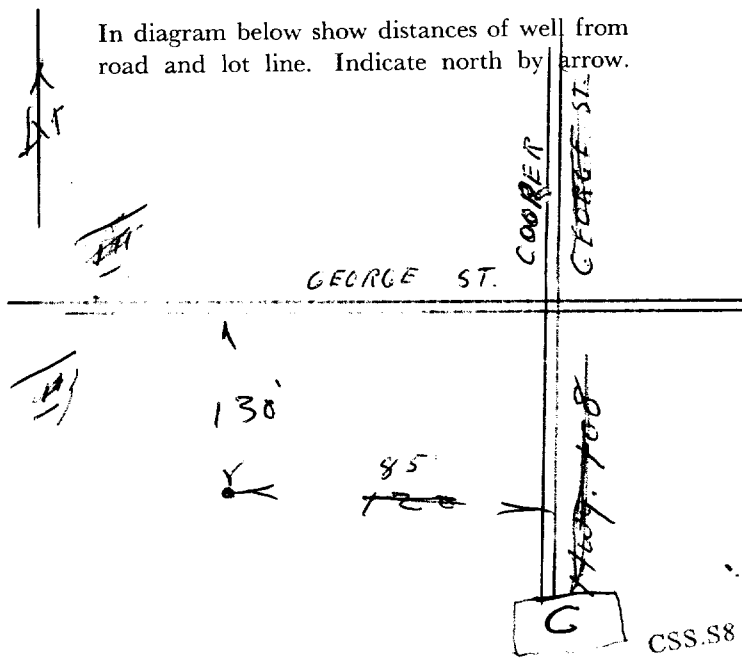
Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm **Water Well Drilling**  
 R. H. GADKE - PHONE 123W1  
 Address R.R. 1 - CLIFFORD, ONTARIO

Licence Number 1956  
 Name of Driller or Borer Ronald Gadke  
 Address R.R. 1, Clifford  
 Date Feb. 16, 1966  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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





17 No. 290

UTM: Z 9999 9999  
R 99999999

The Ontario Water Resources Commission Act

Elev. 9

# WATER WELL RECORD

Basin County or District DUFFERIN

Township, Village, Town or City GRAND VALLEY

Con. Gier Street Lot 93

Date completed 17 6 1966  
(day month year)

Address GRAND VALLEY

### Casing and Screen Record

Inside diameter of casing 4  
Total length of casing 42 feet  
Type of screen  
Length of screen None  
Depth to top of screen  
Diameter of finished hole 4

### Pumping Test

Static level 10 feet  
Test-pumping rate 10 G.P.M.  
Pumping level 22 feet  
Duration of test pumping 3 Hour  
Water clear or cloudy at end of test Clear  
Recommended pumping rate 10 G.P.M.  
with pump setting of 22 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>gravel</u>	<u>0</u>	<u>15-</u>	<u>75-</u>	<u>fresh</u>
<u>Hard Pan</u>	<u>15-</u>	<u>40</u>		
<u>gray lime Stone</u>	<u>40</u>	<u>75-</u>		

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

Is well on upland, in valley, or on hillside? valley  
Drilling or Boring Firm JOHN CUDNEY

Address SALEM ONT

Licence Number 2021

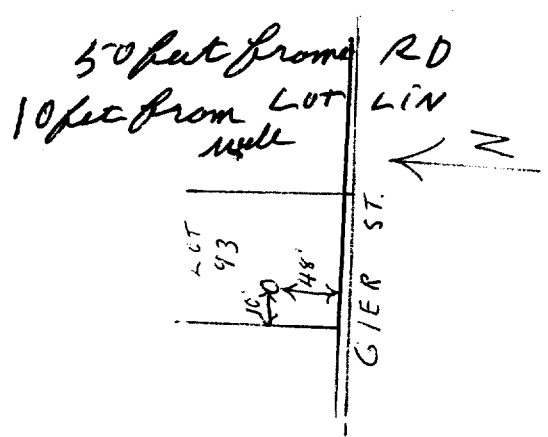
Name of Driller or Borer

Address John 17/66  
Date John Cudney

(Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



Form 7 15M-60-4138

PLAN 29A

LOT 93

OWRC COPY

CSS.S8



WATER RESOURCES DIVISION  
 171 No 1966 292  
 ONTARIO WATER RESOURCES COMMISSION

UTM 58 R 1490 E

The Ontario Water Resources Commission Act

Elev. 58 R 1490

# WATER WELL RECORD

Basin 23 County or District DUFFERIN

Township, Village, Town or City GRAND VALLEY

Gen. PLAN 29A LOT 1

Date completed 4 7 1966  
 (day month year)

Address GRAND VALLEY ONT.

### Casing and Screen Record

Inside diameter of casing 4"  
 Total length of casing 83'  
 Type of screen -  
 Length of screen -  
 Depth to top of screen -  
 Diameter of finished hole 4"

### Pumping Test

Static level 6 feet  
 Test-pumping rate 11 G.P.M.  
 Pumping level 20 feet  
 Duration of test pumping 3 Hours  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 11 G.P.M.  
 with pump setting of 20 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Stoney Clay</u>	<u>0</u>	<u>30</u>		
<u>Hard gray lime stone</u>	<u>30</u>	<u>75</u>	<u>75</u>	<u>fresh</u>

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

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

Drilling or Boring Firm JOHN. CUDNEY

Address SALEM ONT

Licence Number 2021

Name of Driller or Borer as above

Address as above

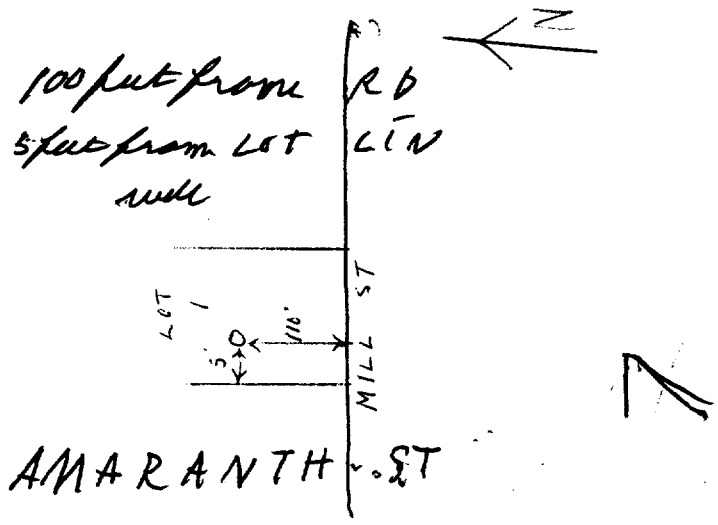
Date July 4/66  
John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

PLAN 29A  
LOT 1

### Location of Well

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



UTM *12Z*



WATER RESOURCES DIVISION  
171 5 1966  
293  
ONTARIO WATER RESOURCES COMMISSION

Elev. *59* R *1550*

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin *23*  
County or District *Dufferin*

Township, Village, Town or City *GRAND VALLEY*

Con. Lot *Part 25-26* Date completed *4 8 1966*  
(day month year)

Address *GRAND VALLEY*

### Casing and Screen Record

Inside diameter of casing *4 inch*  
Total length of casing *60*  
Type of screen  
Length of screen *None*  
Depth to top of screen  
Diameter of finished hole *4 inch*

### Pumping Test

Static level *32 feet*  
Test-pumping rate *38 10* G.P.M.  
Pumping level *38*  
Duration of test pumping *1 Hour*  
Water clear or cloudy at end of test *Clear*  
Recommended pumping rate *10* G.P.M.  
with pump setting of *40* feet below ground surface

### Well Log

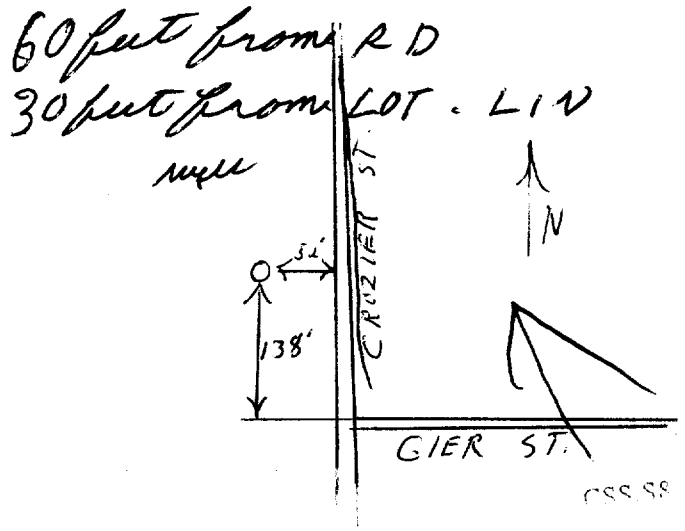
### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<i>Clay with large stones</i>	<i>0</i>	<i>55</i>		
<i>gray lime stones</i>	<i>55</i>	<i>100</i>	<i>100</i>	<i>fresh</i>

For what purpose(s) is the water to be used?  
Is well on upland, in valley, or on hillside? *hillside*  
Drilling or Boring Firm *JOHN CUDNEY SALEM ONT*  
Address  
Licence Number *2021*  
Name of Driller or Borer *as above*  
Address  
Date *aug 4 / 66*  
*John Cudney*  
(Signature of Licensed Drilling or Boring Contractor)  
*PLAN 29A*

### Location of Well

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



Form 7 15M-60-4138

WRC COPY

*village lots 25-26*

TM 1172 555010  
 5R 48606501  
 lev. 6R 1500



1700866

7

The Ontario Water Resources Commission Act 9

# WATER WELL RECORD

County or District Dufferin Township, Village, Town or City GRAND VALLEY  
 Con. MAIN ST Lot \_\_\_\_\_ Date completed 4 9 1968  
 (day month year)  
 Address GRAND VALLEY

### Casing and Screen Record

Inside diameter of casing 4 1/8  
 Total length of casing 28 feet  
 Type of screen \_\_\_\_\_  
 Length of screen \_\_\_\_\_  
 Depth to top of screen \_\_\_\_\_  
 Diameter of finished hole 4 1/8

### Pumping Test

Static level 6 feet  
 Test-pumping rate 15 G.P.M.  
 Pumping level 20 feet  
 Duration of test pumping 6 Hours  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 15 G.P.M.  
 with pump setting of 20 feet below ground surface

### Well Log

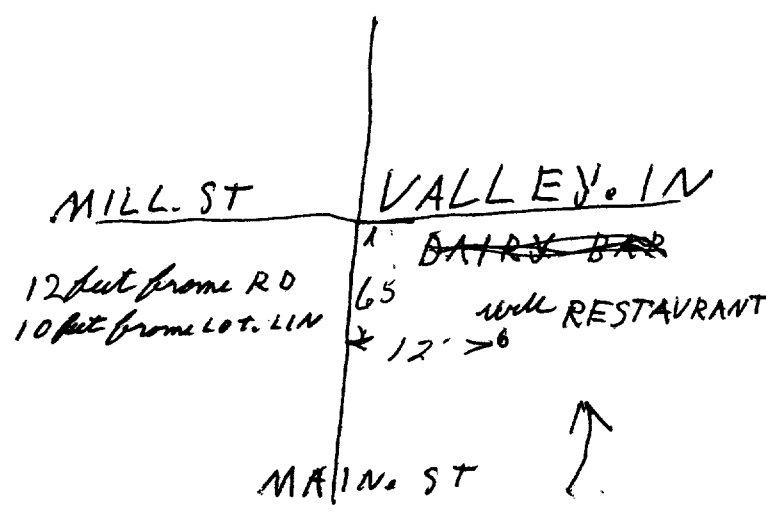
### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Stoney Clay</u>	<u>0</u>	<u>23</u>		
<u>Hard gray lime stone</u>	<u>23</u>	<u>109</u>	<u>109</u>	<u>fresh</u>

For what purpose(s) is the water to be used? Domestic and Commercial  
 Is well on upland, in valley, or on hillside? Valley  
 Drilling or Boring Firm JOHN CUDNEY  
 Address SALEM ONT  
 Licence Number 2934  
 Name of Driller or Borer same  
 Address \_\_\_\_\_  
 Date Sept 4/68  
John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



STM 1172 5T5T54010  
 5R 48160195T0  
 5R 115T00  
 231



1700868

CODED

The Ontario Water Resources Commission Act

NOV 27 1968

7

# WATER WELL RECORD

ONTARIO WATER RESOURCES COMMISSION

County or District Dufferin

Township, Village, Town or City GRAND VALLEY

Con. 00 Lot 727

Date completed 10 10 1969  
 (day month year)

Address GRAND VALLEY

## Casing and Screen Record

Inside diameter of casing 4 1/2  
 Total length of casing 41 feet  
 Type of screen —  
 Length of screen —  
 Depth to top of screen —  
 Diameter of finished hole 4 1/2

## Pumping Test

Static level 11 feet  
 Test-pumping rate 13 G.P.M.  
 Pumping level 40 feet  
 Duration of test pumping 1 1/2 Hours  
 Water clear or cloudy at end of test Clear  
 Recommended pumping rate 13 G.P.M.  
 with pump setting of 40 feet below ground surface

## Well Log

## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>gravel with large stones</u>	<u>0</u>	<u>38</u>	<u>145-</u>	<u>fresh</u>
<u>Hard gray lime stone</u>	<u>38</u>	<u>145-</u>		

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

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

Drilling or Boring Firm JOHN CUDNEY

Address SALEM ONT

Licence Number 2934

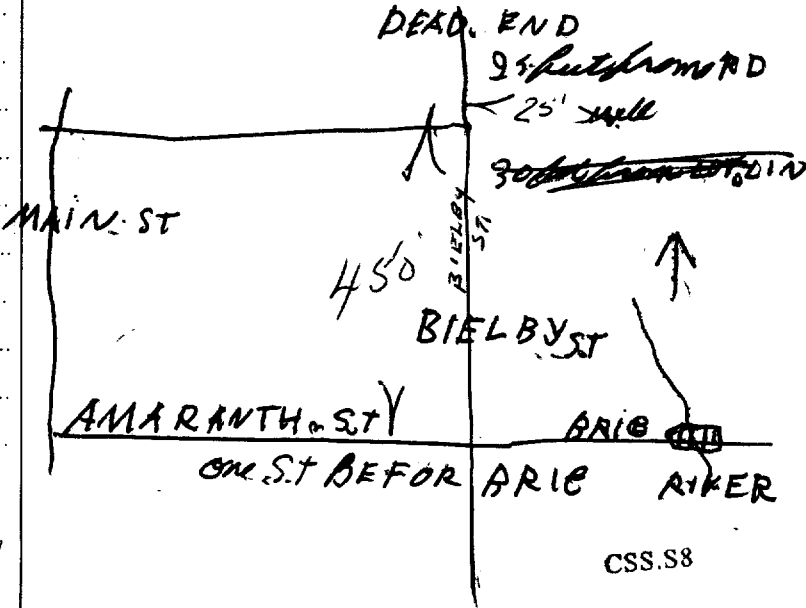
Name of Driller or Borer same

Address at 10/69

Date John Cudney  
 (Signature of Licensed Drilling or Boring Contractor)

## Location of Well

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







1700923

The Ontario Water Resources Commission Act

# WATER WELL RECORD

1177 5555 1010  
 5R 4860960 CODED  
 9R 15225  
 23  
 County or District DUFFERIN Township, Village, Town or City GRAND VALLEY EAST COTHER  
 Con. III Lot 82 Date completed 3 JUNE 1968  
 (day month year)

Address GRAND VALLEY CROSIER ST

### Casing and Screen Record

Inside diameter of casing 4"  
 Total length of casing 51 FT  
 Type of screen NONE  
 Length of screen  
 Depth to top of screen  
 Diameter of finished hole 4"

### Pumping Test

Static level 15 FT  
 Test-pumping rate 10 G.P.M.  
 Pumping level 18 FT  
 Duration of test pumping 1 hr.  
 Water clear or cloudy at end of test CLEAR.  
 Recommended pumping rate 6 G.P.M.  
 with pump setting of 60 feet below ground surface

### Well Log

### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>CLAY - ROCKS</u>	<u>0</u>	<u>46</u>	<u>12 FT</u>	<u>FRESH</u>
<u>LIGHT GREY LIMESTONE</u>	<u>46</u>	<u>73</u>		

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

HOUSE

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

Drilling or Boring Firm LADCO DRILLING

Hillsburg R.R. #1

Address

Licence Number 2987

Name of Driller or Borer THOMAS LANG

Address Hillsburg R.R. #1

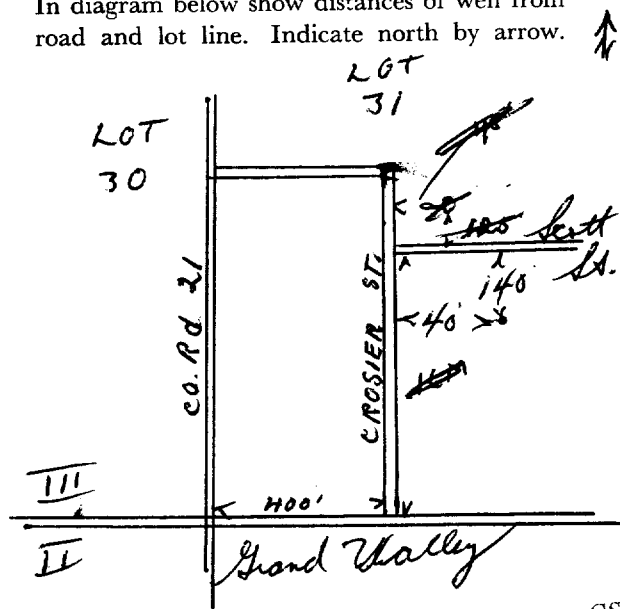
Date June 3 1968

T. Lang

(Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



43  
TM

1172 | 5548410

Case 111  
Lot 31



1700924  
3 9

4R | 48611730

CODED

7

lev. 7R | 15T35T

The Ontario Water Resources Commission Act

# WATER WELL RECORD

in 23

County or District JUFFERIN Township, Village, Town or City EAST LUTHER

Con. 711 Lot 31 Date completed 16 JULY 1968  
(day month year)

Address Grand Valley

### Casing and Screen Record

Inside diameter of casing 4"

Total length of casing 15

Type of screen

Length of screen NONE

Depth to top of screen

Diameter of finished hole 4"

### Pumping Test

Static level 30

Test-pumping rate 6 G.P.M.

Pumping level 65 FT

Duration of test pumping 1 hr

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 6 G.P.M.

with pump setting of 70 feet below ground surface

### Well Log

#### Overburden and Bedrock Record

#### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Clay - rocks</u>	<u>0</u>	<u>71</u>	<u>160 FT</u>	
<u>LIGHT GREY LIMESTONE</u>	<u>71</u>	<u>225</u>	<u>208 FT</u>	<u>FRESH</u>

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

DOMESTIC

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

Drilling or Boring Firm LADCO DRILLING

HILLSBURG R.R. #1

Address

Licence Number 2987

Name of Driller or Borer THOMAS LANG

Address HILLSBURG R.R. #1

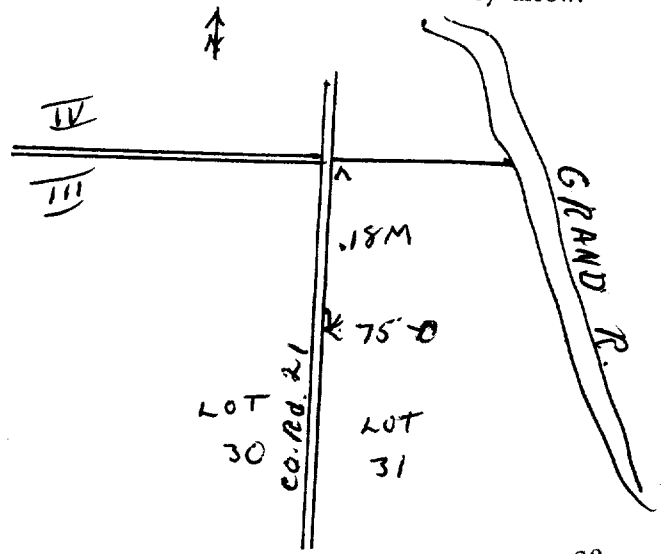
Date July 16 1968

T. Lang

(Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



UPM

1 7 2 5 5 4 9 5 0



1700925 P

7

5 R 4 8 6 1 0 5 0 CODED

lev. 5 R 1 1 5 6 0

The Ontario Water Resources Commission Act

# WATER WELL RECORD

basin 2 3

GRAND VALLEY

County or District DUFFERIN Township, Village, Town or City EAST KUTHER

Con. III Pt. Lot 37 Date completed 11 July 1968  
(day) (month) (year)

Address Grand Valley

### Casing and Screen Record

### Pumping Test

Inside diameter of casing 4"  
 Total length of casing 95 FT  
 Type of screen  
 Length of screen  
 Depth to top of screen NONE  
 Diameter of finished hole 4"

Static level 64 FT  
 Test-pumping rate 10 G.P.M.  
 Pumping level 70  
 Duration of test pumping 1 hr.  
 Water clear or cloudy at end of test CLEAR  
 Recommended pumping rate 6 G.P.M.  
 with pump setting of 90 feet below ground surface

### Well Log

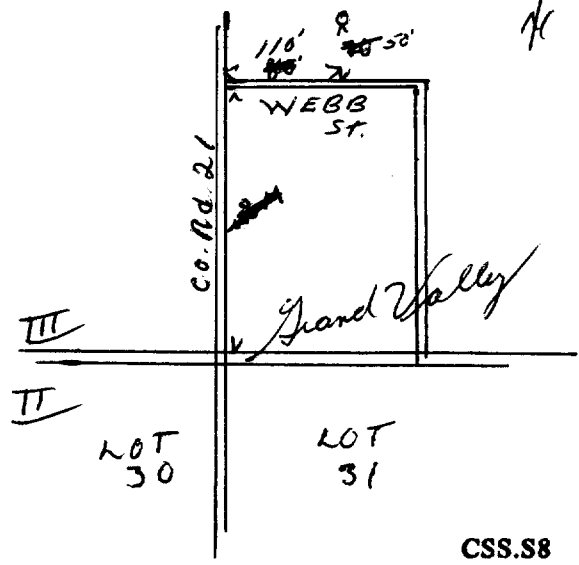
### Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>CLAY - Rocks - SAND LAYERS</u>	<u>0</u>	<u>88</u>	<u>174 FT</u>	
<u>Blue rock</u>	<u>88</u>	<u>135</u>	<u>174 FT</u>	<u>FRESH</u>
<u>LIGHT GREY LIMESTONE</u>	<u>135</u>	<u>193</u>	<u>191 FT</u>	

For what purpose(s) is the water to be used? HOUSE DOMESTIC  
 Is well on upland, in valley, or on hillside? UPLAND  
 Drilling or Boring Firm LADCO DRILLING  
Hillsburg R.R. #1  
 Address  
 Licence Number 2987  
 Name of Driller or Borer THOMAS LANG  
 Address HILLSBURG R.R. #1  
 Date July 11 1968  
T. Lang  
 (Signature of Licensed Drilling or Boring Contractor)

### Location of Well

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



17 555 230  
STR 1481601600 CODED



1700963-P 7  
3 9

lev. STR 11475 The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 County or District DUFFERIN Township, Village, Town or City GRAND VALLEY

Con. PANSTARD ST Date completed 9 4 1969  
(day month year)

Owner [Redacted] Address GRAND VALLEY

## SB Casing and Screen Record

Inside diameter of casing 4 1/8  
Total length of casing 31 feet  
Type of screen  
Length of screen  
Depth to top of screen  
Diameter of finished hole 4 1/8

## Pumping Test

Static level flowing 1/2 column a minute  
Test-pumping rate 12 G.P.M.  
Pumping level 40 feet  
Duration of test pumping 2 Hours  
Water clear or cloudy at end of test Clear  
Recommended pumping rate 12 G.P.M.  
with pump setting of 40 feet below ground surface

## Well Log

## Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>gravel with large stones</u>	<u>0</u>	<u>27</u>		
<u>gray lime stone</u>	<u>27</u>	<u>70</u>	<u>70</u>	<u>fresh</u>

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

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

Drilling or Boring Firm JOHN CUDNEY

Address SALEM ONT

Licence Number 3412 LOT 30

Name of Driller or Borer same

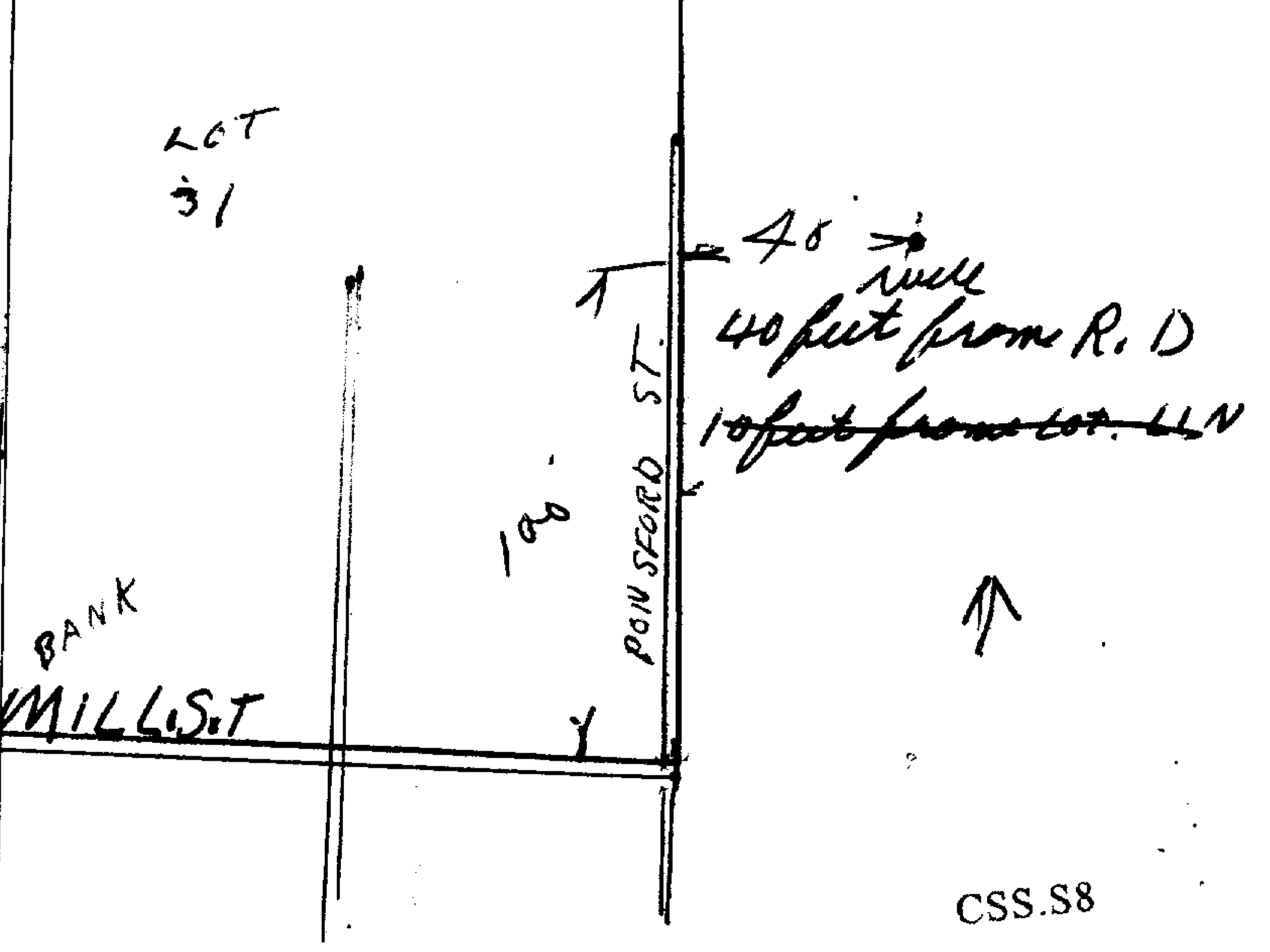
Address

Date April 4/69

John Cudney  
(Signature of Licensed Drilling or Boring Contractor)

## Location of Well

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



Con II  
 Lot 32  
 CODED

1700965  
 3 9

Water management in Ontario

The Ontario Water Resources Commission Act

# WATER WELL RECORD

JTM 117Z 5TSTSTST70  
 4R 48 60750  
 lev. 6R 11ST00

County or District **DUFFERIN** Township, Village, Town or City **GRAND VALLEY**  
 Con. **GRAND VALLEY PARK 32** Date completed **19 3 1969**  
 (day month year)  
 Address **AUTHORITY, gert, ont.**

## Casing and Screen Record

Inside diameter of casing **4 1/2**  
 Total length of casing **35'**  
 Type of screen  
 Length of screen  
 Depth to top of screen  
 Diameter of finished hole **4 3/8**

## Pumping Test

Static level **6 feet above ground level**  
 Test-pumping rate **8** G.P.M.  
 Pumping level **60 feet**  
 Duration of test pumping **2 Hours**  
 Water clear or cloudy at end of test **Clear**  
 Recommended pumping rate **8** G.P.M.  
 with pump setting of **60** feet below ground surface

## Well Log

Overburden and Bedrock Record	Water Record			
	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<i>granul with large stones</i>	0	32		
<i>white lime stone</i>	32	135		
<i>yellow lime stone</i>	135	170	170	<i>fresh</i>

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

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

Drilling or Boring Firm **JOHN CUDNEY**

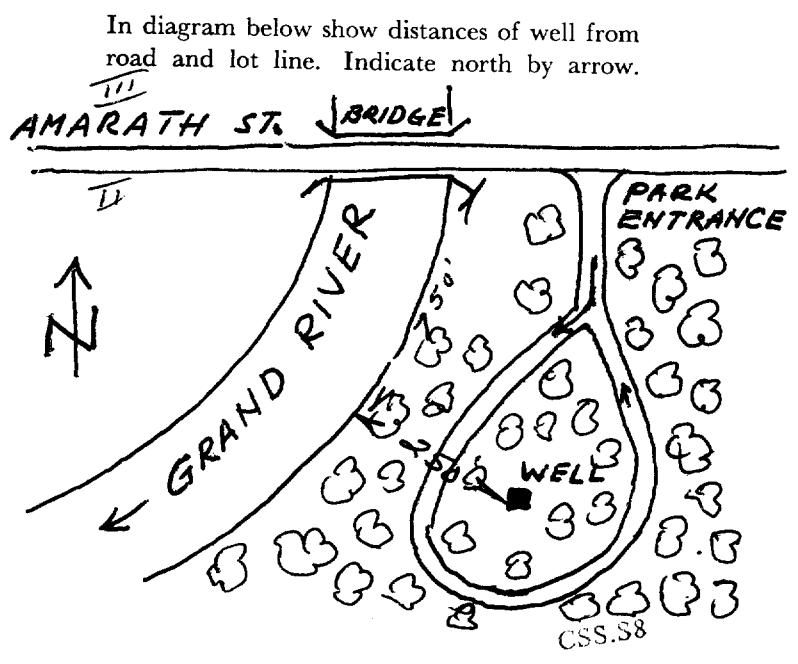
Address **SALEM ONT**

Licence Number **3412**

Name of Driller or Borer **same**

Address  
 Date **March 19/69**  
**John Cudney**  
 (Signature of Licensed Drilling or Boring Contractor)

## Location of Well



JIM 117-5151200E

1700982 7



STR 48611900 CODED

The Ontario Water Resources Commission Act

Elev. STR 115120

# WATER WELL RECORD

Basin 23  
County District

DUFFERIN

JUN 5 1969

VILLAGE  
Township, Village, Town or City

GRAND VALLEY  
~~LUTHER EAST~~

Con. SCOTT ST

Lot 104

Date completed 3

(day)

JUNE

month

69

year

Owner [Redacted]

Address Grand Valley East

## Casing and Screen Record

## Pumping Test

Inside diameter of casing 4

Total length of casing 38

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 4

Static level 12

Test-pumping rate 15 G.P.M.

Pumping level 14

Duration of test pumping 2

Water clear or cloudy at end of test clear

Recommended pumping rate 10 G.P.M.

with pump setting of 30 feet below ground surface

## Well Log

## Water Record

### Overburden and Bedrock Record

Fill	0	2
Gravel	2	37
Gray lime	37	47
Brown lime	47	90
Gray lime	90	122
Brown lime	122	171

From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
0	2	168	fresh

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

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

Drilling or Boring Firm Water Well Drilling

Address R. H. GADKE - PHONE 123WI  
R.R. 1 - CLIFFORD, ONTARIO

Licence Number 3363

Name of Driller or Borer

Address same

Date Jun 3/69

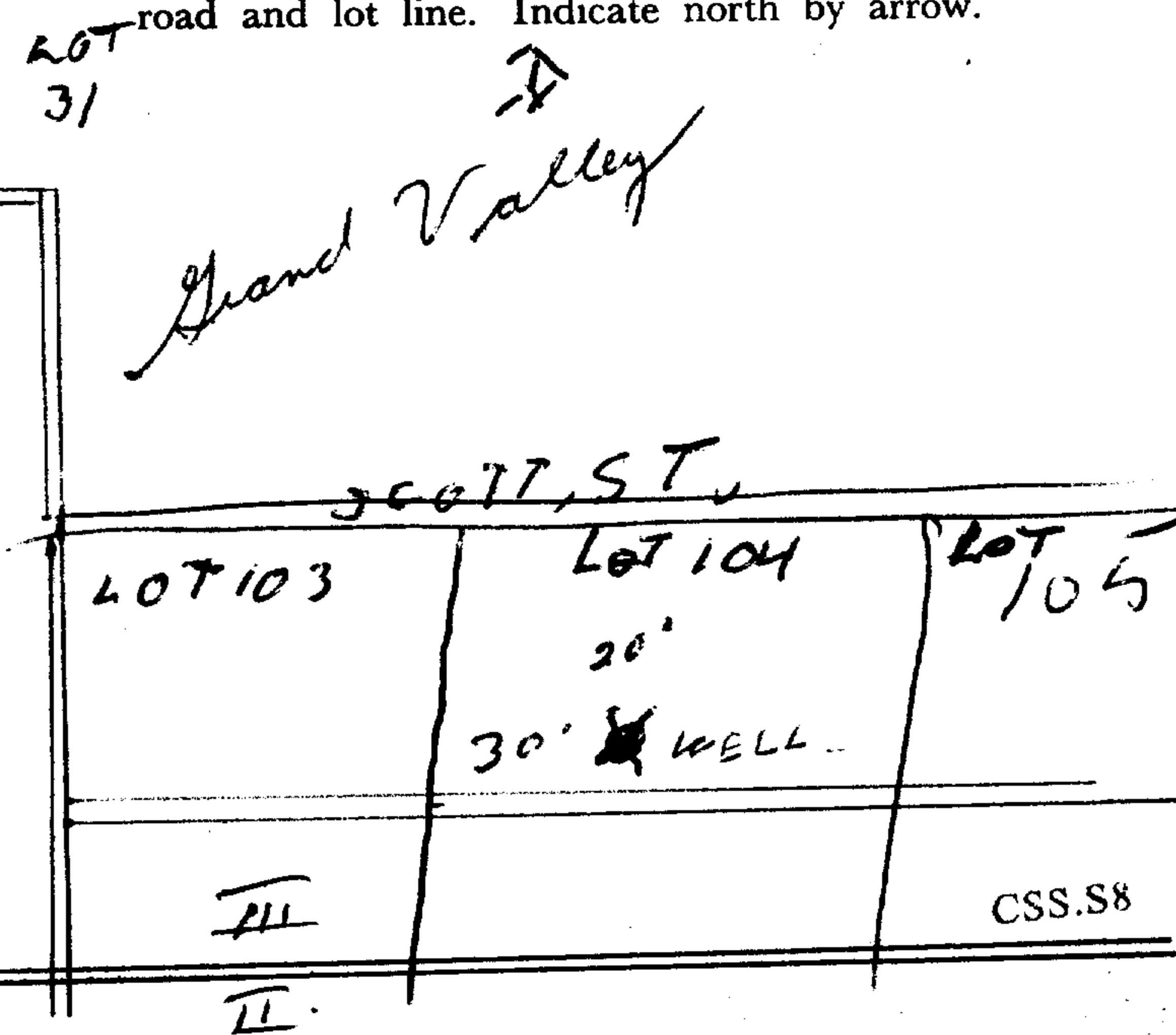
(Signature of Licensed Drilling or Boring Contractor)

PLAN 29  
LOT 104

Form 7  
OWRC COPY

## Location of Well

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





# WATER WELL RECORD

Water management in Ontario

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

11 1701037 17701

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST GRAND VALLEY** CON., BLOCK, TRACT, SURVEY, ETC.: **3** LOT: **30**

DATE COMPLETED: DAY **14** MO **10** YR **69**

ING: **961230** RC: **4** ELEVATION: **1550** RC: **4** BASIN CODE: **23**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY		CLAY & BOULDERS	0	45
GREY	CLAY		CLAY & STONES	45	58
	SAND		SAND & CLAY LAYERS	58	83
GREY	CLAY		CLAY & ROCKS	83	95
GREY	LIMESTONE			95	109
BROWN	ROCK	APL		109	119
GREY	ROCK			119	141
WHITE	LIMESTONE			141	178
BROWN	LIMESTONE			178	185
GREY	LIMESTONE			185	410

31 009202013 001822012 0093 01905 0092018 0109218 01119218 1

32 0141215 0178118 0181818 0181818 0181818

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0242	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	14	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
0273	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	19	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
0408	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	24	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	29	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	34	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6.06	1 <input checked="" type="checkbox"/> STEEL	0.188	0	105
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			
6.06	1 <input type="checkbox"/> STEEL		105	410
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			

#### SCREEN

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

MATERIAL AND TYPE: **NONE**

#### 61 PLUGGING & SEALING RECORD

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

#### 71 PUMPING TEST

PUMPING TEST METHOD: 1  PUMP; 2  BAILEY

PUMPING RATE: **2000** GPM

DURATION OF PUMPING: 15-16 HOURS **30** MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
062	160	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		160	160	160	160

IF FLOWING, GIVE RATE: **220** GPM

RECOMMENDED PUMP TYPE:  SHALLOW;  DEEP

RECOMMENDED PUMP SETTING: **220** FEET

RECOMMENDED PUMPING RATE: **0040** GPM.

50-53: **000.6** GPM./FT. SPECIFIC CAPACITY

#### LOCATION OF WELL

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

DRILLER'S REMARKS:

#### FINAL STATUS OF WELL

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

5  ABANDONED, INSUFFICIENT SUPPLY; 6  ABANDONED, POOR QUALITY; 7  UNFINISHED

#### WATER USE

1  DOMESTIC; 2  STOCK; 3  IRRIGATION; 4  INDUSTRIAL; 5  OTHER

6  COMMERCIAL; 7  MUNICIPAL; 8  PUBLIC SUPPLY; 9  NOT USED

#### METHOD OF DRILLING

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

6  BORING; 7  DIAMOND; 8  JETTING; 9  DRIVING

#### CONTRACTOR

NAME OF WELL CONTRACTOR: **LADCO DRILLING** LICENCE NUMBER: **3423**

ADDRESS: **HILLSBURGH RR#1**

NAME OF DRILLER OR BORER: **ROY LANG** LICENCE NUMBER: **3424**

SIGNATURE OF CONTRACTOR: *Roy Lang* SUBMISSION DATE: DAY **14** MO **10** YR **69**

#### OFFICE USE ONLY

DATA SOURCE: **1** CONTRACTOR: **3316** DATE RECEIVED: **191169**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.S8 **7**





# The Ontario Water Resources Commission Act

# WATER WELL RECORD

40 P/16W

Water management in Ontario

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

11

1701172

MUNICIP. 17003

CON. 04N

03

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER** CON., BLOCK, TRACT, SURVEY, ETC.: **III** LOT: **030**

**GRAND VALLEY** DATE COMPLETED: **10** 29 DAY, **DEC** MO., **70** YR.

NG: **60800** RC: **4** ELEVATION: **11550** RC: **5** BASIN CODE: **23**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY + GRAVEL	STONES		0	50
	CHAY			50	55
				55	73
GREY + BROWN	LIMESTONE			73	180

31 005000512 0055111 0073 05 0180015

32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER			
10-13	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
4"	STEEL	.205	0	78
4"	STEEL	4"	78	180

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD:  PUMP  BAILER

PUMPING RATE: **0005** GPM

DURATION OF PUMPING: **02** HOURS **15** MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING			
19-21 FEET	22-24 FEET	15 MINUTES 22-28 FEET	30 MINUTES 29-31 FEET	45 MINUTES 32-34 FEET	60 MINUTES 35-37 FEET
048	065	065	065	065	065

IF FLOWING, GIVE RATE: \_\_\_\_\_ GPM.

PUMP INTAKE SET AT: \_\_\_\_\_ FEET

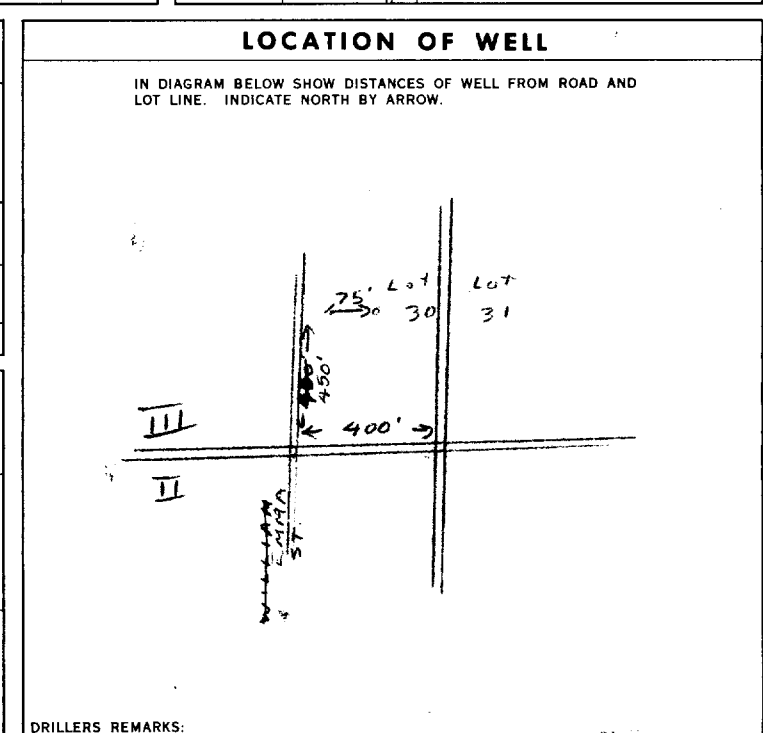
WATER AT END OF TEST:  CLEAR  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: **075** FEET

RECOMMENDED PUMPING RATE: **0004** GPM.

50-53: **000.3** GPM./FT. SPECIFIC CAPACITY



**FINAL STATUS OF WELL**

WATER SUPPLY  ABANDONED, INSUFFICIENT SUPPLY

OBSERVATION WELL  ABANDONED, POOR QUALITY

TEST HOLE  UNFINISHED

RECHARGE WELL

**WATER USE**

DOMESTIC  COMMERCIAL

STOCK  MUNICIPAL

IRRIGATION  PUBLIC SUPPLY

INDUSTRIAL  COOLING OR AIR CONDITIONING

OTHER  NOT USED

**METHOD OF DRILLING**

CABLE TOOL  BORING

ROTARY (CONVENTIONAL)  DIAMOND

ROTARY (REVERSE)  JETTING

ROTARY (AIR)  DRIVING

AIR PERCUSSION

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **LADCO DRILLING** LICENCE NUMBER: **3316**

ADDRESS: **HILLSBURG R.K.#1**

NAME OF DRILLER OR BORER: **ROY LANG** LICENCE NUMBER: **3317**

SIGNATURE OF CONTRACTOR: **R. Lang**

SUBMISSION DATE: **28** DAY, **DEC** MO., **70** YR.

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **3316** DATE RECEIVED: **30 12 70**

DATE OF INSPECTION: **29/3/71** INSPECTOR: **P/K**

REMARKS: **CSS S8**



The Ontario Water Resources Commission Act  
**WATER WELL RECORD**

40P1.6W

Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED  
 2. CHECK  CORRECT BOX WHERE APPLICABLE

11 1701209-10 17003 15 03

COUNTY OR DISTRICT: DUFFERIN TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: EAST LUTHER CON., BLOCK, TRACT, SURVEY, ETC.: NH Con 3 LOT: 030

OWNER (SURNAME FIRST): [REDACTED] R#2 Grand Valley DATE COMPLETED: 20 05 71

ING: 61930 RC: 4 ELEVATION: 1515 RC: 5 BASIN CODE: 23

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	GRAVELY CLAY	WITH LARGE STONES		0	50
	BLUE LIMESTONE			50	100

31 0050 05/11/2 0100315

32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0100	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
4 1/8	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	55
04	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		55	700
04	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			0100

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		80

MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 0009 GPM DURATION OF PUMPING: 05 HOURS 30 MINS.

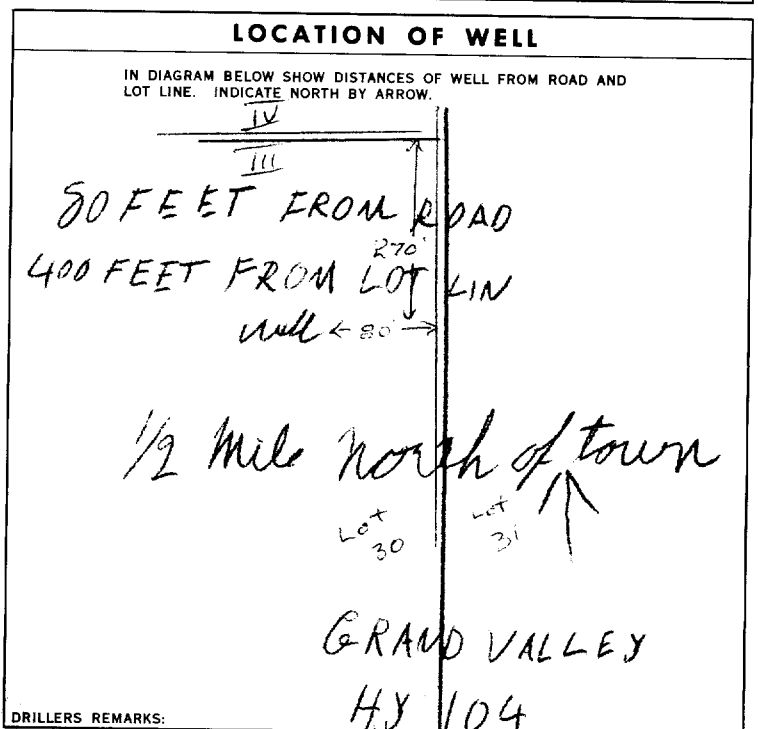
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
009 FEET	012 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		012 FEET	012 FEET	012 FEET	012 FEET

IF FLOWING, GIVE RATE: \_\_\_\_\_ PUMP INTAKE SET AT: 22 FEET WATER AT END OF TEST: 1  CLEAR 2  CLOUDY

RECOMMENDED PUMP TYPE: 1  SHALLOW 2  DEEP

RECOMMENDED PUMP SETTING: 022 FEET RECOMMENDED PUMPING RATE: 0009 GPM

50-53: 003.0 GPM/FT. SPECIFIC CAPACITY



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: JOHN CUDNEY LICENCE NUMBER: 1659  
 ADDRESS: SALEM, ONT

NAME OF DRILLER OR BORER: JOHN CUONEY LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: John Cudney SUBMISSION DATE: 20 5 19 71

**OFFICE USE ONLY**

DATA SOURCE: 1 CONTRACTOR: 1659 DATE RECEIVED: 290671

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: P/L

REMARKS: \_\_\_\_\_

CSS.S8



# WATER WELL RECORD

40 7/16 W

Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED  
2. CHECK  CORRECT BOX WHERE APPLICABLE

11 1701231-17701

COUNTY OR DISTRICT: **Dufferin** TOWNSHIP: ~~Barrow~~ **GRAND VALLEY** CON., BLOCK, TRACT, SURVEY, ETC.: **8** LOT: **25-27**

OWNER: **Grand Valley Ontario** DATE COMPLETED: DAY **13** MO. **Aug** YR. **71**

HING: **8611210** RC: **4** ELEVATION: **1550** RC: **5** BASIN CODE: **212**

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	top soil			0	2
brown	sand	large stones & gravel	silty	2	18
brown	clay	sand and gravel	silty	18	32
brown	clay	gravel		32	75
brown	clay			75	97
	cemented gravel			97	106
	sand	fine	fine	105	106
grey	rock	brown seams		106	114
grey & brown	rock			114	232
lt. brown	rock			232	265
med. brown rock				265	307
lt. brown rock				307	352
31lt. grey rock				352	430

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0415	<input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
	<input type="checkbox"/> SALTY 2 <input type="checkbox"/> MINERAL 4
	<input type="checkbox"/> FRESH 1 3 <input type="checkbox"/> SULPHUR 3
	<input type="checkbox"/> SALTY 2 4 <input type="checkbox"/> MINERAL 4
	<input type="checkbox"/> FRESH 1 3 <input type="checkbox"/> SULPHUR 3
	<input type="checkbox"/> SALTY 2 4 <input type="checkbox"/> MINERAL 4
	<input type="checkbox"/> FRESH 1 3 <input type="checkbox"/> SULPHUR 3
	<input type="checkbox"/> SALTY 2 4 <input type="checkbox"/> MINERAL 4

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
12	<input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		0 0015
06	<input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		0 107
05	<input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0 0118

### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13 14-17	
18-21 22-25	
26-29 30-33	

### 71 PUMPING TEST

1  PUMP 2  BAILER

10 PUMPING RATE: **0031** GPM. 15-16 HOURS: **24** 17-18 MINS.:

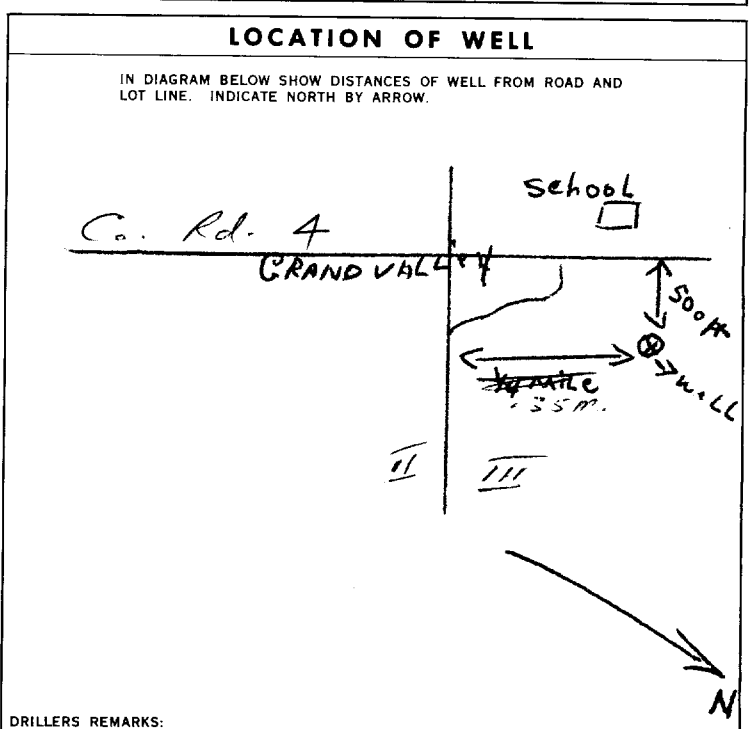
25 WATER LEVELS DURING:

15 MINUTES 26-28	30 MINUTES 29-31	45 MINUTES 32-34	60 MINUTES 35-37
074	124	129	5

38-41 PUMP INTAKE SET AT: **160** FEET. 42 WATER AT END OF TEST: **0031** GPM.

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP. 43-45 RECOMMENDED PUMP SETTING: **160** FEET. 46-49 RECOMMENDED PUMPING RATE: **0031** GPM.

50-53 **0.00.6** GPM./FT. SPECIFIC CAPACITY



### FINAL STATUS OF WELL

54  WATER SUPPLY 5  ABANDONED, INSUFFICIENT SUPPLY  
 OBSERVATION WELL 6  ABANDONED, POOR QUALITY  
 RECHARGE WELL 7  UNFINISHED

### WATER USE

55-56  DOMESTIC 5  COMMERCIAL  
 STOCK 6  INDUSTRIAL  
 IRRIGATION 7  PUBLIC SUPPLY  
 INDUSTRIAL 8  COOLING OR AIR CONDITIONING  
 OTHER 9  NOT USED

### METHOD OF DRILLING

57  CABLE TOOL 6  BORING  
 ROTARY (CONVENTIONAL) 7  DIAMOND  
 ROTARY (REVERSE) 8  JETTING  
 ROTARY (AIR) 9  DRIVING  
 AIR PERCUSSION

### CONTRACTOR

NAME OF WELL CONTRACTOR: **Graham Well Drilling** LICENCE NUMBER: **2406**  
 ADDRESS: **R R # 2 Guelph Ont.**  
 NAME OF DRILLER OR BORER: **Clayton Shantz** LICENCE NUMBER:  
 SIGNATURE OF CONTRACTOR: **J L Graham per [Signature]** SUBMISSION DATE: DAY **19** MO. **Aug** YR. **71**

### OFFICE USE ONLY

58 DATA SOURCE: **1** 59 CONTRACTOR: **2406** 59-62 DATE RECEIVED: **240971** 63-66 80  
 DATE OF INSPECTION: INSPECTOR: **Z**  
 REMARKS: **P 241**  
 CSS.S8 WI



# WATER WELL RECORD

40 P. 16 W

Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED  
2. CHECK  CORRECT BOX WHERE APPLICABLE

11 1701270-1 12701 10 14 15 22 23 24

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **GRAND VALLEY** CON., BLOCK, TRACT, SURVEY, ETC.: **GRAND VALLEY** LOT: 25-27

DATE COMPLETED: 10-85 DAY: 30 MONTH: 07 YEAR: 71

BASIN CODE: 861030 RC: 4 ELEVATION: 1550 RC: 4

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	CLAY - Rocks			0	86
GREY	LIMESTONE			86	275
APL					

31 0086 0512 0275215

32

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0210	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
0270	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05"	STEEL	1.184	0	100
05"	STEEL		100	275

#### SCREEN

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

#### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

#### 71 PUMPING TEST

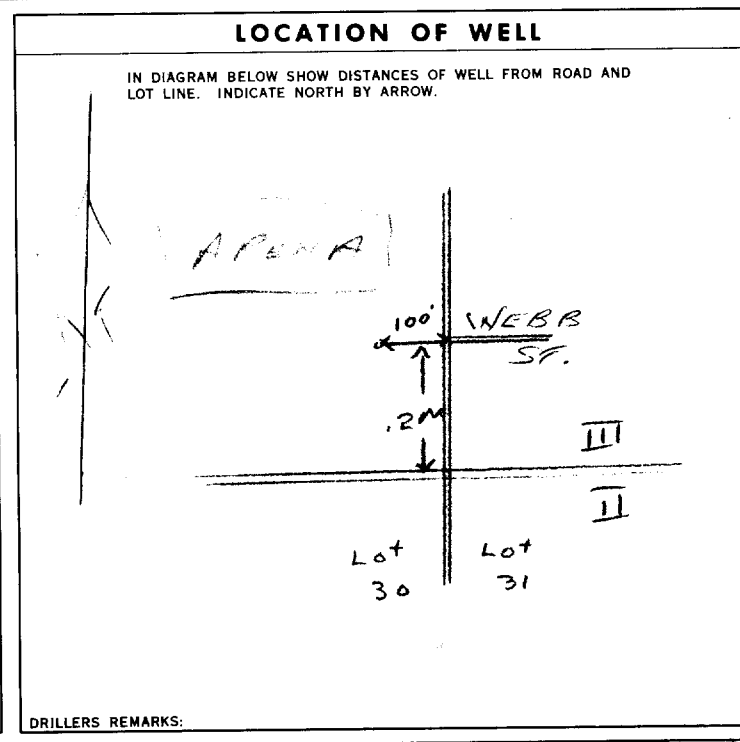
PUMPING TEST METHOD	PUMPING RATE GPM.	DURATION OF PUMPING HOURS
<input checked="" type="checkbox"/> PUMP	0025	02

STATIC LEVEL FEET	WATER LEVEL END OF PUMPING FEET	WATER LEVELS DURING PUMPING FEET
070	085	085

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 150 FEET

RECOMMENDED PUMPING RATE: 0025 GPM.



#### FINAL STATUS OF WELL

WATER SUPPLY

#### WATER USE

07

#### METHOD OF DRILLING

ROTARY (CONVENTIONAL)

#### CONTRACTOR

NAME OF WELL CONTRACTOR: **LADCO DRILLING** LICENCE NUMBER: **3316**

ADDRESS: **Hillsburg R.R. #1**

NAME OF DRILLER OR BORER: **THOMAS KING** LICENCE NUMBER: **3316**

SIGNATURE OF CONTRACTOR: *T. King*

#### OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3316 DATE RECEIVED: 11 02 72

REMARKS: **CSS.S8**



# WATER WELL RECORD

40/16w

Water management in Ontario

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

11

1701289

MUNICIPALITY 17701

CON.

COUNTY OR DISTRICT

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE

CON., BLOCK, TRACT, SURVEY, ETC.

LOT

Dufferin

Amnouth Valley

Amnouth St.

16

DATE COMPLETED

DAY 22 MO 11 YR 71

60770

ELEVATION 1495

RC 5

BASIN CODE 23

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown Gravel	Clay		Soft	0	38
Grey Limestone			"	38	50
White Limestone	Brown Limestone		"	50	140

OWRC  
P-9

31

003861105 0050215 0140115

32

41

### WATER RECORD

WATER POUND FEET	KIND OF WATER			
10-13	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	<input checked="" type="checkbox"/> STEEL	188	0	13.96
17-18	<input type="checkbox"/> STEEL			20-23
24-25	<input type="checkbox"/> STEEL			27-30

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

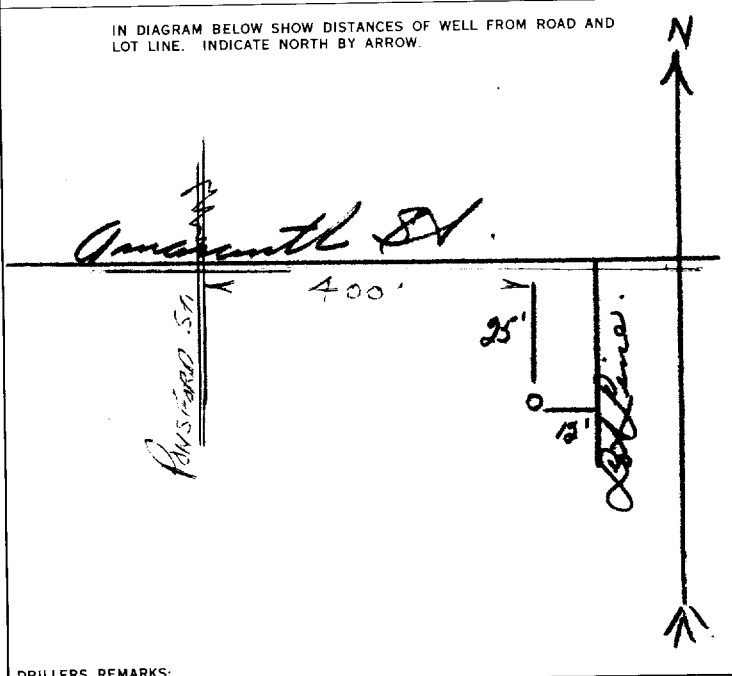
### 61 PLUGGING & SEALING RECORD

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

71

PUMPING TEST	PUMPING TEST METHOD		PUMPING RATE	DURATION OF PUMPING	
	<input type="checkbox"/> PUMP	<input checked="" type="checkbox"/> BAILER	0006	01	00
	19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES
	010	030	010	010	010

### LOCATION OF WELL



FINAL STATUS OF WELL	<input checked="" type="checkbox"/> WATER SUPPLY	<input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
	<input type="checkbox"/> OBSERVATION WELL	<input type="checkbox"/> ABANDONED, POOR QUALITY

WATER USE	<input checked="" type="checkbox"/> DOMESTIC	<input type="checkbox"/> COMMERCIAL
	<input type="checkbox"/> STOCK	<input type="checkbox"/> MUNICIPAL

METHOD OF DRILLING	<input type="checkbox"/> CABLE TOOL	<input type="checkbox"/> BORING
	<input checked="" type="checkbox"/> ROTARY (CONVENTIONAL)	<input type="checkbox"/> DIAMOND

NAME OF WELL CONTRACTOR	LICENCE NUMBER
HUNNEY WELL DRILLING	3406
ADDRESS	
36 BUENA VISTA DR. ORANGEVILLE	
NAME OF DRILLER OR BORER	LICENCE NUMBER
GORDON HUNNEY	3406
SIGNATURE OF CONTRACTOR	SUBMISSION DATE
Gordon Hunney	DAY _____ MO _____ YR _____

DATA SOURCE	CONTRACTOR	DATE RECEIVED
1	3406	14 02 72
DATE OF INSPECTION	INSPECTOR	
REMARKS:		
Pongford St. H. E. OLDER		
	CSS.S8	WI









Ontario

# WATER WELL RECORD

40P/16W

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

11 1701561

MUNICIP. 17003

CON. C.O.N. 103

COUNTY OR DISTRICT <b>DUFFERIN</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>GRAND VALLEY</b>	CON., BLOCK, TRACT, SURVEY, ETC. <b>III</b>	LOT 25-27 <b>031</b>
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DATE COMPLETED DAY <b>11</b> MO. <b>OCT</b> YR. <b>73</b>	
--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
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GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	CLAY	ROCKS		0	70
GREY	LIMESTONE			70	204

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
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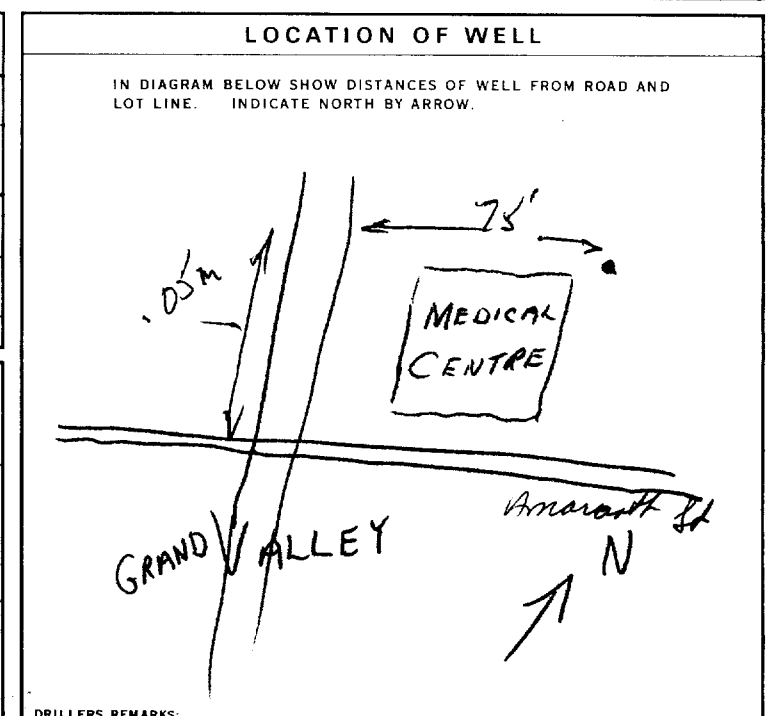
41 WATER RECORD			
WATER FOUND AT - FEET	KIND OF WATER		
10-13	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD				
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
4 1/4	STEEL	205	0	79
4 1/4	CONCRETE		79	204

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

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

71 PUMPING TEST METHOD		10 PUMPING RATE	11-14 DURATION OF PUMPING
1 <input type="checkbox"/> PUMP	2 <input checked="" type="checkbox"/> BAILER	0010 GPM	13 HOURS
PUMPING TEST	STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
	052	055	15 MINUTES: 055-28, 30 MINUTES: 055-31, 45 MINUTES: 055-34, 60 MINUTES: 055-37
	IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
			1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW	<input checked="" type="checkbox"/> DEEP	80	0010



54 FINAL STATUS OF WELL	1 <input checked="" type="checkbox"/> WATER SUPPLY	5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
	2 <input type="checkbox"/> OBSERVATION WELL	6 <input type="checkbox"/> ABANDONED, POOR QUALITY
	3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
	4 <input type="checkbox"/> RECHARGE WELL	
55-56 WATER USE	1 <input type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
	2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
	3 <input type="checkbox"/> IRRIGATION	7 <input checked="" type="checkbox"/> PUBLIC SUPPLY
	4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
	<input type="checkbox"/> OTHER	<input type="checkbox"/> NOT USED
57 METHOD OF DRILLING	1 <input type="checkbox"/> CABLE TOOL	6 <input type="checkbox"/> BORING
	2 <input checked="" type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
	3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING
	4 <input type="checkbox"/> ROTARY	9 <input type="checkbox"/> DRIVING
	5 <input type="checkbox"/> AIR PERCUSSION	

CONTRACTOR	NAME OF WELL CONTRACTOR <b>Ladco Drilling</b>	LICENCE NUMBER <b>3316</b>
	ADDRESS <b>HILLSBURGH RR#1</b>	
	NAME OF DRILLER OR BORER <b>Roy Lang</b>	LICENCE NUMBER <b>3317</b>
	SIGNATURE OF CONTRACTOR <b>Roy Lang</b>	SUBMISSION DATE DAY <b>11</b> MO. <b>OCT</b> YR. <b>73</b>

OFFICE USE ONLY	DATA SOURCE	CONTRACTOR	DATE RECEIVED
		<b>3316</b>	<b>18 01 74</b>
	DATE OF INSPECTION	INSPECTOR	
	REMARKS		



Ontario

# WATER WELL RECORD

409/16w

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

11

1701581

MUNICIP. 17003

CON. C/D/N

103

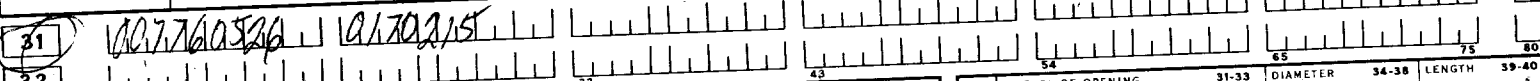
COUNTY OR DISTRICT: Dufferin TOWNSHIP: Grand Valley BOROUGH, CITY, TOWN, VILLAGE: E. Luther CON., BLOCK, TRACT, SURVEY, ETC.: III LOT: 031

OWNER (SURNAME FIRST): Dufferin ADDRESS: GRAND VALLEY DATE COMPLETED: 11-29-73

RC. ELEVATION: 6 1595 RC. BASIN CODE: 5 23 NOV 27, 1974

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<u>BROWN CLAY - Rocks</u>				<u>0</u>	<u>77</u>
<u>LIGHT GREY - LIMESTONE</u>				<u>77</u>	<u>170</u>



### 41 WATER RECORD

WATER FOUND AT - FEET: 0.56

KIND OF WATER:

1  FRESH 3  SULPHUR  
2  SALTY 4  MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
<u>0.5"</u>	<input checked="" type="checkbox"/> STEEL	<u>.188</u>	<u>0 088</u>
<u>0.5"</u>	<input checked="" type="checkbox"/> STEEL		<u>88 070</u>

### SCREEN

SIZE(S) OF OPENING (SLOT NO.):

MATERIAL AND TYPE:

### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
<u>10-13</u>	<u>14-17</u>
<u>18-21</u>	<u>22-25</u>
<u>26-29</u>	<u>30-33</u>

### 71 PUMPING TEST

PUMPING TEST METHOD:  PUMP  BAILER

PUMPING RATE: 0025 GPM

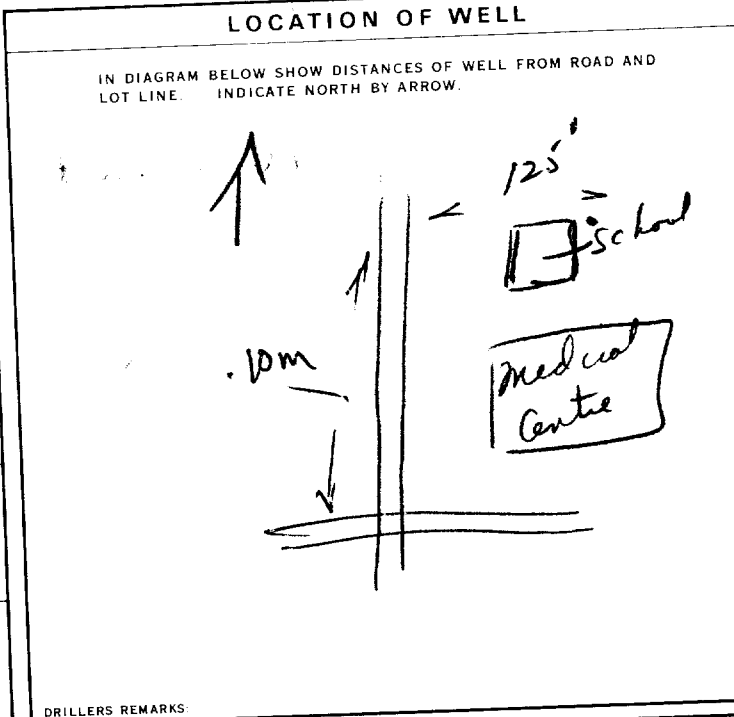
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
<u>061</u>	<u>065</u>	<u>065</u>
		<u>065</u>
		<u>065</u>
		<u>065</u>

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 0.95 FEET

RECOMMENDED PUMPING RATE: 0025 GPM



### FINAL STATUS OF WELL

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

### WATER USE

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

### METHOD OF DRILLING

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

### CONTRACTOR

NAME OF WELL CONTRACTOR: WADCO DRILLING LICENCE NUMBER: 3316

ADDRESS: Hillsburg R.R. #1

NAME OF DRILLER OR BORER: THOMAS LANG LICENCE NUMBER: 3316

SIGNATURE OF CONTRACTOR: J. Lang SUBMISSION DATE: 9 NOV 73

### OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3316 DATE RECEIVED: 18 01 74

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_



# WATER WELL RECORD

40P/16W

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

11

1701587

MUNICIPALITY 1,700.3

CON. CDP

102

COUNTY OR DISTRICT: **DUFF**  
 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **E. LUTHER**  
 CON., BLOCK, TRACT, SURVEY, ETC.: **PLAN 40 II** LOT 22 23 24  
 OWNER (SURNAME FIRST): **BRAND VALLEY** DATE COMPLETED: **NOV 27, 1974**  
 DAY: **05** MO: **11** YR: **73**

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BLACK	OVER BURDEN			0	5
BROWN	GRAVEL	F. SAND / Boulders	LAYERED	5	38
GREY	Rock	LIMESTONE	HARD	38	65
BROWN	Rock	(SANDSTONE)	SOFT	65	135

31 0005822 00386110813 006522615 013562816  
 32

41 WATER RECORD

WATER FOUND AT FEET	KIND OF WATER
70-135	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE	1.188	0	46
17-18"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		46	0135

60 SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

1  PUMP 2  BAILER

PUMPING RATE: 006 GPM

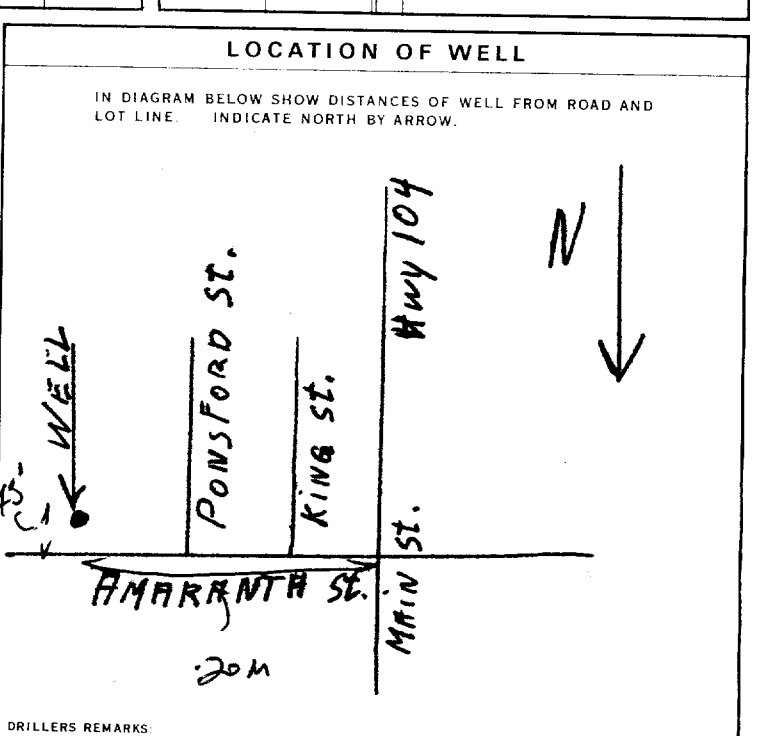
DURATION OF PUMPING: 03 HOURS 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
006 FEET	055 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		008 FEET	006 FEET	006 FEET	006 FEET

RECOMMENDED PUMP TYPE:  DEEP

RECOMMENDED PUMP SETTING: 060 FEET

RECOMMENDED PUMPING RATE: 005 GPM



54 FINAL STATUS OF WELL

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

55-56 WATER USE

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

57 METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR: **Rudy's DRILLING** LICENCE NUMBER: **2332**  
 ADDRESS: **BRI Hillsbury**  
 NAME OF DRILLER OR BORER: **Rudy GARIBOTZ** LICENCE NUMBER: **2332**  
 SIGNATURE OF CONTRACTOR: *Rudy Garibotz* SUBMISSION DATE: \_\_\_\_\_

OFFICE USE ONLY

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: **2332** DATE RECEIVED: **180174**  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: *LN*  
 REMARKS: \_\_\_\_\_  
 CSS.S8



Ontario

# WATER WELL RECORD

40P/160W

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

11

1701604

MUNICIPALITY 17003

CON. C.D.N.

03

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER**

OWNER (SURNAME FIRST): **GRAND VALLEY** ADDRESS: **CHUR OF CHR GRAND VALLEY**

DATE COMPLETED: DAY **17** MO **05** YR **74**

21 1701604 17 555145 4860820 6 1505 5 23 NOV 27, 1974 8

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	GRAVEL			0	24
GREY	CLAY			24	35
GREY	LIMESTONE			35	53
WHITE	LIMESTONE			53	124

31 0024611 0035205 0053215 0124115

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0124	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
04	1 <input checked="" type="checkbox"/> STEEL	188	0 36

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE

71 PUMPING TEST

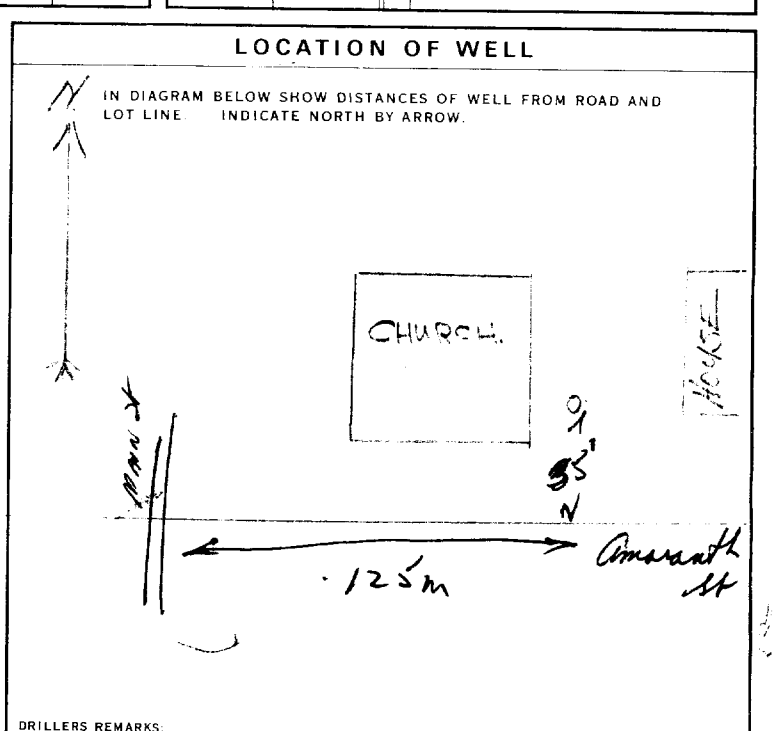
PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 0060 GPM

DURATION OF PUMPING: 01 HOURS 00 MINS

WATER LEVELS DURING PUMPING: 012, 024, 012

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP



54 FINAL STATUS OF WELL: 1  WATER SUPPLY

55-56 WATER USE: 1  DOMESTIC, 2  STOCK, 3  IRRIGATION, 4  INDUSTRIAL, 5  COMMERCIAL, 6  MUNICIPAL, 7  PUBLIC SUPPLY, 8  COOLING OR AIR CONDITIONING, 9  NOT USED

57 METHOD OF DRILLING: 2  ROTARY (CONVENTIONAL)

CONTRACTOR: LUNNEY WELL DRILLING, 36 BUENA VISTA DR, CANADVILLE

GORDON LUNNEY, 3406

SUBMISSION DATE: DAY 28 MO 1 YR 74

OFFICE USE ONLY

DATA SOURCE: 3406

DATE RECEIVED: 05 02 74

REMARKS: CSS.S8





MINISTRY OF THE ENVIRONMENT  
The Ontario Water Resources Act  
**WATER WELL RECORD**

40P/16W

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

11 1701795 17701  
 COUNTY OR DISTRICT: DUFF  
 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: E. LUTHER Grand Valley III  
 CON., BLOCK, TRACT, SURVEY, ETC.:  
 LOT: 25-27  
 DATE COMPLETED: 18 AUG 1974  
 MO. 8, YR. 74

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY			0	12
GREY	CLAY	SHALE - STONES		12	58
GREY	ROCK	BOULDERS - SAND - SHALE		58	74
LIGHT BLUE	ROCK	LIGHT GREY ROCK		74	105
LIGHT BROWN	ROCK	LIGHT GREY ROCK		105	225

31 0012605 00582051712 00742261328 0105326 0225626

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

DEPTH - FEET	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
0-11	<input checked="" type="checkbox"/> STEEL	1.188	0	84
84-0084	<input checked="" type="checkbox"/> OPEN HOLE			

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

71 PUMPING TEST METHOD

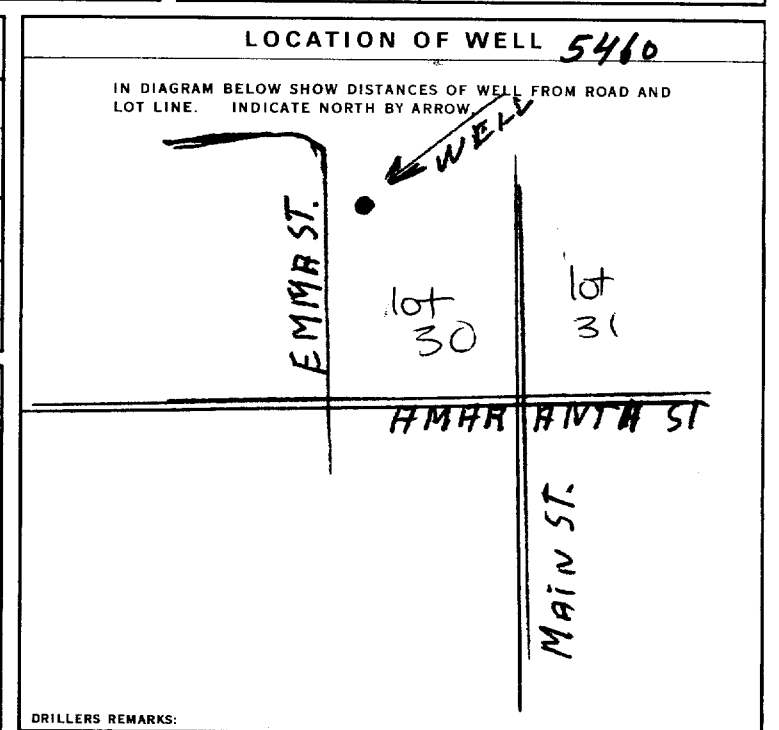
1  PUMP 2  BAILER

PUMPING RATE: 0005 GPM. DURATION OF PUMPING: 06 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
054	068	15 MINUTES: 058	30 MINUTES: 054	45 MINUTES: 054	60 MINUTES: 054

PUMP INTAKE SET AT: 90 FEET. WATER AT END OF TEST: 1  CLEAR 2  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP. RECOMMENDED PUMP SETTING: 090 FEET. RECOMMENDED PUMPING RATE: 0004 GPM.



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 1  DOMESTIC

METHOD OF DRILLING: 2  ROTARY (CONVENTIONAL)

CONTRACTOR: RUDY'S DRILLING, LICENCE NUMBER: 2332  
 ADDRESS: KRI HILLSBURG  
 NAME OF DRILLER OR BORER: RUDY GARBAT, LICENCE NUMBER: 2332  
 SIGNATURE OF CONTRACTOR: Rudy Garbat, SUBMISSION DATE: \_\_\_\_\_

OFFICE USE ONLY

DATA SOURCE: 1, CONTRACTOR: 2332, DATE RECEIVED: 050575  
 DATE OF INSPECTION: \_\_\_\_\_, INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 CSS.S8 PKD WI



Ontario

# WATER WELL RECORD

40 P/16W

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

11

11701824

MUNICIP. 17701

CON. 10 14 15 22 23 24

COUNTY OR DISTRICT: **DUFFERIN**  
 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER, Grand Valley**  
 CON., BLOCK, TRACT, SURVEY, ETC.: **2 II**  
 LOT 25-27: **332**  
 DATE COMPLETED: DAY **14** MO **Aug** YR **74**  
 NAME: **MA ST GRAND VALLEY**

RC. ELEVATION: **4860914** 5 1530 5 23  
 DATE: **AUG 09, 1977**  
 ID: **322**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY	ROCKS		0	70
GREY	LIMESTONE			70	103
WHITE	LIMESTONE			103	213

31 007060512 0103215 02131115  
 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
02/3 10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05 10-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	13-16
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

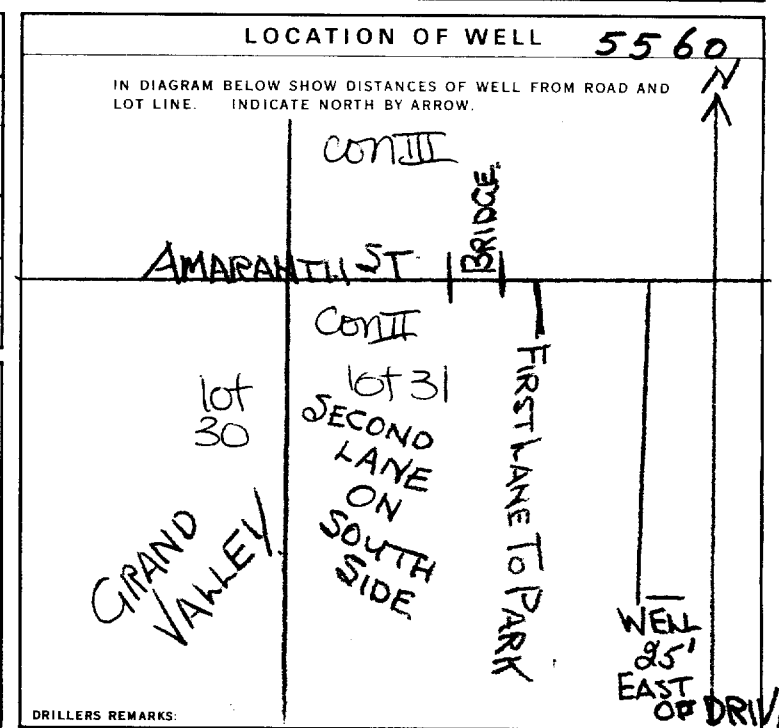
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
	31-33	34-38
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN 41-44

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST METHOD**

1  PUMP 2  BAILER  
 PUMPING RATE: **0007** GPM  
 DURATION OF PUMPING: **02** HOURS **00** MINS  
 WATER LEVELS DURING PUMPING:  
 19-21: **030** 22-24: **095** 25-28: **030** 29-31: **030** 32-34: **030** 35-37: **030**  
 IF FLOWING GIVE RATE: \_\_\_\_\_ GPM  
 PUMP INTAKE SET AT: \_\_\_\_\_ FEET  
 WATER AT END OF TEST: \_\_\_\_\_ FEET  
 1  CLEAR 2  CLOUDY  
 RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
 RECOMMENDED PUMP SETTING: **110** FEET  
 RECOMMENDED PUMP RATE: **0007** GPM



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

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

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

**CONTRACTOR**  
 NAME OF WELL CONTRACTOR: **LUNNEY WELL DRILLING LIMITED** LICENCE NUMBER: **3406**  
 ADDRESS: **36 BUENA VISTA DR CRANGEVILLE**  
 NAME OF DRILLER OR BORER: **GORDON LUNNEY** LICENCE NUMBER: **3406**  
 SIGNATURE OF CONTRACTOR: *Gordon Lunney* SUBMISSION DATE: \_\_\_\_\_

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **3406** DATE RECEIVED: **1 000 75**  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 P K P  
 W I





Ontario

# WATER WELL RECORD

40P/16W

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

11

1701921

MUNICIPALITY 177011

CON.

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **GRAND VALLEY 108 SCOT ST PLANA II** CON., BLOCK, TRACT, SURVEY, ETC.: **ELBY ST. GRAND VALLEY** LOT: **25-27**

DATE COMPLETED: **03** MO. **07** YR. **75**

1701921 11 55155 4860674 5 1495 5 23 AUG 09, 1977 322

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY			0	6
BROWN	GRAVEL			6	45
WHITE	LIMESTONE			45	140

31 0006605 0045611 0140115

32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0140	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	188
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			

**SCREEN**

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

MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 0005 GPM

DURATION OF PUMPING: 05 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
020	050	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		020	020	020	020

IF FLOWING, GIVE RATE: \_\_\_\_\_ GPM

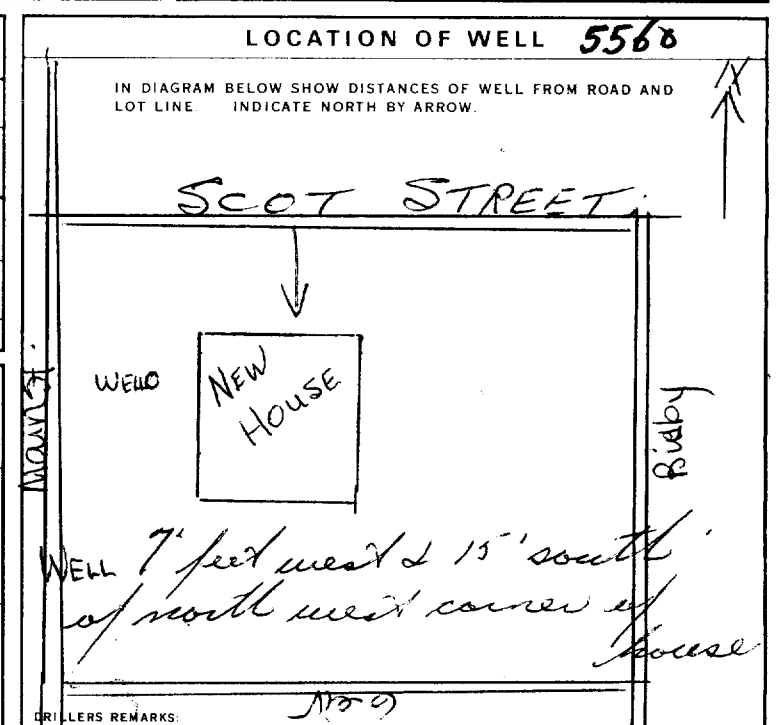
PUMP INTAKE SET AT: 50 FEET

WATER AT END OF TEST: 1  CLEAR 2  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 050 FEET

RECOMMENDED PUMP RATE: 0005 GPM



**FINAL STATUS OF WELL** 1

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

**WATER USE** 01

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

**METHOD OF DRILLING** 2

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **LUNNEY WELL DRILLING LTD** LICENCE NUMBER: **3406**

ADDRESS: **36 BUENA VISTA DR CRANVILLE**

NAME OF DRILLER OR BORER: **GORDON LUNNEY** LICENCE NUMBER: **3406**

SIGNATURE OF CONTRACTOR: *Gordon Lunney* SUBMISSION DATE: \_\_\_\_\_

**OFFICE USE ONLY**

DATA SOURCE: 1 CONTRACTOR: 3406 DATE RECEIVED: 240775

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.S8 P KO WI



MINISTRY OF THE ENVIRONMENT  
The Ontario Water Resources Act  
**WATER WELL RECORD**

40P/16w

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

11 1701929 17701  
COUNTY OR DISTRICT: DUFFERIN  
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: EAST LUTHER GRAND VALLEY  
CON., BLOCK, TRACT, SURVEY, ETC.: 2 WS MAIN ST  
LOT: 20  
DATE COMPLETED: DAY 16 MO. 07 YR. 75  
ELEVATION: 60750 5 1495 5 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY			0	18
GREY	LIMESTONE			18	21
WHITE	LIMESTONE			21	35

31 0018605 0021215 0035115  
32

41 WATER RECORD

10-13	1 <input checked="" type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	20
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

SCREEN

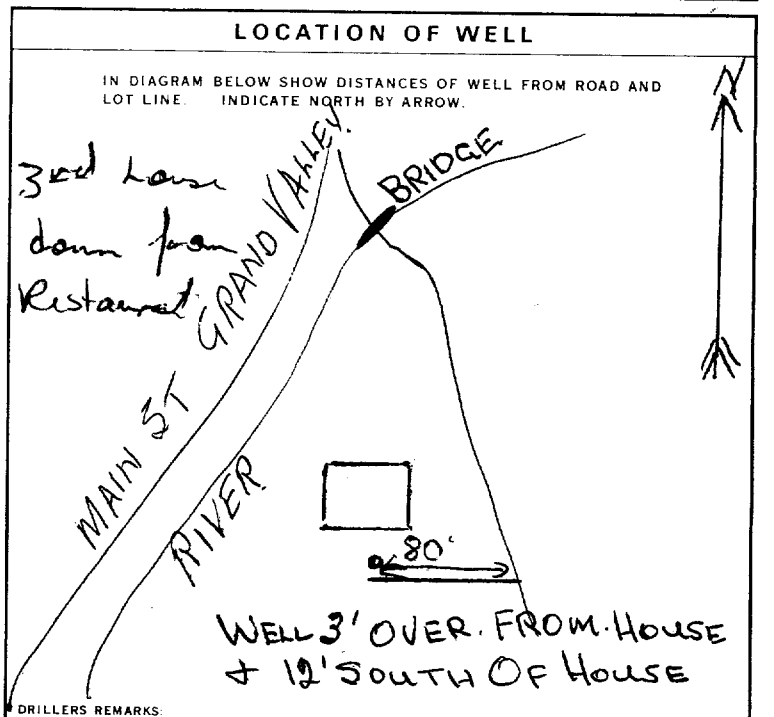
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	
	41-44	80

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE GPM: 00/2	DURATION OF PUMPING HOURS: 02 MINS: 00
STATIC LEVEL	011017 FEET	WATER LEVELS DURING PUMPING	1 <input checked="" type="checkbox"/> PUMPING 2 <input type="checkbox"/> RECOVERY
19-21	011017 FEET	15 MINUTES: 011011 FEET	30 MINUTES: 011011 FEET
22-24	011017 FEET	45 MINUTES: 011011 FEET	60 MINUTES: 011011 FEET
IF FLOWING, GIVE RATE		PUMP INTAKE SET AT: 18 FEET	WATER AT END OF TEST: 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	1 <input checked="" type="checkbox"/> SHALLOW 2 <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 0/8 FEET	RECOMMENDED PUMPING RATE: 00/0 GPM



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 01 DOMESTIC

METHOD OF DRILLING: 2  ROTARY (CONVENTIONAL)

CONTRACTOR: HUNNEY WELL DRILLING LIMITED, 36 BUENA VISTA DR CRANCEVILLE, GORDON HUNNEY

LICENCE NUMBER: 3406

SIGNATURE OF CONTRACTOR: Gordon Hunney

OFFICE USE ONLY

DATA SOURCE: 3406, DATE RECEIVED: 240775

DATE OF INSPECTION: Aug 15/77, INSPECTOR: EQ

REMARKS: CSS.S8 P WI





Ontario

# WATER WELL RECORD

407/16W

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

11 1701997 17003 CAN 03

COUNTY OR DISTRICT: **Dufferin** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Eastluther** CON., BLOCK, TRACT, SURVEY, ETC.: **conc. 3** 031

R.R.# 1, GRAND VALLEY, Ontario

DATE COMPLETED 48-53  
DAY 23 MO. 08 YR. 75

361.300 5 1580 5 23

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	topsoil			0	1
Brown	clay	stones		1	15
"	"	gravel		15	40
"	clay, sand	"		40	85
"	fine sand			85	94
Gray	rock			94	140
Brown/gray	"			140	215
L. Brown	"			215	245
M. Brown	"			245	352
L. Gray/Brown	rock			352	385
L. Gray	rock			385	398
D. Gray	rock			398	425

31	0001 02	001566512	004060511	00856052811	0094608	0140226	1
32	0215626	0245626	0352626	0385226	0398226	0425226	

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0115	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 18 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0220	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 19 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0395	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 24 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 29 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 34 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
08"	1 <input checked="" type="checkbox"/> STEEL 12 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	264	00095	13-16
08"	1 <input type="checkbox"/> STEEL 19 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		951425	20-23
	1 <input type="checkbox"/> STEEL 26 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 0056 GPM. DURATION OF PUMPING: 24 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
067	170	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		26-28	29-31	32-34	35-37

IF FLOWING, GIVE RATE: \_\_\_\_\_ GPM.

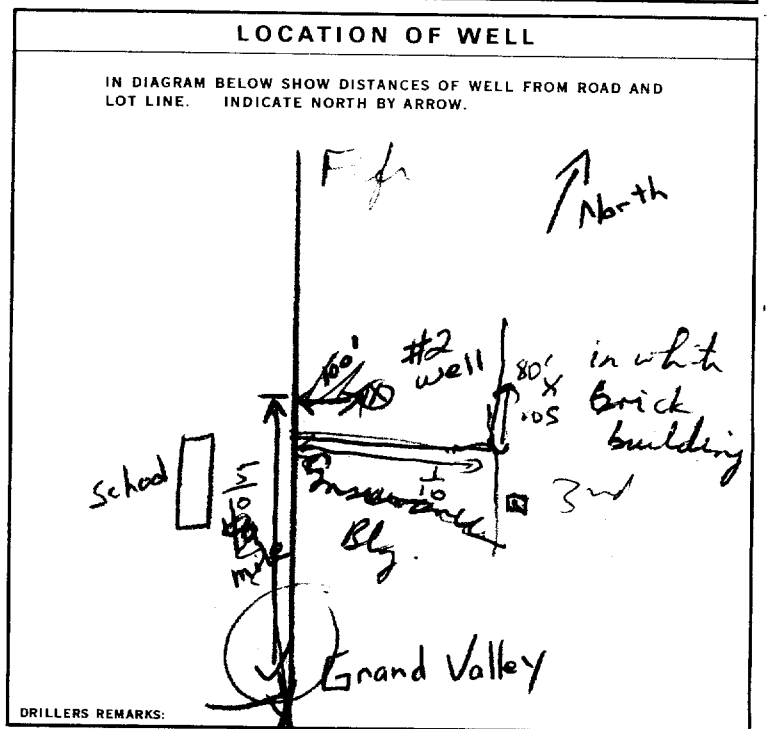
PUMP INTAKE SET AT: \_\_\_\_\_ FEET

WATER AT END OF TEST: 1  CLEAR 2  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 200 FEET

RECOMMENDED PUMPING RATE: 0056 GPM.



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

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

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **GRAHAM WELL DRILLING LIMITED** LICENCE NUMBER: **2336**

ADDRESS: **212 Waverley Drive, GUELPH, Ontario**

NAME OF DRILLER OR BORER: **Jim Hawkins** LICENCE NUMBER: **22W71**

SIGNATURE OF CONTRACTOR: *[Signature]* SUBMISSION DATE: DAY **26** MO. **8** YR. **75**

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **2336** DAY RECEIVED: **061075**

DATE OF INSPECTION: **Aug 15/77** INSPECTOR: *[Signature]*

REMARKS:

CSS.S. **P**  
**WI**



Ontario

# WATER WELL RECORD

40P/16 WH

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

11

1702032

MUNICIPALITY 17701

CON.

COUNTY OR DISTRICT <b>DUFFERIN</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>VILLAGE OF GRAND VALLEY</b>	CON., BLOCK, TRACT, SURVEY, ETC.	LOT <b>C PLAN</b>
DATE COMPLETED <b>10</b> 48-53 DAY <b>13</b> MO <b>Oct</b> YR <b>75</b>			
PHON. NO. <b>86 0550</b>	RC <b>5</b>	ELEVATION <b>1490</b>	RC <b>5</b>
BASIN CODE <b>23</b>			

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<b>BROWN CLAY</b>				<b>0</b>	<b>24</b>
<b>WHITE LIMESTONE</b>				<b>24</b>	<b>95</b>

31	0024605	0095115
----	---------	---------

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
10-13 <b>0095</b>	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input checked="" type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
<b>04</b>	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	<b>188</b>	<b>0</b>	<b>26</b>
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

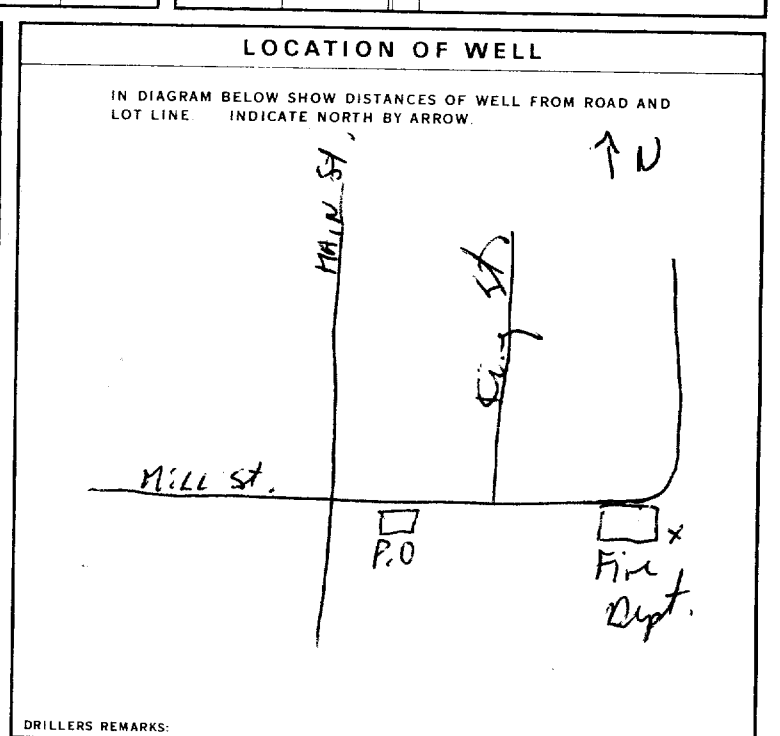
SIZE(S) OF OPENING (SLOT NO.)	31-33	DIAMETER	34-38	LENGTH	39-40
MATERIAL AND TYPE		INCHES		FEET	
		DEPTH TO TOP OF SCREEN		41-44	80

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	10 PUMPING RATE <b>0007</b> GPM	11-14 DURATION OF PUMPING 15-16 HOURS <b>01</b> 17-18 MINS <b>00</b>
STATIC LEVEL <b>003</b> FEET	WATER LEVEL END OF PUMPING <b>080</b> FEET	25 WATER LEVELS DURING 1 <input type="checkbox"/> PUMPING 2 <input checked="" type="checkbox"/> RECOVERY
IF FLOWING, GIVE RATE	38-41 PUMP INTAKE SET AT <b>80</b> FEET	WATER AT END OF TEST 1 <input type="checkbox"/> CLEAR 2 <input checked="" type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING <b>080</b> FEET	RECOMMENDED PUMPING RATE <b>0005</b> GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

1 <input type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
9 <input checked="" type="checkbox"/> OTHER <b>FIRE DEPT.</b>	0 <input type="checkbox"/> NOT USED

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR <b>LUNNEY WELL DRILLING LTD</b>	LICENCE NUMBER <b>3406</b>
ADDRESS <b>36 BUENA VISTA DRIVE ORANGEVILLE</b>	
NAME OF DRILLER OR BORER <b>GORDON LUNNEY</b>	LICENCE NUMBER <b>3406</b>
SIGNATURE OF CONTRACTOR <i>Gordon Lunney</i>	SUBMISSION DATE DAY <b>8</b> MO <b>12</b> YR <b>75</b>

**OFFICE USE ONLY**

DATA SOURCE <b>1</b>	CONTRACTOR <b>3406</b>	DATE RECEIVED <b>161275</b>
DATE OF INSPECTION <b>May 20/77</b>		INSPECTOR <b>EG</b>
REMARKS		
CSS.S8		P WI



Ontario

# WATER WELL RECORD

408/16 WH

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

11 1702086

MUNICIPALITY 17003 COW LOT 03

COUNTY OR DISTRICT <b>Dufferin</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>East Luther</b>	CON. BLOCK, TRACT, SURVEY, ETC. <b>3</b>	LOT <b>0.2</b>
Address <b>Grand Valley, Ontario</b>			DATE COMPLETED DAY <b>03</b> MONTH <b>05</b> YEAR <b>76</b>
INCH <b>61000</b>	RC <b>5</b>	ELEVATION <b>1525</b>	RC <b>5</b>
BASIN CODE <b>23</b>			

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
black	topsoil			0	1
brown	clay	stones		1	59
grey	limestone			59	165
brown	limestone			165	195

31 0001802 005960512 0165215 0195615

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0165	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0195	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

DEPTH - FEET	WALL THICKNESS INCHES	MATERIAL
00061	188	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

1  PUMP 2  BAILER

10 PUMPING RATE: 0003 GPM

11-14 DURATION OF PUMPING: 01 HOURS 00 MINS

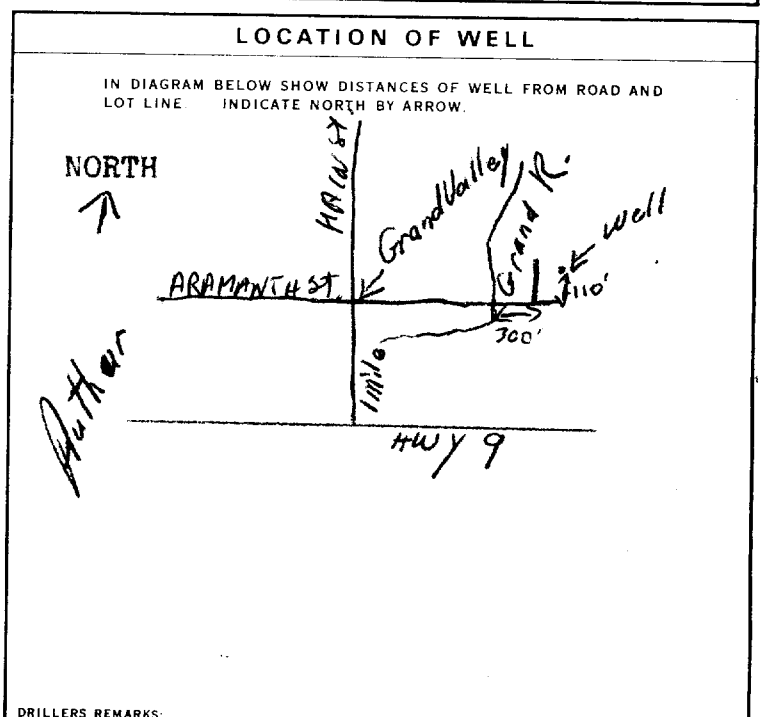
15-16 WATER LEVELS DURING PUMPING: 070 FEET

17-18 WATER AT END OF TEST: 070 FEET

19-21 PUMP INTAKE SET AT: 90 FEET

22-24 RECOMMENDED PUMP TYPE: 090 FEET

25-27 PUMPING RATE: 0003 GPM



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 01 DOMESTIC

METHOD OF DRILLING: 4 ROTARY (AIR)

CONTRACTOR: Hugh Morrison Well Drilling Ltd. 3740

Address: R. R. 5, Mount Forest, Ont.

NAME OF DRILLER OR BORER: Hugh Morrison

Signature: Hugh Morrison

OFFICE USE ONLY

DATA SOURCE: 1

CONTRACTOR: 3740

DATE RECEIVED: 100570

DATE OF INSPECTION: May 20/77

INSPECTOR: EG

REMARKS:

CSS.S8 P WI



Ontario

# WATER WELL RECORD

40P/16 NH

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

11 | 1702117 | 17701 | CON. |

COUNTY OR DISTRICT: DUFFERIN | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: EAST LUTHER SCOTT | CON. | 14 | 15 | 22 | 23 | 24 |

GRAND VALLEY | LOT: 99 | DATE COMPLETED: 27 MAY 76 |

ELBY ST GRAND VALLEY | ELEVATION: 261.000 | 5 | 157.5 | 5 | BASIN CODE: 23 |

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY			2	
BROWN	GRAVEL			2	43
GREY	LIMESTONE			43	140

31 | 0002605 | 0043611 | 0140215 |

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input checked="" type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
4	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1.88	0	13-16
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1  PUMP 2  BAILER

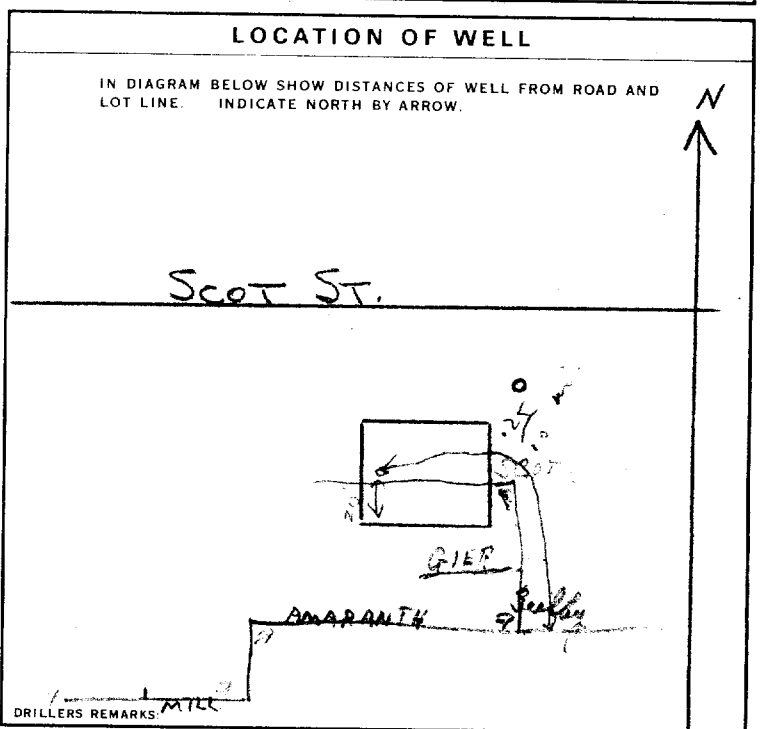
PUMPING RATE: 0010 GPM | DURATION OF PUMPING: 03 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
015	035	15 MINUTES: 015	30 MINUTES: 015	45 MINUTES: 015	60 MINUTES: 015

IF FLOWING, GIVE RATE: 035 GPM

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 035 FEET | RECOMMENDED PUMPING RATE: 0008 GPM



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 1  DOMESTIC

METHOD OF DRILLING: 2  ROTARY (CONVENTIONAL)

CONTRACTOR: LUNNEY WELL DRILLING LTD | LICENCE NUMBER: 3406

ADDRESS: 36 BUENA VISTA DR CRANVILLE

NAME OF DRILLER OR BORER: GORDON LUNNEY | LICENCE NUMBER: 3406

SIGNATURE OF CONTRACTOR: Gordon Lunney | SUBMISSION DATE: DAY 7 MO. 7 YR. 76

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 3406 | DATE RECEIVED: 130770

DATE OF INSPECTION: May 26/77 | INSPECTOR: [Signature]

REMARKS:

CSS.S8 | P | WI







# WATER WELL RECORD

40P/16W

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

11 | 1702249 | 17701 | CON. 15 | 22 23 24

COUNTY OR DISTRICT: **DUFF** | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **E LUTHER** | CON. BLOCK, TRACT, SURVEY, ETC.: **PLAN 29 A** | LOT: **57**

DATE: DAY **30** | MONTH **08** | YEAR **76**

ELEVATION: **60.850** | **67.495** | **65.423**

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	OVERBURDEN	C. GRAVEL - STONES		0	25
GREY	ROCK	CLAY RIDGES		25	36
GREY	ROCK		HARD	36	60
LIGHT GREY	ROCK	LIMESTONE		60	165

31 | 0025625 | 0036226 | 00574 | 0060226 | 0165245

41 WATER RECORD

WATER FOUND AT - FEET: 10-13, 15-18, 20-23, 25-28, 30-33

KIND OF WATER: 1 FRESH, 2 SALTY, 3 SULPHUR, 4 MINERAL

0120-765\*

51 CASING & OPEN HOLE RECORD

INSE DIAL INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04	1 STEEL	.188	0	0043
4	2 GALVANIZED		43	165
04	3 CONCRETE			
	4 OPEN HOLE			0165

60 SCREEN

SIZE(S) OF OPENING (SLOT NO.): 31-33 | DIAMETER: 34-38 | LENGTH: 39-40

MATERIAL AND TYPE: | DEPTH TO TOP OF SCREEN: 41-44

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	16-17
18-21	22-25
26-29	30-33

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP, 2 BAILER

PUMPING RATE: 0006 GPM

DURATION OF PUMPING: 03 HOURS 00 MINS

STATIC LEVEL: 005 FEET

WATER LEVEL END OF PUMPING: 025 FEET

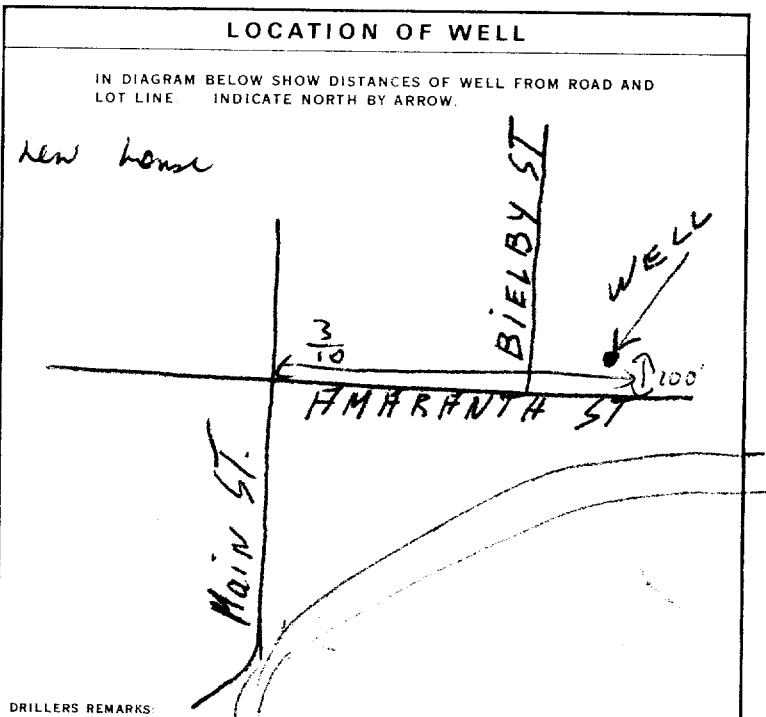
WATER LEVELS DURING: 15 MINUTES: 007 FEET, 30 MINUTES: 005 FEET, 45 MINUTES: 005 FEET, 60 MINUTES: 005 FEET

PUMP INTAKE SET AT: 40 FEET

RECOMMENDED PUMP TYPE: 1 SHALLOW, 2 DEEP

RECOMMENDED PUMP SETTING: 045 FEET

RECOMMENDED PUMPING RATE: 0005 GPM



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

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

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

CONTRACTOR: Rudy's Drilling, License Number: 2332, Address: RR1 Hillsburg

NAME OF DRILLER OR BORER: Rudy Garbotz, License Number: 2332

SIGNATURE OF CONTRACTOR: Rudy Garbotz

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 2332 | DATE RECEIVED: 270477

DATE OF INSPECTION: Aug 13/77 | INSPECTOR: EA

REMARKS:

CSS.S8 | P. WI





40P/16W

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

11

1702312

MUNICIPALITY 17003

CON. 03

COUNTY OR DISTRICT <b>Dufferin</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>East Luther</b>	CON., BLOCK, TRACT, SURVEY, ETC. <b>Con. 3</b>	DATE COMPLETED DAY <b>04</b> MO. <b>11</b> YR. <b>77</b>
[Redacted]			DATE COMPLETED 48-53
[Redacted]			DAY <b>04</b> MO. <b>11</b> YR. <b>77</b>
60850	5	ELEVATION 1500	5
		BASIN CODE 23	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
black	topsoil			0	1
brown	gravel			1	23
brown	clay			23	27
brown	gravel			27	33
grey	limestone			33	170
brown	limestone			170	190

32

0001802 0023611 0027605 0033611 0170215 0190615

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0190	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
04	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0 0035
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		20-23
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		27-30

SCREEN

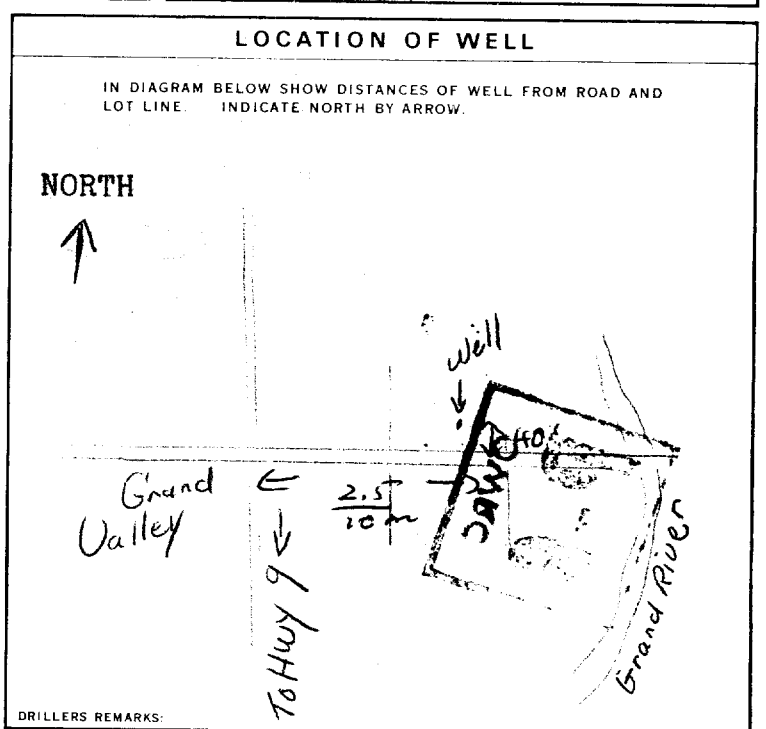
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE 0008 GPM	DURATION OF PUMPING 01 15-16 HOURS 00 17-18 MINS
STATIC LEVEL 003 FEET	WATER LEVEL END OF PUMPING 050 FEET	WATER LEVELS DURING 1 <input checked="" type="checkbox"/> PUMPING 2 <input type="checkbox"/> RECOVERY
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT 70 GPM	WATER AT END OF TEST 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 070 FEET	RECOMMENDED PUMPING RATE 0007 GPM



FINAL STATUS OF WELL

WATER USE

METHOD OF DRILLING

CONTRACTOR

NAME OF WELL CONTRACTOR  
**Hugh Morrison Well Drilling Ltd. 3740**

ADDRESS  
**R. R. 5, Mount Forest, Ont.**

NAME OF DRILLER OR BORER  
**Hugh Morrison**

LICENCE NUMBER  
**3740**

SUBMISSION DATE

OFFICE USE ONLY

DATA SOURCE  
**1**

CONTRACTOR  
**3740**

DATE RECEIVED  
**14-12-77**

DATE OF INSPECTION  
**Aug 10/78**

INSPECTOR  
**SP**

REMARKS

CSS.S8





Ontario

# WATER WELL RECORD

40P/16W

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

11

1702333

MUNICIP. 17003

CON. CAN

03

COUNTY OR DISTRICT

DUFF

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE

E. LUTHER

CON., BLOCK, TRACT, SURVEY, ETC.

3

LOT 25-27

031

5 BIELBY ST

DATE COMPLETED

DAY 10 MO 05 YR 77

360950

5

ELEVATION 1505

5

BASIN CODE 23

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BLACK	TOPSOIL			0	2
BROWN	C. GRAVEL	STONES - BOULDERS		2	31
BROWN	C. SAND	STONES		31	42
GREY	ROCK		HARD	42	60
LIGHT GREY	ROCK			60	135
LIGHT BROWN	ROCK			135	165

31 0002802 0031631/12/13 0042610/12 006022673 013522675 016542675

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0157-10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
			FROM TO
04	<input checked="" type="checkbox"/> STEEL	1.88	0 0047
	<input type="checkbox"/> GALVANIZED		
	<input type="checkbox"/> CONCRETE		
	<input checked="" type="checkbox"/> OPEN HOLE		47 165
	<input type="checkbox"/> STEEL		
	<input type="checkbox"/> GALVANIZED		
	<input type="checkbox"/> CONCRETE		
	<input checked="" type="checkbox"/> OPEN HOLE		0165
	<input type="checkbox"/> STEEL		
	<input type="checkbox"/> GALVANIZED		
	<input type="checkbox"/> CONCRETE		
	<input type="checkbox"/> OPEN HOLE		

SCREEN

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

MATERIAL AND TYPE

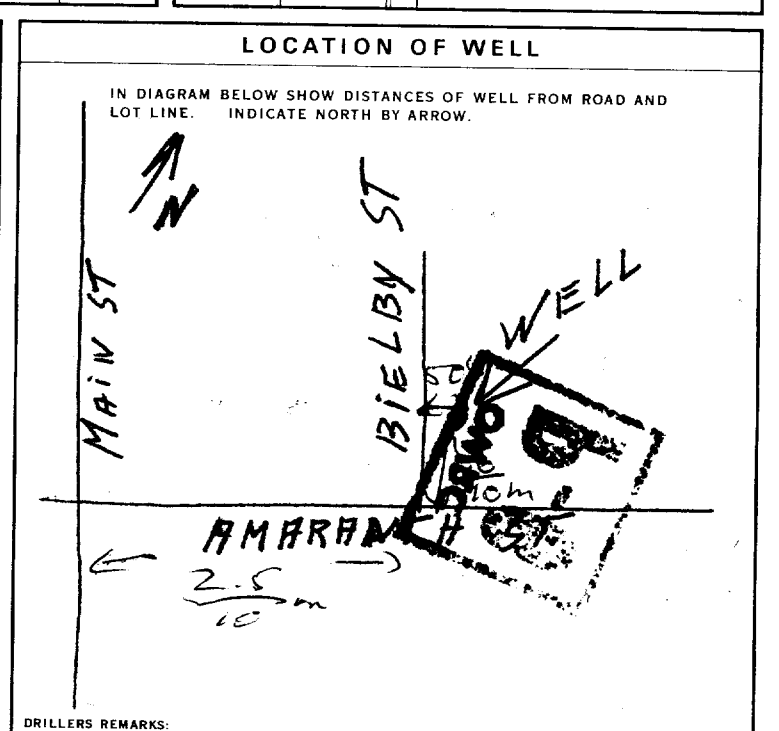
DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	0006 GPM	02 15-16 30 17-18 HOURS MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
006	017	15 MINUTES 007 26-28 30 MINUTES 006 29-31 45 MINUTES 006 32-34 60 MINUTES 006 35-37
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	35 GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input checked="" type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	035	0005



54 FINAL STATUS OF WELL

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

55-56 WATER USE

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

57 METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR: Rudy's Drilling LICENCE NUMBER: 2332  
ADDRESS: RRI Hillsburg

NAME OF DRILLER OR BORER: Rudy Garbotz LICENCE NUMBER: 2332  
SIGNATURE OF CONTRACTOR: Rudy Garbotz SUBMISSION DATE: DAY MO. YR.

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 2332 DATE RECEIVED: 210278  
DATE OF INSPECTION: Aug 11/78 INSPECTOR: SP  
REMARKS: NOT PLOTTED ON MASTER MAP. new house



Ontario

40P/16W

# WATER WELL RECORD

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

11 1702335

MUNICIP. 17.003

CON. GON

03

COUNTY OR DISTRICT: **DUFF** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **E. LUTHER** CON., BLOCK, TRACT, SURVEY, ETC.: **3** LOT: **031**

DATE COMPLETED: DAY **27** MO **96** YR. **77**

360 850 5 ELEVATION 1500 5 BASIN CODE 23

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	OVERBURDEN / C. GRAVEL			0	30
BROWN	C. SAND - STONES			30	36
BLUE-GREY	ROCK			36	55
LIGHT GREY	ROCK			55	165

31 003062531 003661012 0055926 016522675

32

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0150-10-13 165	<input checked="" type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
			FROM TO
04	<input checked="" type="checkbox"/> STEEL	.188	0 51
04	<input checked="" type="checkbox"/> OPEN HOLE		51 165

### SCREEN

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

### 61 PLUGGING & SEALING RECORD

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

### 71 PUMPING TEST

PUMPING TEST METHOD:  PUMP  BAILER

PUMPING RATE: 0006 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
011	021	15 MINUTES: 012
		30 MINUTES: 011
		45 MINUTES: 011
		60 MINUTES: 011

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 035 FEET

RECOMMENDED PUMPING RATE: 0005 GPM

### LOCATION OF WELL

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

DRILLERS REMARKS:

### FINAL STATUS OF WELL

1  WATER SUPPLY

### WATER USE

01 1  DOMESTIC

### METHOD OF DRILLING

2 1  ROTARY (CONVENTIONAL)

CONTRACTOR: **RUDY'S WELL DRILLING** LICENCE NUMBER: **2332**

ADDRESS: **RRI Hillsburg**

NAME OF DRILLER OR BORER: **RUDY CHARLOT** LICENCE NUMBER: **2332**

SIGNATURE OF CONTRACTOR: *Rudy Charlott*

DATA SOURCE: **1** CONTRACTOR: **2332** DATE RECEIVED: **2 10278**

DATE OF INSPECTION: **Aug 11/78** INSPECTOR: *[Signature]*

REMARKS: **NOT PLOTTED ON MASTER MAP.**

CSS.58 WI





# WATER WELL RECORD

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

11

1702503

MUNICIPALITY 17701

CON. 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

COUNTY OR DISTRICT

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE

CON., BLOCK, TRACT, SURVEY, ETC

LOT 25-27

DUFF

E. BARRA. Grand Valley

PLAN 29A

81

CROZIER ST.

DATE COMPLETED DAY 23 MONTH July YEAR 78

ELEVATION 60950 VALLEY 1525 5 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BLACK	Top soil			0	2
BROWN	CLAY	STONES		2	19
BROWN	GRAVEL	STONES		19	35
BROWN	CLAY	HARD PAN		35	46
GREY	ROCK	LIMESTONE		46	77

31 0002802 001960512 003561112 004660514 007721215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/8	0 50 0050
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		50 0067 77
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		27-30

SCREEN

SIZE (S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		50

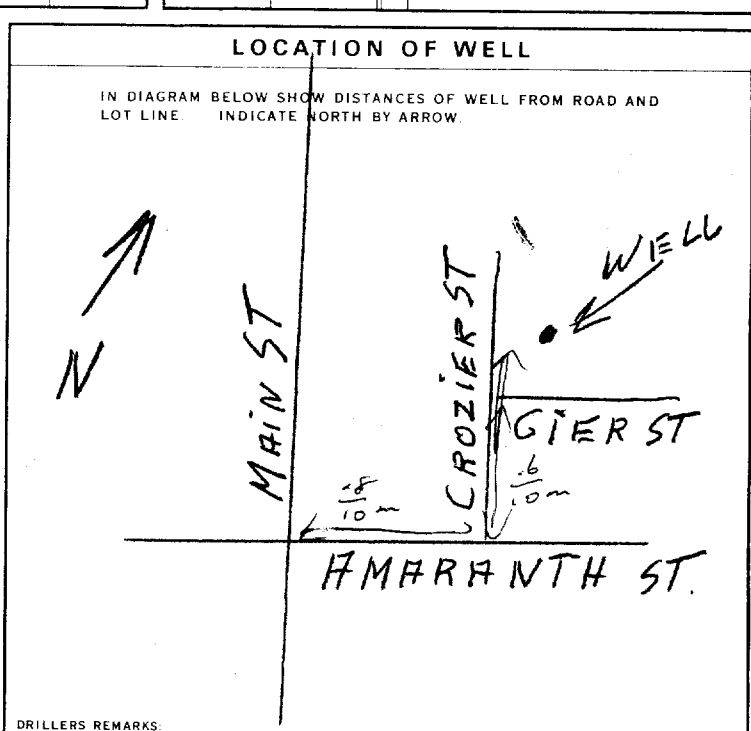
MATERIAL AND TYPE DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	0011 GPM	01 15-16 00 HOURS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
017	018	15 MINUTES 017 29-31 30 MINUTES 017 32-34 45 MINUTES 017 60 MINUTES 017
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	30 GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	040	5 0004 7 10



FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR: Rudy's Well Drilling LICENCE NUMBER: 2332  
 ADDRESS: RRI Hillsburg.  
 NAME OF DRILLER OR BORER: Rudy Garbotz LICENCE NUMBER: 2332  
 SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY \_\_\_\_ MO \_\_\_\_ YR \_\_\_\_

OFFICE USE ONLY

DATA SOURCE: 1 2332 CONTRACTOR: 58 2332 DATE RECEIVED: 59-62 20 03 79  
 DATE OF INSPECTION: August 1978 INSPECTOR: [Signature]  
 REMARKS: CSS.S8



# WATER WELL RECORD

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

11 1702605 17003 C4N 03

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER** CON. BLOCK, TRACT, SURVEY, ETC.: **111** LOT: **031**

ADDRESS: **10 SCOTT ST. GRAND VALLEY** DATE COMPLETED: DAY **25** MO **07** YR **79**

DEPTH: **8.61** 0.50 RC **5** ELEVATION: **152.5** RC **5** BASIN CODE: **23** NT

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Gravel - Stones - Clay			0	25
	Clay - Stones			25	41
	Limestone			41	95
	Limestone	(Porus)		95	111

31 0025 111 1205 0041 0512 0095 15 0111 1580

32

**41 WATER RECORD**

WATER QUANTITY: **0095** **95** **111**

KIND OF WATER	19-21	22-24	25-28	29-31	32-34	35-37	38-40
1 <input checked="" type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH	1 <input type="checkbox"/> FRESH
2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY	2 <input type="checkbox"/> SALTY
3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR	3 <input type="checkbox"/> SULPHUR
4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL	4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	1 <input checked="" type="checkbox"/> STEEL		13-16
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		
17-18	1 <input type="checkbox"/> STEEL		20-23
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		
24-25	1 <input type="checkbox"/> STEEL		27-30
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		

04" 00047 47 0111

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.): 31-33 DIAMETER: 34-38 LENGTH: 39-40

MATERIAL AND TYPE: INCHES: FEET: DEPTH TO TOP OF SCREEN: 41-44 30

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: **0010** GPM

DURATION OF PUMPING: 01 HOURS 30 MINS

STATIC LEVEL: 19-21 **018** FEET

WATER LEVEL END OF PUMPING: 22-24 **020** FEET

WATER LEVELS DURING PUMPING: 15 MINUTES: 26-28 **020** FEET 30 MINUTES: 29-31 **020** FEET 45 MINUTES: 32-34 **020** FEET 60 MINUTES: 35-37 **020** FEET

IF FLOWING, GIVE RATE: 38-41

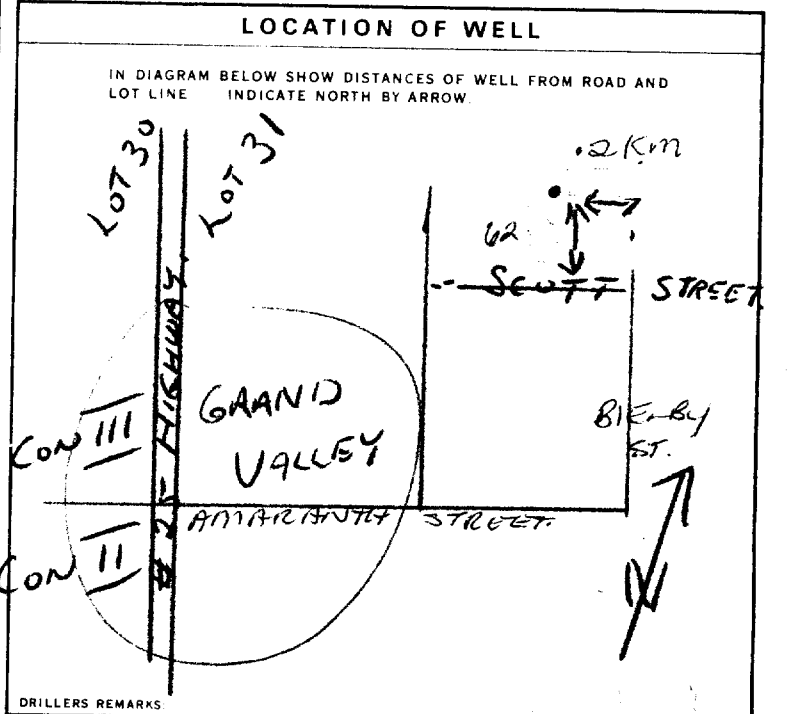
PUMP INTAKE SET AT: 43-45 **040** FEET

WATER AT END OF TEST: 46-49 **0010** GPM

RECOMMENDED PUMP TYPE: 1  SHALLOW 2  DEEP

RECOMMENDED PUMP SETTING: 43-45 **040** FEET

RECOMMENDED PUMPING RATE: 46-49 **0010** GPM



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

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

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

**CONTRACTOR** Lang Well Drilling Ltd LICENCE NUMBER: 3317

ADDRESS: R.R. 1 Hillsburg Ont.

NAME OF DRILLER OR BORER: Roy LANG LICENCE NUMBER: 3317

SIGNATURE OF CONTRACTOR: Roy Lang SUBMISSION DATE: DAY 25 MO 7 YR 79

**OFFICE USE ONLY**

DATA SOURCE: 1 3317 DATE RECEIVED: 15 01 80

DATE OF INSPECTION: June 18, 1980 INSPECTOR: [Signature]

REMARKS: CSS 88-9W



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

(11) 1702607 MUNICIP 17003 CON. C9N LOT 03

COUNTY OR DISTRICT: Dufferin TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: EAST LUTHER CON. BLOCK, TRACT, SURVEY, ETC.: III LOT 031

DATE COMPLETED: DAY 16 MO 05 YR 79

GRID: 61750 5 1525 5 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Clay - Rocks			0	50
	Limestone			50	202

31 01050 0512 0202 15

41 WATER RECORD

WATER TYPE: 0195

KIND OF WATER: 1  FRESH 3  SULPHUR 2  SALTY 4  MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
05"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	06055
05"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		55 0202

SCREEN

SIZE(S) OF OPENING (SLOT NO.): 31-33 DIAMETER: 34-38 LENGTH: 39-40

MATERIAL AND TYPE: INCHES: FEET: DEPTH TO TOP OF SCREEN: 41-44 80

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

1  PUMP 2  BAILER

PUMPING RATE: 0009 GPM DURATION OF PUMPING: 02 HOURS 00 MINS

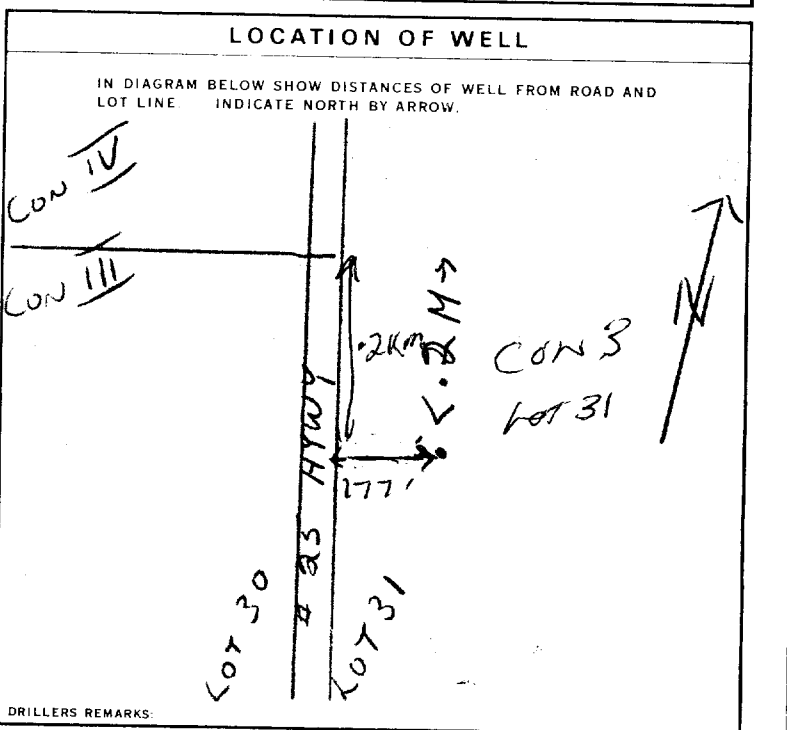
STATIC LEVEL: 005 FEET WATER LEVEL END OF PUMPING: 070 FEET

WATER LEVELS DURING: 15 MINUTES: 26-28 FEET 30 MINUTES: 29-31 FEET 45 MINUTES: 32-34 FEET 60 MINUTES: 35-37 FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 090 FEET

RECOMMENDED PUMPING RATE: 0009 GPM



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

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

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

CONTRACTOR: LANG WELL DRILLING LTD LICENCE NUMBER: 3317 ADDRESS: RR#1 HILLSBURGH ONT. NAME OF DRILLER OR BORER: BOY LANG LICENCE NUMBER: 3317 SIGNATURE OF CONTRACTOR: BOY LANG SUBMISSION DATE: DAY 16 MO 5 YR 79

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3317 DATE RECEIVED: 15 01 80

DATE OF INSPECTION: June 18, 1980 INSPECTOR: [Signature]

REMARKS: CSS AW

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

11 1702609

MUNICIPALITY 17003 CON. No. 102

COUNTY OR DISTRICT: Dufferin  
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther  
CON. BLOCK, TRACT, SURVEY, ETC.: Con 2. Lot 31  
DATE COMPLETED: DAY 26 MO 09 YR 79  
ELEVATION: 860.750  
BASIN CODE: 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Top Soil			0	1
Brown	gravel			1	14
Gray	Hard Pan			14	23
Brown	Shail	Some	gravel pockets	23	37

31 0001802 0018611 0023214 0037617

41 WATER RECORD

WATER FOUND: 0037  
KIND OF WATER:  FRESH,  SALTY,  SULPHUR,  MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
05"	STEEL	188	0-22
05"	STEEL		22-37

SCREEN

SIZE(S) OF OPENING (SLOT NO.): 31-33  
DIAMETER: 34-38  
LENGTH: 39-40  
MATERIAL AND TYPE: 41-44  
DEPTH TO TOP OF SCREEN: 45

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1  PUMP, 2  WATER

PUMPING RATE: 00155 GPM

DURATION OF PUMPING: 01 HOURS, 00 MINS

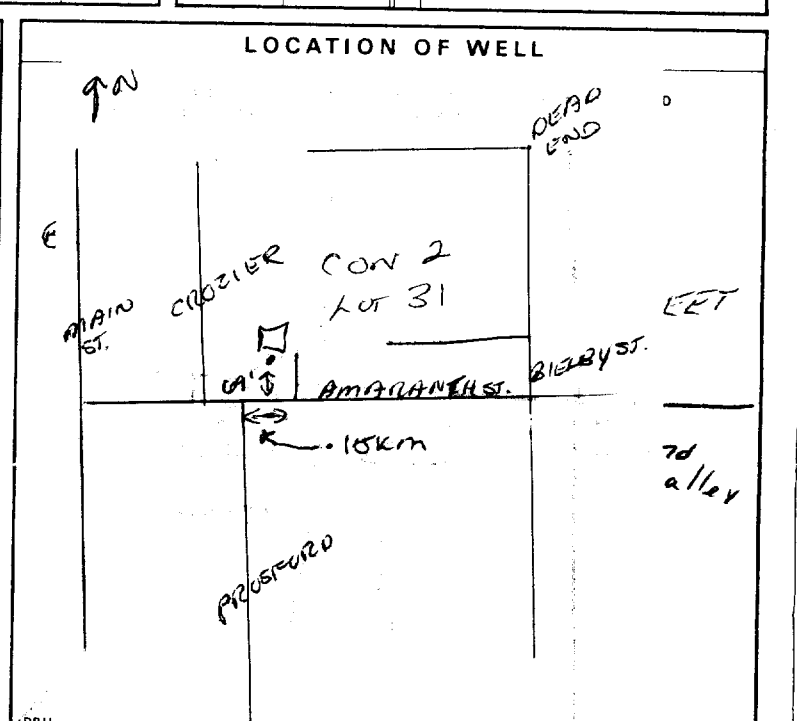
WATER LEVELS DURING PUMPING: 19-21: 015 FEET, 22-24: 015 FEET

PUMP INTAKE SET AT: 20 FEET

RECOMMENDED PUMP TYPE:  SHALLOW,  DEEP

RECOMMENDED PUMP SETTING: 022 FEET

RECOMMENDED PUMP RATE: 0000 GPM



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 01  DOMESTIC

METHOD OF DRILLING: 2  ROTARY (CONVENTIONAL)

CONTRACTOR: RIER'S well Drilling, 1544  
ADDRESS: #3 Authur  
NAME OF DRILLER OR BORER: LARRY ARIER, 1544  
SIGNATURE OF CONTRACTOR: [Signature]  
SUBMISSION DATE: 26 MO 9 YR 79

OFFICE USE ONLY

DATE OF INSPECTION: June 18, 1980  
INSPECTOR: [Signature]  
REMARKS: CSS.S8 P-9W.



Ministry  
of the  
Environment  
Ontario

# The Ontario Water Resources Act WATER WELL RECORD

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

11

1702645

MUNICIP

CON

COUNTY OR DISTRICT: [Redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: St. Lawrence (Grand Valley) #2 CON. BLOCK, TRACT, SURVEY, ETC.: [Redacted] LOT: 825-27

DATE COMPLETED: APR 30 48-53  
DAY: 22 MO: 10 YR: 77

ADDRESS: Pointstord Box 347 Grand Valley

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<u>Brown</u>	<u>Clay</u>	<u>Boulders</u>		<u>0</u>	<u>28</u>
<u>Blue</u>	<u>Limestone</u>			<u>28</u>	<u>52</u>

31 [Scale]

32 [Scale]

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13 <u>52</u>	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11 <u>5"</u>	1 <input checked="" type="checkbox"/> STEEL	<u>188</u>	<u>0</u>	<u>32</u>
17-18 <u>5"</u>	1 <input type="checkbox"/> STEEL		<u>32</u>	<u>52</u>
24-25	1 <input type="checkbox"/> STEEL			

### SCREEN

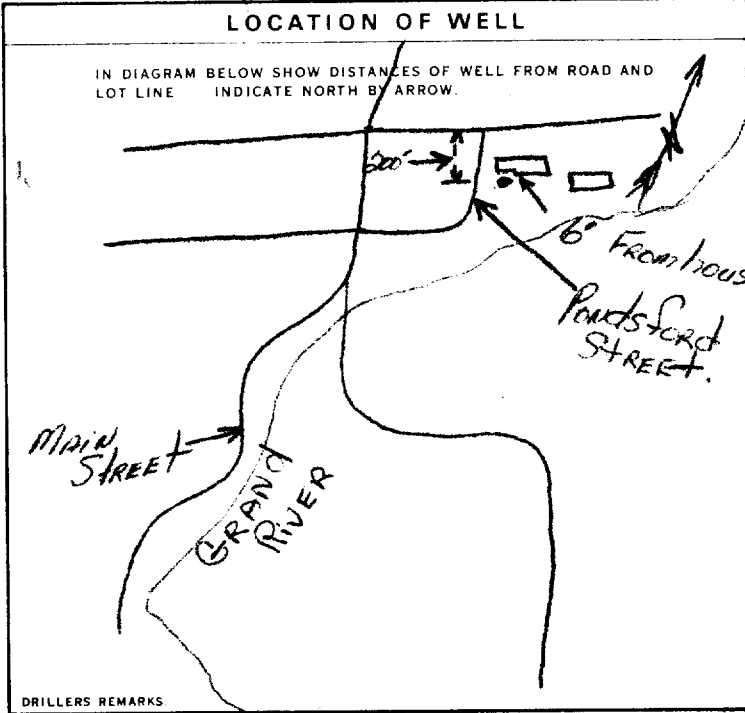
SIZE (S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN
		FEET

### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT, LEAD PACKER, ETC.)
10-13 <u>0</u>	<u>32</u>	<u>CLAY SLURRY</u>
18-21		
26-29		

### 71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	<u>4 1/2</u> GPM	15-18 HOURS <u>0</u> MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
<u>5</u> FEET	<u>30</u> FEET	15 MINUTES: <u>30</u> FEET 30 MINUTES: <u>-</u> FEET 45 MINUTES: <u>-</u> FEET 60 MINUTES: <u>30</u> FEET
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	<u>30</u> FEET	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input checked="" type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	<u>30</u> FEET	<u>4 1/2</u> GPM



### FINAL STATUS OF WELL

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

### WATER USE

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

### METHOD OF DRILLING

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

### CONTRACTOR

NAME OF WELL CONTRACTOR: LUNNEY WELL DRILLING LICENCE NUMBER: 32341  
ADDRESS: RR #1 LAUREL ONT.  
NAME OF DRILLER OR BORER: N. GERRICK LICENCE NUMBER:  
SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY 23 MO. 10 YR. 77

### OFFICE USE ONLY

DATA SOURCE: 58 CONTRACTOR: 59-62 DATA RECEIVED: 110680 63-68  
DATE OF INSPECTION: INSPECTOR:  
REMARKS:  
CSS.ES

1702689

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

COUNTY OR DISTRICT: **D.C.C.** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER.** CON. BLOCK, TRACT, SURVEY ETC: **III** LOT: **30**  
DATE COMPLETED: DAY **22** MO **11** YR **80**  
Grand Valley Ont.

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Br.	Clay ~ Stones			0	20
Grey	Clay - Stones - Sand			20	82
	Limestone			82	96

31 \_\_\_\_\_ 32 \_\_\_\_\_

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
90-96	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	86
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		86	96
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			

**SCREEN**

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

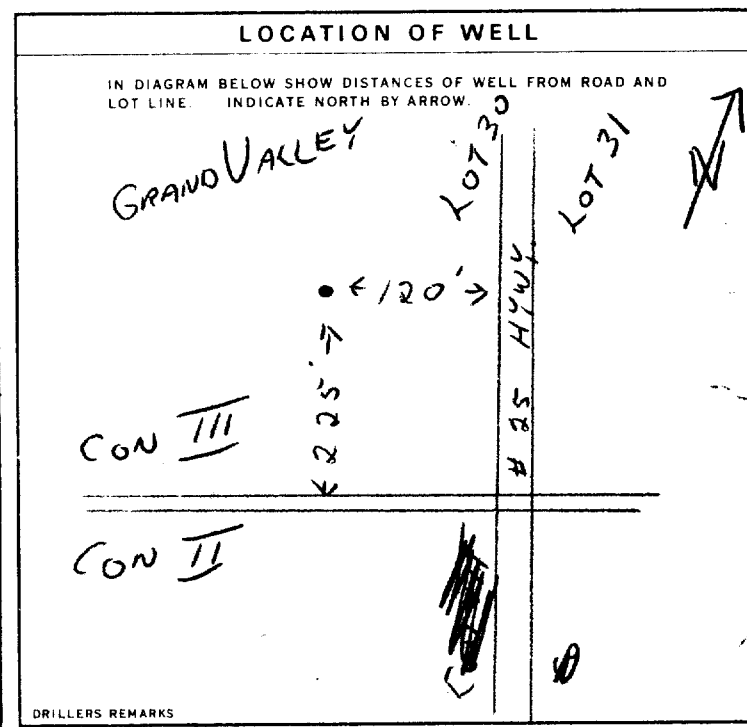
MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER  
PUMPING RATE: **10** GPM DURATION OF PUMPING: **1** HOURS **30** MINS  
STATIC LEVEL: **60** FEET WATER LEVEL END OF PUMPING: **65** FEET  
WATER LEVELS DURING: 15 MINUTES: **26-28** FEET 30 MINUTES: **29-31** FEET 45 MINUTES: **32-34** FEET 60 MINUTES: **65** FEET  
IF FLOWING, GIVE RATE: \_\_\_\_\_ GPM PUMP INTAKE SET AT: **85** FEET WATER AT END OF TEST: 1  CLEAR 2  CLOUDY  
RECOMMENDED PUMP TYPE:  SHALLOW  DEEP RECOMMENDED PUMP SETTING: **85** FEET RECOMMENDED PUMPING RATE: **10** GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **Lang Well Drilling Ltd.** LICENCE NUMBER: **3317**  
ADDRESS: **RR #1, Mississauga Ontario**  
NAME OF DRILLER OR BORER: **Roy Lang** LICENCE NUMBER: **3317**  
SIGNATURE OF CONTRACTOR: **Roy Lang** SUBMISSION DATE: DAY **22** MO **11** YR **80**

**OFFICE USE ONLY**

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: **230181**  
DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
REMARKS: \_\_\_\_\_



1702777

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

11

MUNICIPALITY: \_\_\_\_\_ CON.: \_\_\_\_\_

COUNTY OR DISTRICT: Dufferin TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther CON. BLOCK, TRACT, SURVEY, ETC.: \_\_\_\_\_ LOT: 25-27

DATE COMPLETED: 48-53 81

DATE: DAY \_\_\_\_\_ MO \_\_\_\_\_ YR. 81

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Br.	Clay & Stones			0	20
Gr.	Clay			20	50
	Hardpan		(Stoney)	50	81
Gr+Br.	Limestone			81	220

31 \_\_\_\_\_ 32 \_\_\_\_\_

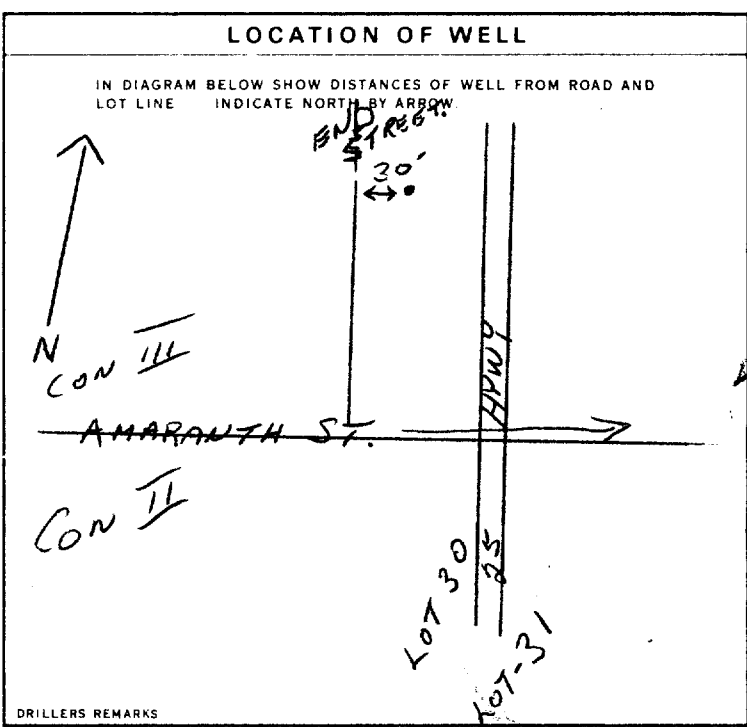
41 WATER RECORD			
WATER FOUND AT - FEET	KIND OF WATER		
10-13	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	14
15-18	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	19
20-23	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	24
25-28	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	29
30-33	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	34-60

51 CASING & OPEN HOLE RECORD				
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	85
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		85	220

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

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

71 PUMPING TEST	PUMPING TEST METHOD		PUMPING RATE	DURATION OF PUMPING		
	1 <input checked="" type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER		10 GPM	15-16 HOURS 2 <input checked="" type="checkbox"/> PUMPING 3 <input type="checkbox"/> RECOVERY	30 MINS	
	STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
	61 FEET	90 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES



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

CONTRACTOR: Highwell Drilling Ltd. LICENCE NUMBER: 3317

ADDRESS: 261 Hillsburgh Ont.

NAME OF DRILLER OR BORER: Roy Lang LICENCE NUMBER: 3317

SIGNATURE OF CONTRACTOR: Roy Lang SUBMISSION DATE: \_\_\_\_\_

OFFICE USE ONLY

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: 20 01 82

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

# WATER WELL RECORD

1702786 PAAN Lot 53

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

11

COUNTY OR DISTRICT Dufferin	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE EAST LUTHER	CON. BLOCK TRACT. SURVEY, ETC. 111	LOT 25-27 31
ADDRESS 104 AMARANTH ST			DATE COMPLETED DAY 29 MO 6 YR 81
MUNICIPALITY GRAND VALLEY		ELEVATION 459	BASIN CODE

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	GRAVEL & CLAY			0	32
	LIMESTONE			32	105

31  
32

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
75-105	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
4"	1 <input checked="" type="checkbox"/> STEEL		0	38
4"	1 <input type="checkbox"/> STEEL		38	105

### SCREEN

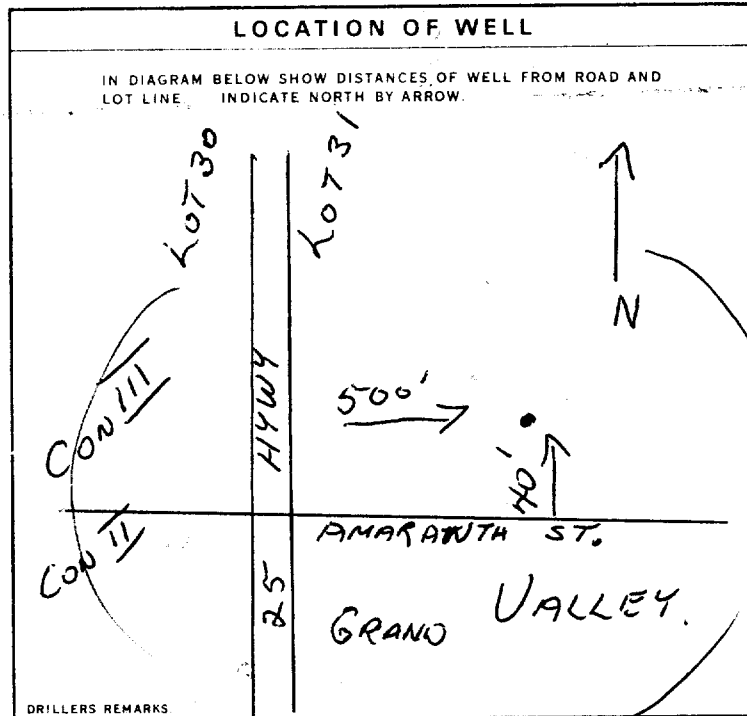
SIZE OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

### 61 PLUGGING & SEALING RECORD

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

### 71 PUMPING TEST

PUMPING TEST METHOD 1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	PUMPING RATE 5 GPM	DURATION OF PUMPING 2 HOURS 15-18 MINS
STATIC LEVEL 11 FEET	WATER LEVEL END OF PUMPING 30 FEET	WATER LEVELS DURING 15 MINUTES: 26-28 FEET 30 MINUTES: 29-31 FEET 45 MINUTES: 32-34 FEET 60 MINUTES: 30 FEET
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 60 FEET	RECOMMENDED PUMPING RATE 5 GPM



### FINAL STATUS OF WELL

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

5  ABANDONED INSUFFICIENT SUPPLY  
6  ABANDONED POOR QUALITY  
7  UNFINISHED

### WATER USE

1  DOMESTIC  
2  STOCK  
3  IRRIGATION  
4  INDUSTRIAL  
5  OTHER

6  COMMERCIAL  
7  MUNICIPAL  
8  PUBLIC SUPPLY  
9  COOLING OR AIR CONDITIONING  
10  NOT USED

### METHOD OF DRILLING

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

6  BORING  
7  DIAMOND  
8  JETTING  
9  DRIVING

### CONTRACTOR

NAME OF WELL CONTRACTOR: LANG WELL DRILLING  
ADDRESS: RR 1 HILLSBURGH  
NAME OF DRILLER OR BORER: ROY LANG  
SIGNATURE: Roy Lang

LICENCE NUMBER: 3317  
SUBMISSION DATE: DAY 29 MO 6 YR 81

### OFFICE USE ONLY

DATA SOURCE: 58 CONTRACTOR: 59-62 DATE RECEIVED: 20 01 82

DATE OF INSPECTION: INSPECTOR:

REMARKS:





# WATER WELL RECORD

1702977

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

11

MUNICIPALITY: \_\_\_\_\_ CON. NO.: \_\_\_\_\_

COUNTY OR DISTRICT: D. P.P. TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther CON. BLOCK, TRACT, SURVEY, ETC.: II LOT: 30

and Valley, Ont. DATE COMPLETED: 48-53 DAY: 8 MO: 12 YR: 83

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Top Soil & Fill			0	5
	Clay, Stones & Sand			5	32
Gr.	Limestone			32	110
Br.	Limestone			110	143

31 \_\_\_\_\_ 32 \_\_\_\_\_

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
130-140	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	37
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		37	143

**SCREEN**

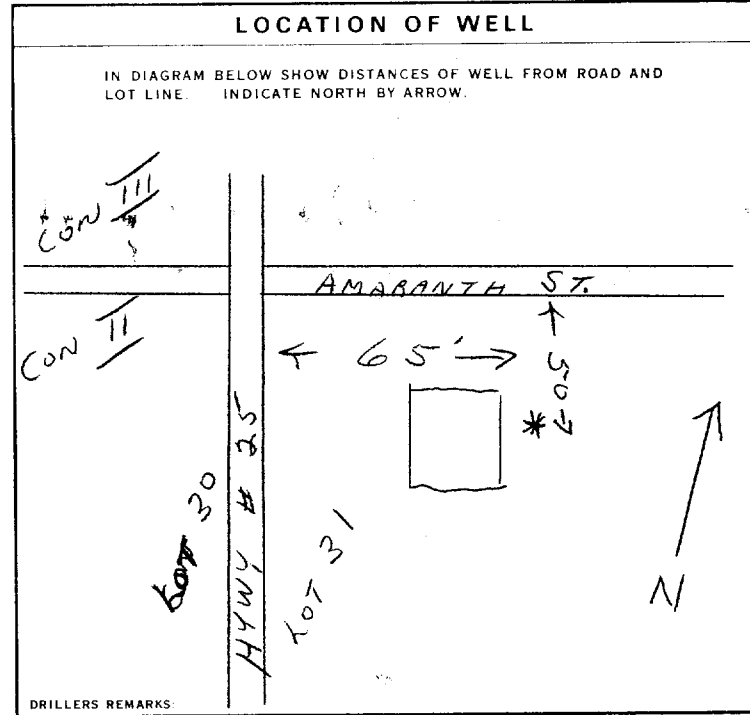
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: AIR  
 1  PUMP 2  BAILER  
 PUMPING RATE: 10 GPM DURATION OF PUMPING: 2 HOURS  
 STATIC LEVEL: 10 FEET WATER LEVEL END OF PUMPING: 20 FEET  
 WATER LEVELS DURING:  
 15 MINUTES: \_\_\_\_\_ 30 MINUTES: \_\_\_\_\_ 45 MINUTES: \_\_\_\_\_ 60 MINUTES: 20 FEET  
 IF FLOWING, GIVE RATE: \_\_\_\_\_ GPM  
 PUMP INTAKE SET AT: \_\_\_\_\_ FEET WATER AT END OF TEST: \_\_\_\_\_ FEET  
 1  CLEAR 2  CLOUDY  
 RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
 RECOMMENDED PUMP SETTING: 40 FEET RECOMMENDED PUMPING RATE: 10 GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Lang Well Drilling Ltd. LICENCE NUMBER: 3317  
 ADDRESS: Rt 1 Hillsburgh Ont.  
 NAME OF DRILLER OR BORER: Roy Lang LICENCE NUMBER: 3317  
 SIGNATURE OF CONTRACTOR: Roy Lang SUBMISSION DATE: DAY 8 MO. 12 YR. 83

**OFFICE USE ONLY**

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: 19 03 84  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_



Ministry of the Environment

# The Ontario Water Resources Act WATER WELL RECORD

1702978

MUNICIP. \_\_\_\_\_ CON. \_\_\_\_\_  
10 14 15 22 23 24

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

11

COUNTY OR DISTRICT D. C. TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE East Luther CON. BLOCK, TRACT, SURVEY, ETC. III LOT 30  
Brand Valley Ont. DATE COMPLETED 48-53  
DAY 2 MO 12 YR 83

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Clay & Stones			0	64
	Limestone			64	230

31 \_\_\_\_\_ 32 \_\_\_\_\_

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
205	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	69
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		69	230

**SCREEN**

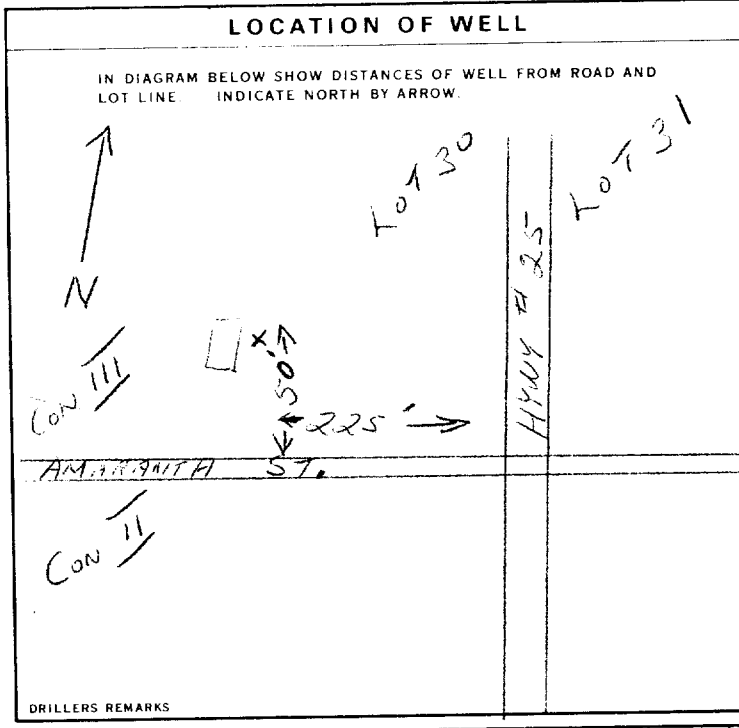
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	10 GPM	15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
45 FEET	60 FEET	15 MINUTES 26-28 FEET 30 MINUTES 29-31 FEET 45 MINUTES 32-34 FEET 60 MINUTES 35-37 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	90 FEET	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	90 FEET	10 GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR Ray Lang Drilling Ltd. LICENCE NUMBER 3317  
ADDRESS RR1 Hillsburgh Ont.  
NAME OF DRILLER OR BORER Ray Lang LICENCE NUMBER 3317  
SIGNATURE OF CONTRACTOR Ray Lang SUBMISSION DATE DAY 2 MO 12 YR 83

**OFFICE USE ONLY**

DATA SOURCE 58 CONTRACTOR 59-62 DATE RECEIVED 19 03 84 63-68 80  
DATE OF INSPECTION \_\_\_\_\_ INSPECTOR \_\_\_\_\_  
REMARKS \_\_\_\_\_



Ministry  
of the  
Environment

Ontario

The Ontario Water Resources Act

# WATER WELL RECORD

1702979

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

11

MUNICIPALITY: \_\_\_\_\_ CON. \_\_\_\_\_

COUNTY OR DISTRICT: Dufferin TOWNSHIP: Village of Grand Valley CON. BLOCK (TRACT, SURVEY ETC): Plan 57 LOT: 30

OWNER (SURNAME FIRST): Village of Grand Valley ADDRESS: 56 MAIN ST. N. Grand Valley Ont. LON 1G0 DATE COMPLETED: DAY 5 MO 10 YR 83

ZONE EASTING NORTHING ELEVATION BASIN CODE

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Br.	Clay - Stones			0	30
Gr.	Clay - Stones			30	76
	Clay - Boulders			76	85
Gr.	Limestone			85	180
Br.	Limestone			180	217

31 \_\_\_\_\_ 32 \_\_\_\_\_

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
212	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL
215	<input type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL
	<input type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL
	<input type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL
	<input type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	STEEL	.188	0	90
5"	STEEL		90	217

### SCREEN RECORD

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

### 61 PLUGGING & SEALING RECORD

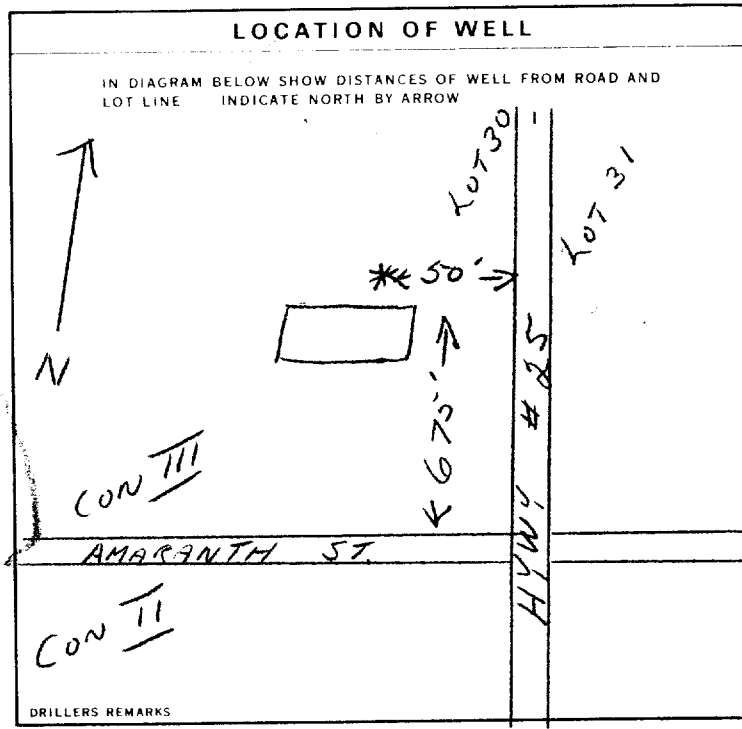
DEPTH SET AT - FEET	MATERIAL AND TYPE	CEMENT GROUT LEAD PACKER ETC.
10-13		
18-21		
26-29		

### 71 PUMPING TEST

PUMPING TEST METHOD: AIR PUMPING RATE: 40 GPM DURATION OF PUMPING: 2 HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
71	80	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		26-28	29-31	32-34	35-37
					80

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP



### FINAL STATUS OF WELL

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

### WATER USE

1  DOMESTIC 5  COMMERCIAL  
2  STOCK 6  MUNICIPAL  
3  IRRIGATION 7  PUBLIC SUPPLY  
4  INDUSTRIAL 8  COOLING OR AIR CONDITIONING  
9  OTHER: Village Storage Shed

### METHOD OF DRILLING

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

### CONTRACTOR

NAME OF WELL CONTRACTOR: Lang Well Drilling Ltd. LICENCE NUMBER: 3317  
ADDRESS: R.R.1 Hillsburgh Ont.

NAME OF DRILLER OR BORER: Roy Lang LICENCE NUMBER: 3317  
SIGNATURE OF CONTRACTOR: Roy Lang SUBMISSION DATE: DAY 5 MO 10 YR 83

### OFFICE USE ONLY

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: 19 03 84

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.ES



Ministry  
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Environment  
Ontario

The Ontario Water Resources Act

# WATER WELL RECORD

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

11

1703111

MUNICIPALITY: \_\_\_\_\_ CON. NO.: \_\_\_\_\_

COUNTY OR DISTRICT: **Dufferin** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER.** CON. BLOCK, TRACT, SURVEY ETC: **III** LOT: **31**

DATE COMPLETED: **48-53**  
DAY: **5** MO: **7** YR: **84**

\_\_\_\_\_ and Valley Ont

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Br.	Clay	Stones		0	45
Grey	Clay		Sticky	45	60
	Clay	Stones		60	85
Grey	Limestone			85	126

31 \_\_\_\_\_ 32 \_\_\_\_\_

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
120-125	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	92
5"	1 <input type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		92	126

### SCREEN

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

MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

### 61 PLUGGING & SEALING RECORD

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

### 71 PUMPING TEST

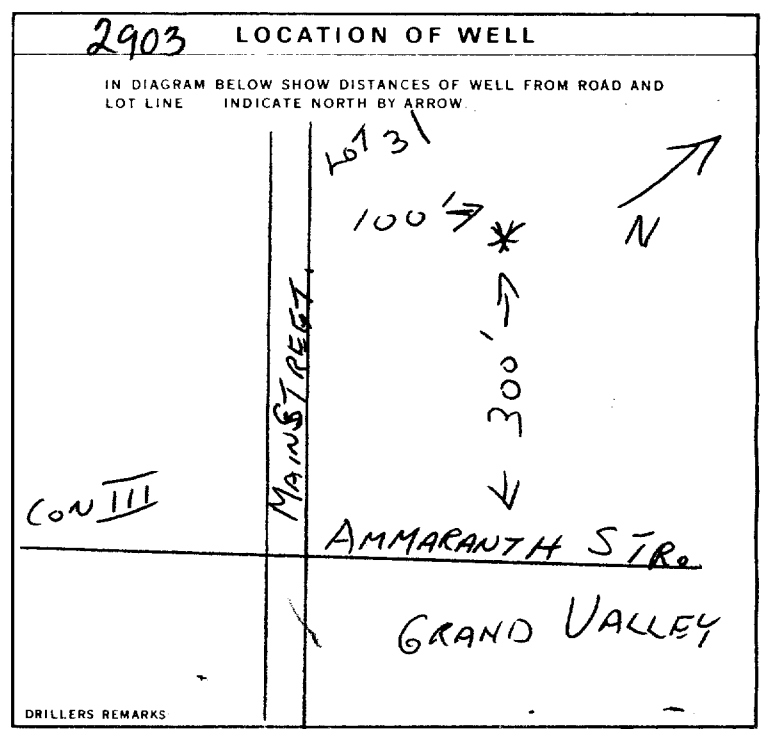
PUMPING TEST METHOD: 1  PUMP 2  TRAILER

PUMPING RATE: **10** GPM DURATION OF PUMPING: **1** HOURS **30** MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING				
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	
63 FEET	67 FEET					67 FEET

IF FLOWING GIVE RATE: \_\_\_\_\_ PUMP INTAKE SET AT: \_\_\_\_\_ WATER AT END OF TEST: **67** FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP RECOMMENDED PUMP SETTING: **100** FEET RECOMMENDED PUMPING RATE: **10** GPM



### FINAL STATUS OF WELL

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

### WATER USE

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

### METHOD OF DRILLING

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

NAME OF WELL CONTRACTOR: **Highwell Drilling Ltd** LICENCE NUMBER: **3317**

ADDRESS: **461 Hillburgh Ont.**

NAME OF DRILLER OR BORER: **Roy Larg** LICENCE NUMBER: **3317**

SIGNATURE OF CONTRACTOR: \_\_\_\_\_ SUBMISSION DATE: **5** MO: **7** YR: **84**

OFFICE USE ONLY

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: **01 04 85**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.ES



1. PRINT ONLY IN SPACES PROVIDED  
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11 1703192

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Luther CON. BLOCK, TRACT, SURVEY, ETC: II LOT: 25-27 31  
St. Grand Valley, Ont. DATE COMPLETED: DAY 23 MO 08 YR 85

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Gravel	Clay		0	19
	Clay	Stones		19	29
Gr.	Limestone			29	105

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
95	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
103	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	34
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		34	105

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

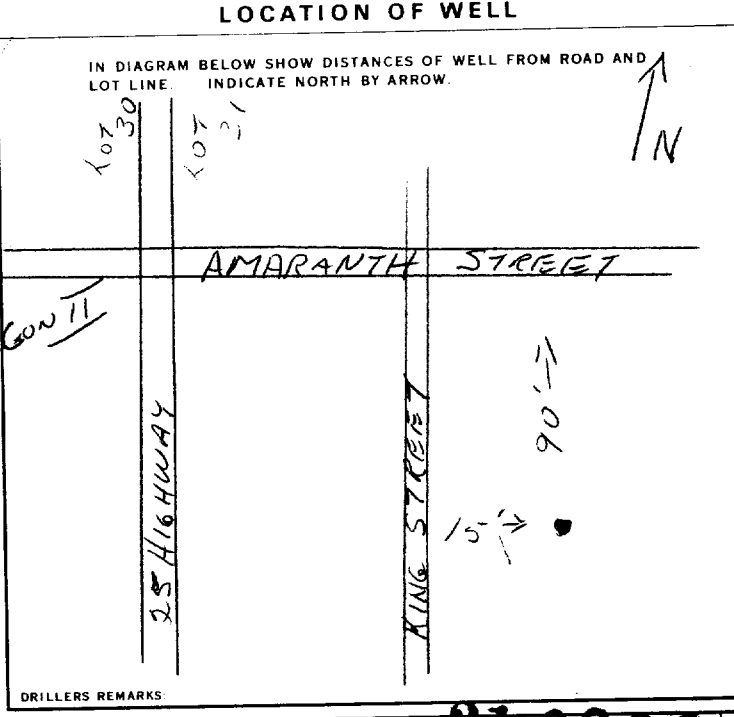
PUMPING TEST METHOD: AIR 1  PUMP 2  BAILER

PUMPING RATE: 15 GPM DURATION OF PUMPING: 1 HOURS 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
18		26-28	28-31	28-34	18

IF FLOWING, GIVE RATE: GPM PUMP INTAKE SET AT: FEET WATER AT END OF TEST: FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP RECOMMENDED PUMP SETTING: 40 FEET RECOMMENDED PUMPING RATE: 10 GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Langwell Drilling Ltd. LICENCE NUMBER: 3317  
ADDRESS: R.R. Hillsburgh, Ontario.  
NAME OF DRILLER OR BORE: Roy Lang. LICENCE NUMBER: 3317  
SIGNATURE OF CONTRACTOR: Roy Lang. SUBMISSION DATE: DAY 23 MO 08 YR 85

**OFFICE USE ONLY**

DATA SOURCE: 58 CONTRACTOR: 59-62 DATE RECEIVED: 21 0286  
DATE OF INSPECTION: INSPECTOR:  
REMARKS:  
CSS.ES



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11 1703286

COUNTY OR DISTRICT: [Redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER** CON. BLOCK, TRACT, SURVEY, ETC.: **11** LOT: **30** 25-27

DATE COMPLETED: 48-53 DAY: **25** MO: **10** YR: **86**

Address: **Emma Street, Grand Valley**

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
black	topsoil			0	2
brown	clay			2	34
grey	hardpan	gravel		34	69
grey	limestone			69	108

31 [Scale]

32 [Scale]

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
108	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	70
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		70	108
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

SIZE (5" OF OPENING (SLOT NO. 1)	DIAMETER INCHES	LENGTH FEET
	34-38	39-40
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN 41-44

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: **10** GPM

DURATION OF PUMPING: **1** HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
30 FEET	37 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		26-28 FEET	29-31 FEET	32-34 FEET	35-37 FEET

IF FLOWING, GIVE RATE: **65** GPM

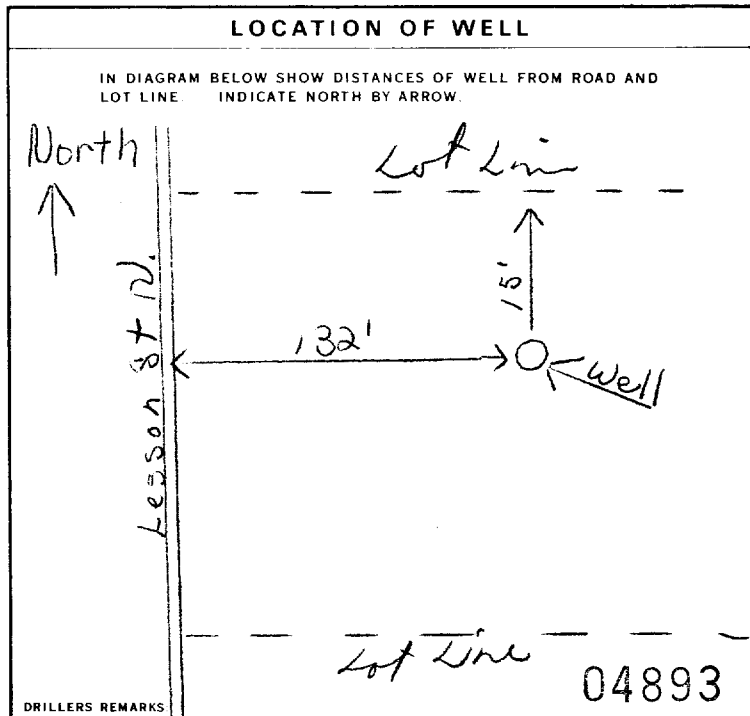
PUMP INTAKE SET AT: **65** FEET

WATER AT END OF TEST: **37** FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: **65** FEET

RECOMMENDED PUMPING RATE: **10** GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **Hugh Morrison Water Well Drilling** LICENCE NUMBER: **3740**

ADDRESS: **R.R. 5 Mount Forest, Ontario.**

NAME OF DRILLER OR BORER: **Hugh Morrison** LICENCE NUMBER: **T-0061**

SIGNATURE OF CONTRACTOR: *Hugh Morrison* SUBMISSION DATE: DAY \_\_\_\_ MO \_\_\_\_ YR \_\_\_\_

**OFFICE USE ONLY**

DATE RECEIVED: **011286**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

**CSS.ES**

# WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED  
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11 1703364

MUNICIP. \_\_\_\_\_ CON. \_\_\_\_\_

COUNTY OR DISTRICT: **11** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **GRAND VALLEY** CON. BLOCK, TRACT, SURVEY, ETC: **111** LOT: **31**  
**QUIER ST** DATE COMPLETED: DAY **2** MONTH **July** YEAR **86**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Top soil			0	2
Brown	Loamy Sand			2	13
Brown	F. Sand			13	17
Brown	C. Gravel - Stones			17	34
Grey	Clay - Red			34	39
Grey	Rock Limestone			39	70

31 \_\_\_\_\_ 32 \_\_\_\_\_

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
60-70	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	40
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		40	70

#### SCREEN

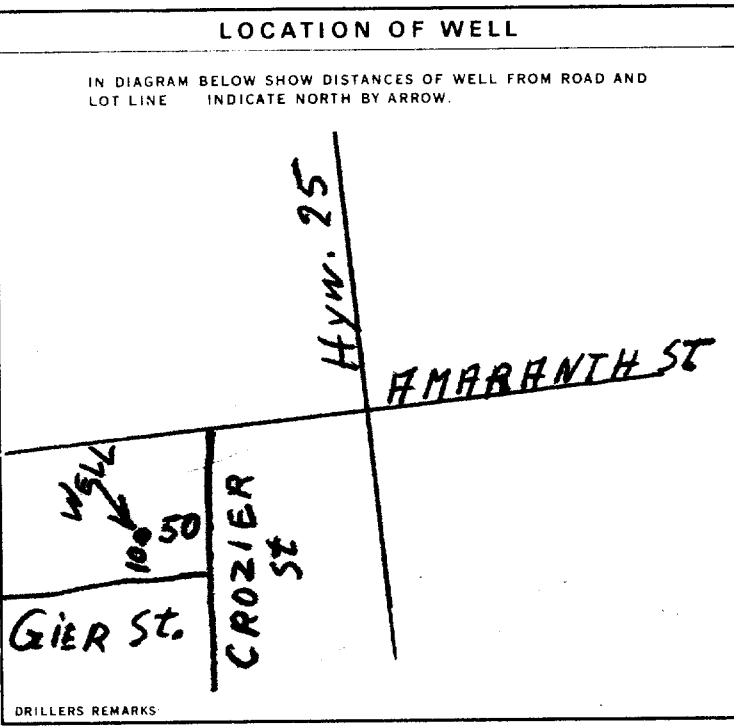
SIZE (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

#### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	14-17
18-21	22-25
26-29	30-33

#### 71 PUMPING TEST

PUMPING TEST METHOD: <input checked="" type="checkbox"/> PUMP <input checked="" type="checkbox"/> BAILER	PUMPING RATE: <b>12</b> GPM	DURATION OF PUMPING: <b>1</b> HOURS <b>00</b> MINS
STATIC LEVEL: <b>13</b> FEET	WATER LEVEL END OF PUMPING: <b>14</b> FEET	WATER LEVELS DURING:
15 MINUTES: <b>13</b> FEET    30 MINUTES: <b>13</b> FEET    45 MINUTES: <b>13</b> FEET    60 MINUTES: <b>13</b> FEET		
IF FLOWING GIVE RATE:	PUMP INTAKE SET AT: <b>25</b> FEET	WATER AT END OF TEST: <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE: <input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: <b>30</b> FEET	RECOMMENDED PUMPING RATE: <b>10</b> GPM



#### 54 FINAL STATUS OF WELL

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

#### 55-56 WATER USE

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

#### 57 METHOD OF DRILLING

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

#### CONTRACTOR

NAME OF WELL CONTRACTOR: **Rudy's Well Drilling** LICENCE NUMBER: **2332**  
 ADDRESS: **BRI Hillsburg.**  
 NAME OF DRILLER OR BOPER: **Rudy CARBOTZ** LICENCE NUMBER: **2332**  
 SIGNATURE OF CONTRACTOR: *Rudy Carbotz* SUBMISSION DATE: \_\_\_\_\_

#### OFFICE USE ONLY

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: **290487**  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 CSS.ES

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11

1703565

MUNICIPALITY: 10 14 15 22 23 24  
CONTRACTOR: 11 12 13 14 15 16 17 18 19 20 21 22 23 24

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **EAST LUTHER** CON. BLOCK TRACT SURVEY ETC: **711** LOT: **32**  
DATE COMPLETED: 48-53  
DAY: **11** MO: **12** YR: **87**  
[REDACTED] and Valley, Ont

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BR	CLAY	STONES		0	29
GR	CLAY	STONES		29	94
GR	LIMESTONE			94	185
BR	LIMESTONE			185	220

31  
32

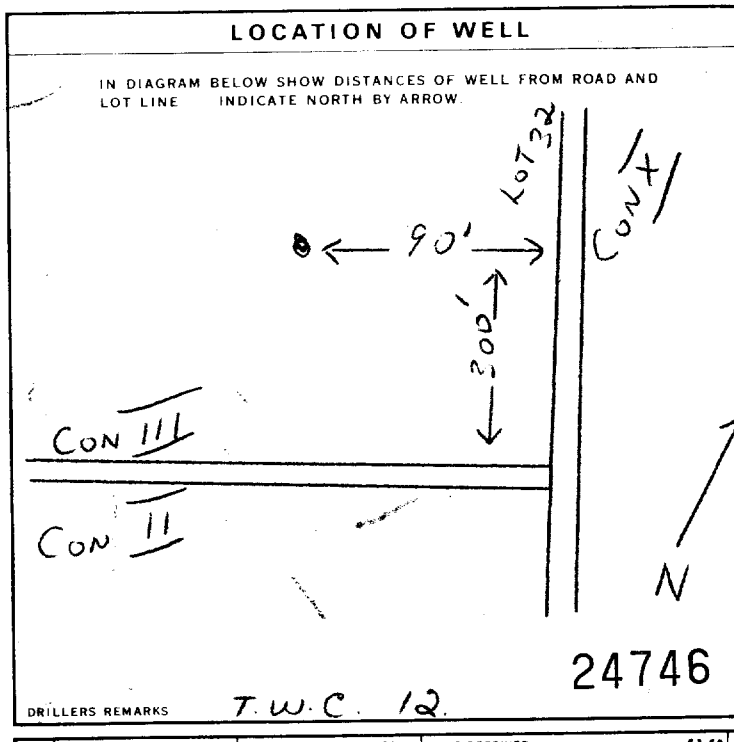
41 WATER RECORD	
WATER FOUND AT - FEET	KIND OF WATER
210	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
10 220	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

51 CASING & OPEN HOLE RECORD				
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	188	0	99'6"
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		99'6"	220

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

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

71 PUMPING TEST	PUMPING TEST METHOD		PUMPING RATE	DURATION OF PUMPING		
	1 <input type="checkbox"/> PUMP	2 <input type="checkbox"/> BAILER	10 GPM	15-18 HOURS	17-18 MINS	
	19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
	65 FEET	85 FEET	85 FEET	85 FEET	85 FEET	85 FEET



FINAL STATUS OF WELL	1 <input checked="" type="checkbox"/> WATER SUPPLY	6 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
	2 <input type="checkbox"/> OBSERVATION WELL	7 <input type="checkbox"/> UNFINISHED
	3 <input type="checkbox"/> TEST HOLE	8 <input type="checkbox"/> DOWELLING
WATER USE	1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
	2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
	3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
METHOD OF CONSTRUCTION	1 <input type="checkbox"/> CABLE TOOL	6 <input type="checkbox"/> BORING
	2 <input checked="" type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
	3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING

CONTRACTOR: **LANG WELL DRILLING LTD.** WELL CONTRACTOR'S LICENCE NUMBER: **3317**  
ADDRESS: **R.R.1 HILLSBURGH ONT.**  
NAME OF WELL TECHNICIAN: **ROY LANG** WELL TECHNICIAN'S LICENCE NUMBER: **T-0158**  
SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature] SUBMISSION DATE: DAY **12** MO **03** YR **88**

OFFICE USE ONLY: DATA SOURCE: **3317** CONTRACTOR: **3317** DATE RECEIVED: **MAR 18 1988**  
DATE OF INSPECTION: [ ] INSPECTOR: [ ]  
REMARKS: [ ]

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11

1703744

MUNICIPALITY 17003

CON. 103

COUNTY OR DISTRICT: Dufferin TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther CON. BLOCK, TRACT, SURVEY ETC: 111 LOT: 31  
DATE COMPLETED: DAY 16 MO 11 YR 88

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BR.	Gravel	Boulders		0	30
GR.	Gravel	Clay		30	39
Gr.	Limestone			39	120

31  
32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
98 TO 115	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	.188	0 45'8"
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		45'8" 120

**61 PLUGGING & SEALING RECORD**

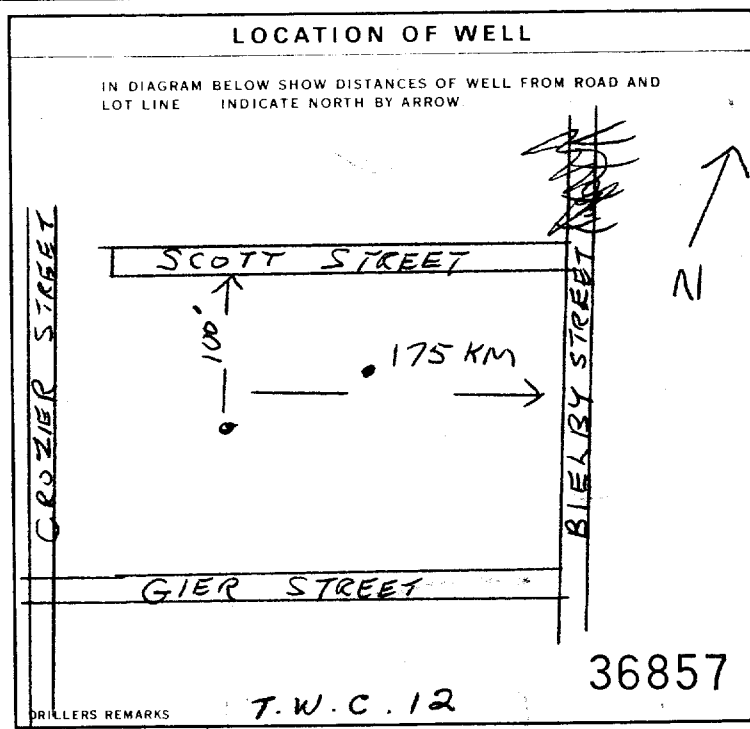
DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

**71 PUMPING TEST**

PUMPING TEST METHOD: AIR PUMPING RATE: 10 GPM DURATION OF PUMPING: 1 HOURS 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
18 FEET	55 FEET	55 FEET	55 FEET	55 FEET	55 FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
RECOMMENDED PUMP SETTING: 100 FEET RECOMMENDED PUMPING RATE: 10 GPM



**FINAL STATUS OF WELL**

1  WATER SUPPLY 2  OBSERVATION WELL 3  TEST HOLE 4  RECHARGE WELL 5  ABANDONED, INSUFFICIENT SUPPLY 6  ABANDONED POOR QUALITY 7  UNFINISHED 9  DEWATERING

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: LANG WELL DRILLING LTD WELL CONTRACTOR'S LICENCE NUMBER: 3317  
ADDRESS: R.R.1 HILLSBURGH ONT.  
NAME OF WELL TECHNICIAN: ROY LANG WELL TECHNICIAN'S LICENCE NUMBER: T-0158  
SIGNATURE OF TECHNICIAN/CONTRACTOR: R. Lang SUBMISSION DATE: DAY 10 MO 02 YR 89

**OFFICE USE ONLY**

DATA SOURCE: 3317 CONTRACTOR: 3317 DATE RECEIVED: FEB 10 1989  
DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
REMARKS: WDE  
CSS.ES



Ministry of the Environment Ontario

The Ontario Water Resources Act

# WATER WELL RECORD

1703746

MUNICIPALITY: 170.03 CON: CON LOT: 03

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

11

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther CON. BLOCK TRACT, SURVEY, ETC: III LOT: 25-27

DATE COMPLETED: DAY 26 MO 03 YR 88

STREET: GIER STREET AND VALLEY ONT.

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	GRAVEL	SAND		0	25
GR	CLAY	STONES		25	42
GR	LIMESTONE			42	87

31

32

### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
65	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
87	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	1.88	0	47
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		47	87

### SCREEN RECORD

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

### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
10-13	
18-21	
26-29	

### 71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	10 GPM	15-16 HOURS 30 MINS

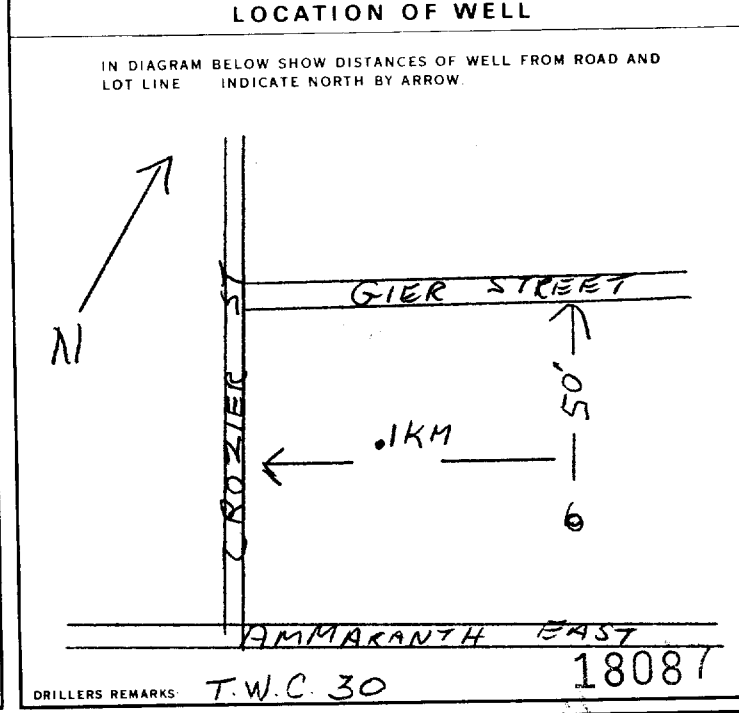
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
15 FEET	20 FEET	15 MINUTES: 20 FEET 30 MINUTES: 20 FEET 45 MINUTES: 20 FEET 60 MINUTES: 20 FEET

IF FLOWING, GIVE RATE: [ ] GPM

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: [ ] FEET

RECOMMENDED PUMPING RATE: 10 GPM



### FINAL STATUS OF WELL

1  WATER SUPPLY 5  ABANDONED, INSUFFICIENT SUPPLY  
2  OBSERVATION WELL 6  ABANDONED, POOR QUALITY  
3  TEST HOLE 7  UNFINISHED  
4  RECHARGE WELL 9  DEWATERING

### WATER USE

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

### METHOD OF CONSTRUCTION

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

CONTRACTOR	NAME OF WELL CONTRACTOR	WELL CONTRACTOR'S LICENCE NUMBER
	LANG WELL DRILLING LTD.	3317
	ADDRESS	
	R.R.1 HILLSBURGH ONT.	
	NAME OF WELL TECHNICIAN	WELL TECHNICIAN'S LICENCE NUMBER
	Roy LANG	T-0158
	SIGNATURE OF TECHNICIAN/CONTRACTOR	SUBMISSION DATE
	R. Lang	DAY 10 MO 02 YR 89

OFFICE USE ONLY	DATA SOURCE	CONTRACTOR	DATE RECEIVED
		3317	FEB 10 1989
	DATE OF INSPECTION	INSPECTOR	
	REMARKS		
	<b>WDE</b>		CSS.ES



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11

1703747

MUNICIP 117003

CON. CAN.

103

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: East Luther CON. BLOCK, TRACT, SURVEY ETC: 111 LOT: 31

Box 87 GRAND VALLEY ONT. LON/GO. DATE COMPLETED: 48-53 DAY: 17 MO: 11 YR: 88

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Gravel	Boulders		0	38
Gr.	Limestone			38	69

31  
32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
65 TO 69	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	.188	0	45
5"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		45	69

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

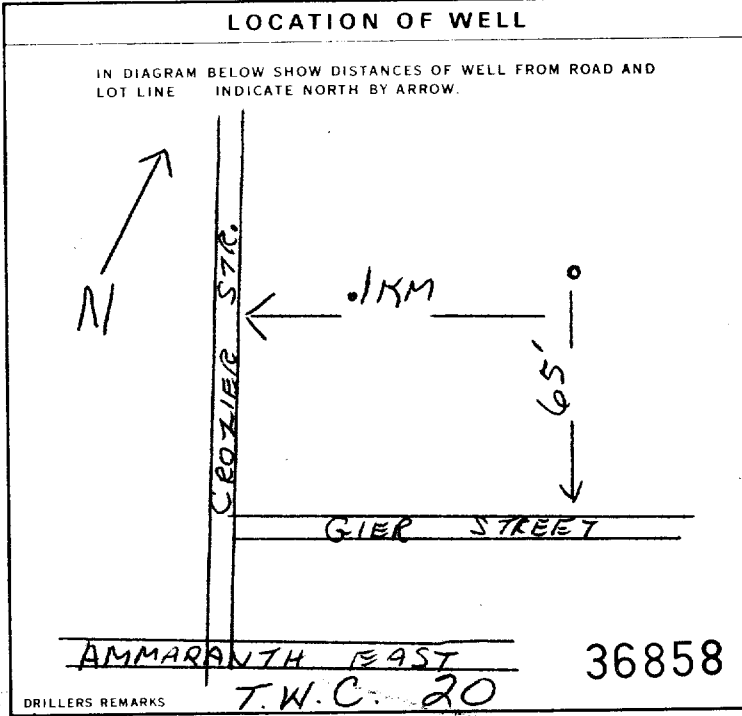
PUMPING TEST METHOD: AIR 10 PUMPING RATE: 8 GPM DURATION OF PUMPING: 1 HOURS 30 MINS

1  PUMP 2  BAILER

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING			
17 FEET	40 FEET	15 MINUTES: 40 FEET	30 MINUTES: 40 FEET	45 MINUTES: 40 FEET	60 MINUTES: 40 FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 50 FEET RECOMMENDED PUMPING RATE: 7 GPM



**FINAL STATUS OF WELL**

1  WATER SUPPLY 8  ABANDONED INSUFFICIENT SUPPLY  
2  OBSERVATION WELL 9  ABANDONED POOR QUALITY  
3  TEST HOLE 7  UNFINISHED  
4  RECHARGE WELL 9  DEWATERING

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: LANG WELL DRILLING LTD. WELL CONTRACTOR'S LICENCE NUMBER: 3317

ADDRESS: R.R.1 HILLSBURGH ONT.

NAME OF WELL TECHNICIAN: ROY LANG WELL TECHNICIAN'S LICENCE NUMBER: T-0158

SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature] SUBMISSION DATE: DAY 10 MO 02 YR 89

**OFFICE USE ONLY**

DATA SOURCE: 58 CONTRACTOR: 3317 DATE RECEIVED: 59-62 FEB 10 1989

DATE OF INSPECTION: INSPECTOR: [Signature]

REMARKS: WDE

CSS.ES

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11

1703818

MUNICIPALITY 17701

CON. 10 14 15 22 23 24

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Grand Valley  
CON. BLOCK TRACT SURVEY ETC: [REDACTED] LOT: 25-27  
DATE COMPLETED: 48-53 DAY 25 MO 10 YR 88  
4 CROZIER ST

**LOG OF OVERBURDEN AND BEDROCK MATERIALS** (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
PRES. BROWN	Dug Clay	Boulders		0	10
	Limestone			10	48
				48	67

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
53	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS
67	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		+2	49
6	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		49	67

**SCREEN**

SIZE(S) OF OPENING (SLOT NO): [REDACTED] DIAMETER: [REDACTED] LENGTH: [REDACTED]  
MATERIAL AND TYPE: [REDACTED] DEPTH TO TOP OF SCREEN: [REDACTED]

**61 PLUGGING & SEALING RECORD**

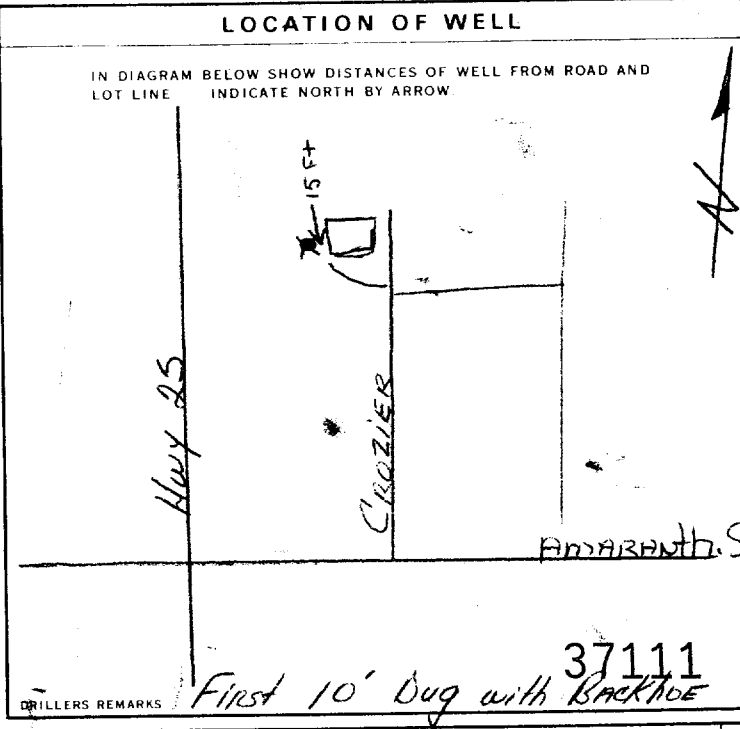
DEPTH SET AT - FEET	MATERIAL AND TYPE	CEMENT GROUT LEAD PACKER, ETC.
0	49	Hole plug & Slurry

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER  
PUMPING RATE: 20 GPM  
DURATION OF PUMPING: 1 HOUR 15 MIN

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
40	40	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	75 MINUTES	90 MINUTES

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
RECOMMENDED PUMP SETTING: 45 FEET  
RECOMMENDED PUMPING RATE: 10 GPM



**FINAL STATUS OF WELL**

1  WATER SUPPLY 5  ABANDONED INSUFFICIENT SUPPLY  
2  OBSERVATION WELL 6  ABANDONED POOR QUALITY  
3  TEST HOLE 7  UNFINISHED  
4  RECHARGE WELL 9  DEWATERING

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Lunney Well Drilling  
ADDRESS: RR#1 Grand Valley LON 1G0  
NAME OF WELL TECHNICIAN: D. Butt  
SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]  
SUBMISSION DATE: DAY 25 MO 10 YR 88  
WELL CONTRACTOR'S LICENCE NUMBER: 3406  
WELL TECHNICIAN'S LICENCE NUMBER: [REDACTED]

**OFFICE USE ONLY**

DATE RECEIVED: MAR 17 1989  
CONTRACTOR: 3406  
DATE OF INSPECTION: [REDACTED]  
INSPECTOR: [REDACTED]  
REMARKS: [REDACTED]





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1704157

MUNICIPALITY 17003

CON. CON.

103

COUNTY OR DISTRICT: **Dufferin** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **East Luther** CON. BLOCK TRACT. SURVEY, ETC: **Con. 3** LOT: **30**

OWNER (SURNAME FIRST): **Canadian Reformed Church** ADDRESS: **R.R. 2 Grand Valley, Ontario** DATE COMPLETED: DAY **05** MO **04** YR **90**

21 ZONE EASTING NORTHING ELEVATION BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
brown	clay	stones		0	12
grey	hardpan	stones		12	78
grey	limestone			78	210
brown	limestone			210	263

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
263	1 <input checked="" type="checkbox"/> FRESH 2 <input checked="" type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	188	0	84
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		84	263

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

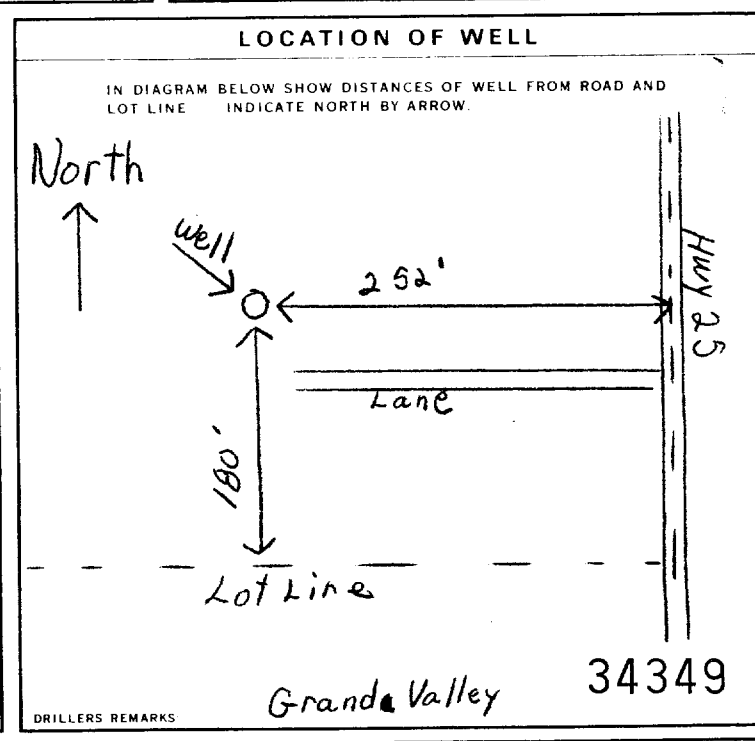
PUMPING TEST METHOD: **air** PUMPING RATE: **7** GPM DURATION OF PUMPING: **1** HOURS

1  PUMP 2  BAILER

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING				
66 FEET	100 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	
		28-31	32-34			100 FEET

IF FLOWING: GIVE RATE: **135** GPM PUMP INTAKE SET AT: **135** FEET WATER AT END OF TEST: **100** FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP RECOMMENDED PUMP SETTING: **135** FEET RECOMMENDED PUMPING RATE: **6** GPM



**FINAL STATUS OF WELL**

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

5  ABANDONED, INSUFFICIENT SUPPLY 6  ABANDONED POOR QUALITY 7  UNFINISHED 9  DEWATERING

**WATER USE**

1  DOMESTIC 2  STOCK 3  IRRIGATION 4  INDUSTRIAL

5  COMMERCIAL 6  MUNICIPAL 7  PUBLIC SUPPLY 8  COOLING OR AIR CONDITIONING 9  NOT USED

**METHOD OF CONSTRUCTION**

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

6  BORING 7  DIAMOND 8  JETTING 9  DRIVING

DIGGING  OTHER

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **Hugh Morrison Well Drilling Ltd. 3740**

WELL CONTRACTOR'S LICENCE NUMBER: **3740**

ADDRESS: **R.R. 5 Mount Forest, Ontario**

NAME OF WELL TECHNICIAN: **Howard Morrison**

WELL TECHNICIAN'S LICENCE NUMBER: **T-0353**

SIGNATURE OF TECHNICIAN/CONTRACTOR: *Howard Morrison*

SUBMISSION DATE: DAY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_

**OFFICE USE ONLY**

DATA SOURCE: **3740** CONTRACTOR: **3740** DATE RECEIVED: **MAY 11 1990**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

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11 1704693 17003 15 CON 103

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Luther CON. BLOCK TRACT. SURVEY ETC: 3 LOT: 32  
DATE COMPLETED: 48-53 DAY: 08 MO: 08 YR: 93  
RR#1 Grand Valley

**LOG OF OVERBURDEN AND BEDROCK MATERIALS** (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Boulders			0	5
Brown	silty clay	w/ Boulders		5	11
Gray	Clay			11	30
Gray	Clay Till	w/ Stones		30	86
	Broken lime stone			86	90
Blue Gray	Bedrock			90	97
				97	105
Gray	Lime stone			105	145
white	Lime stone			145	171
Gray	Lime stone			171	196

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
10-13 152ft	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS 6 <input type="checkbox"/> GAS
15-18 173ft	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS 6 <input type="checkbox"/> GAS
20-23 192ft	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS 6 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS 6 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS 6 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	188	92+	94+
5"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	188	92+	114+
4 1/4"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		114+	196+

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		30

**61 PLUGGING & SEALING RECORD**

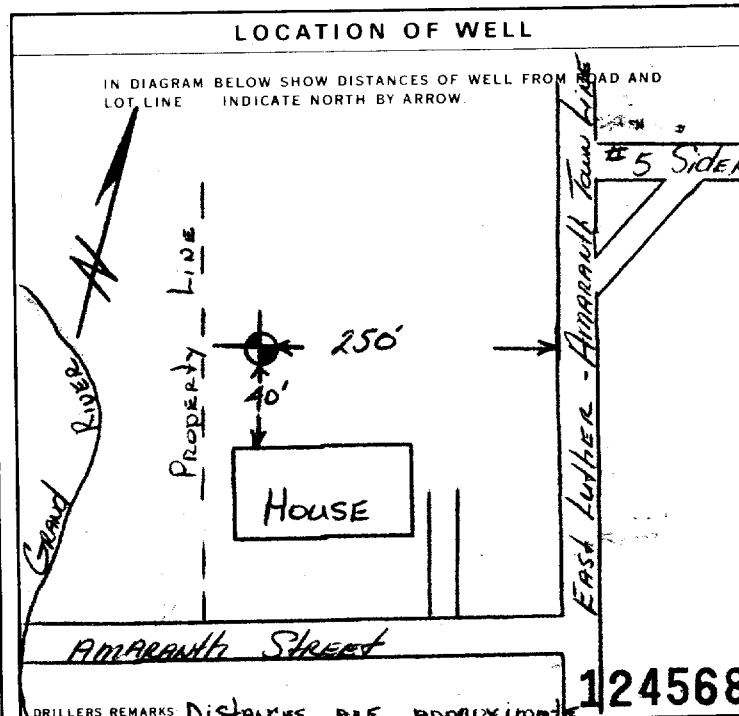
DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT LEAD PACKER, ETC.)
10-13	20"	BENTONITE
18-21		
26-29		

**71 PUMPING TEST**

PUMPING TEST METHOD: Air Lift  
PUMPING RATE: 10 GPM  
DURATION OF PUMPING: 1 HOUR 20 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
63 FEET	90 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		26-28	29-31	32-34	35-37

IF FLOWING, GIVE RATE: 110 GPM  
RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
RECOMMENDED PUMP SETTING: 110 FEET  
RECOMMENDED PUMPING RATE: 10 GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Lunney Well Drilling  
ADDRESS: RR#1 Grand Valley  
WELL CONTRACTOR'S LICENCE NUMBER: 3406

NAME OF WELL TECHNICIAN: Chris Turner  
WELL TECHNICIAN'S LICENCE NUMBER: 72001  
SIGNATURE OF TECHNICIAN/CONTRACTOR: Chris Turner  
SUBMISSION DATE: DAY 30 MO 08 YR 93

**OFFICE USE ONLY**

DATA SOURCE: 3406  
DATE RECEIVED: FEB 07 1994  
DATE OF INSPECTION: \_\_\_\_\_  
INSPECTOR: \_\_\_\_\_  
REMARKS: \_\_\_\_\_

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11 1704705 177011

COUNTY OR DISTRICT: **DUFFERIN** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **GRAND VALLEY** CON. BLOCK, TRACT, SURVEY ETC: \_\_\_\_\_ LOT: 25-27

OWNER (SURNAME FIRST): **TOWN OF GRAND VALLEY** ADDRESS: **GRAND VALLEY** DATE COMPLETED: DAY \_\_\_\_\_ MO **08** YR **93**

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

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Top soil			0	1
	Fill			1	3
Brown	Sandy clay			3	9
	Boulders			9	13
	Gravel			13	15 1/2
gray	Clay fill			15 1/2	17
gray	Limestone (Bedrock)			17	22

31 \_\_\_\_\_

32 \_\_\_\_\_

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
10-13 20	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input checked="" type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 5 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			
2"			17	0
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			27-30

**SCREEN**

SIZE (S) OF OPENING (SLOT NO.): #10  
 DIAMETER: 2 INCHES  
 LENGTH: 5 FEET  
 MATERIAL AND TYPE: PVC  
 DEPTH TO TOP OF SCREEN: 17 FEET

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER ETC.)
FROM TO	
16 10-13 0 14-17	Head plug
18-21 22-25	
26-29 30-33 80	

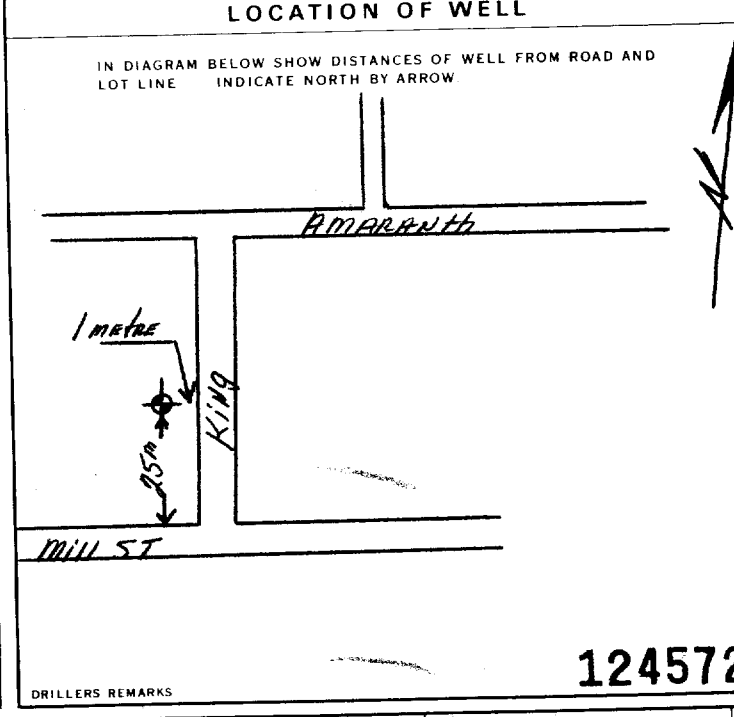
**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER  
 PUMPING RATE: \_\_\_\_\_ GPM  
 DURATION OF PUMPING: 15-16 HOURS 17-18 MINS

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

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

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
 RECOMMENDED PUMP SETTING: \_\_\_\_\_ FEET  
 RECOMMENDED PUMPING RATE: \_\_\_\_\_ GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **LUNNEY WELL DRILLING** WELL CONTRACTOR'S LICENCE NUMBER: **3406**  
 ADDRESS: **RR #1 GRAND VALLEY ONT.**  
 NAME OF WELL TECHNICIAN: **Chris Turner** WELL TECHNICIAN'S LICENCE NUMBER: **2007**  
 SIGNATURE OF TECHNICIAN/CONTRACTOR: *Chris Turner* SUBMISSION DATE: DAY \_\_\_\_\_ MO **08** YR **93**

**OFFICE USE ONLY**

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: **3406** DATE RECEIVED: **FEB 07 1994**  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

CSS.ES





TWS-2



Ministry of the Environment Ontario

The Ontario Water Resources Act

# WATER WELL RECORD

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

11

1704707

MUNICIPALITY 177011

CON. 15 22 23 24

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: GRAND VALLEY  
 CON. BLOCK, TRACT, SURVEY, ETC.: [REDACTED] LOT: 25-27  
 DATE COMPLETED: DAY 05 MO 08 YR 93  
 BASIN CODE: [REDACTED]

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Top soil			0	1
	Fill			1	3
Brown	Sandy clay			3	9
	gravel			13	15

31 [Scale]

32 [Scale]

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER					
10-13	1 <input checked="" type="checkbox"/> FRESH	2 <input checked="" type="checkbox"/> SALTY	3 <input checked="" type="checkbox"/> SULPHUR	4 <input checked="" type="checkbox"/> MINERALS	5 <input checked="" type="checkbox"/> GAS	6 <input type="checkbox"/> OTHER
15-18	1 <input type="checkbox"/> FRESH	2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> OTHER
20-23	1 <input type="checkbox"/> FRESH	2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> OTHER
25-28	1 <input type="checkbox"/> FRESH	2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> OTHER
30-33	1 <input type="checkbox"/> FRESH	2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/> OTHER

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		10	0
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			27-30

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.): #10  
 DIAMETER: 2" INCHES  
 LENGTH: 5 FEET  
 MATERIAL AND TYPE: P.V.C.  
 DEPTH TO TOP OF SCREEN: 10 FEET

**61 PLUGGING & SEALING RECORD**

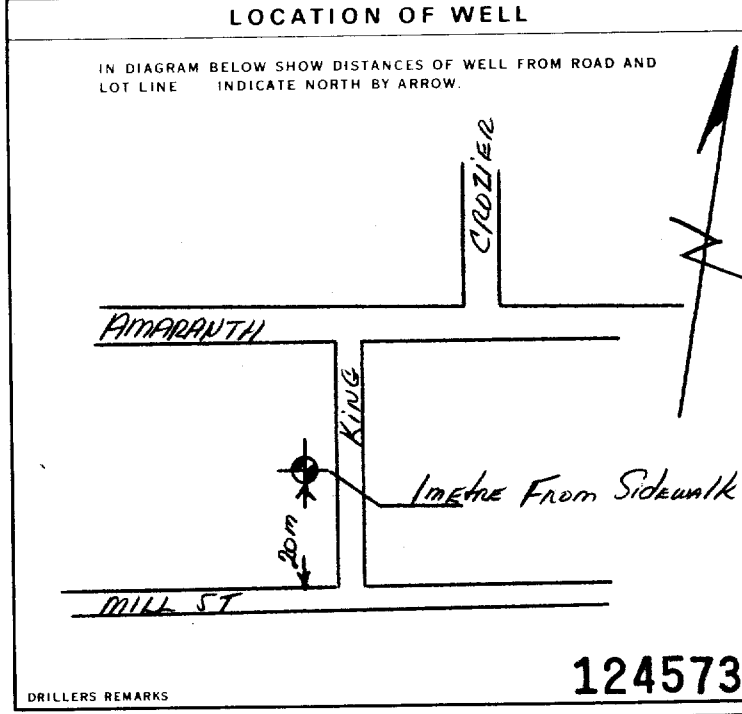
DEPTH SET AT - FEET		MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
FROM	TO	
9	10-13	0
	14-17	Hole plug
	18-21	
	22-25	
	26-29	
	30-33	
	34-40	

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER  
 PUMPING RATE: \_\_\_\_\_ GPM  
 DURATION OF PUMPING: \_\_\_\_\_ HOURS \_\_\_\_\_ MINS  
 1  PUMPING 2  RECOVERY

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

IF FLOWING GIVE RATE: \_\_\_\_\_ GPM  
 PUMP INTAKE SET AT: \_\_\_\_\_ FEET  
 WATER AT END OF TEST: 1  CLEAR 2  CLOUDY  
 RECOMMENDED PUMP TYPE:  SHALLOW  DEEP  
 RECOMMENDED PUMP SETTING: \_\_\_\_\_ FEET  
 RECOMMENDED PUMPING RATE: \_\_\_\_\_ GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Lunney Well Drilling  
 ADDRESS: RR # 11 GRAND VALLEY ONT.  
 WELL CONTRACTOR'S LICENCE NUMBER: 3406  
 NAME OF WELL TECHNICIAN: Chris Turner  
 WELL TECHNICIAN'S LICENCE NUMBER: 2007  
 SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]  
 SUBMISSION DATE: DAY 08 MO 08 YR 93

**OFFICE USE ONLY**

DATA SOURCE: 58 CONTRACTOR: 59-62 DATE RECEIVED: 63-68 80  
 3406 FEB 07 1994  
 DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 CSS.ES

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

11 1704708 MUNICIPALITY 177011 CON. 10 14 15 22 23 24

COUNTY OR DISTRICT: DUFFERIN TOWNSHIP BOROUGH CITY, TOWN VILLAGE: Grand Valley CON. BLOCK TRACT SURVEY ETC: \_\_\_\_\_ LOT: 25-27

OWNER (SURNAME FIRST): TOWN OF Grand Valley ADDRESS: Grand Valley DATE COMPLETED: 48-53  
 DAY: \_\_\_\_\_ MO: 08 YR: 93

ZONE: \_\_\_\_\_ EASTING: \_\_\_\_\_ NORTHING: \_\_\_\_\_ RC: \_\_\_\_\_ ELEVATION: \_\_\_\_\_ RC: \_\_\_\_\_ BASIN CODE: \_\_\_\_\_ II: \_\_\_\_\_ III: \_\_\_\_\_ IV: \_\_\_\_\_

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<u>Black</u>	<u>Top soil</u>			<u>0</u>	<u>1</u>
	<u>gravel</u>			<u>1</u>	<u>14</u>
	<u>Pickled limestone</u>			<u>14</u>	<u>25 1/2</u>
<u>gray</u>	<u>Limestone</u>			<u>25 1/2</u>	<u>30</u>

31 \_\_\_\_\_ 32 \_\_\_\_\_

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
<u>32</u>	<input checked="" type="checkbox"/> FRESH <input checked="" type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR MINERALS <input type="checkbox"/> GAS
15-18	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR MINERALS <input type="checkbox"/> GAS
20-23	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR MINERALS <input type="checkbox"/> GAS
25-28	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR MINERALS <input type="checkbox"/> GAS
30-33	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR MINERALS <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
<u>2</u>	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE <input type="checkbox"/> PLASTIC		<u>30</u>	<u>0</u>
17-18	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE <input type="checkbox"/> PLASTIC			20-23
24-25	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE <input type="checkbox"/> PLASTIC			27-30

**SCREEN**

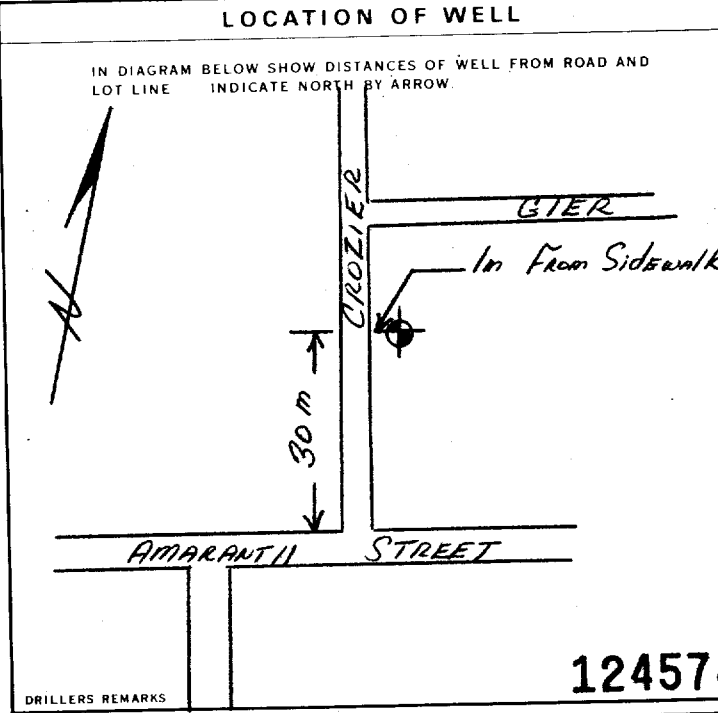
SIZE OF OPENING (SLOT NO.)	DIAMETER	LENGTH
<u>#10</u>	<u>2"</u> INCHES	<u>5</u> FEET
MATERIAL AND TYPE: <u>PVC</u>		DEPTH TO TOP OF SCREEN: <u>30</u> FEET

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
<u>29</u>	<u>ite plug</u>
18-21	
26-29	

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING								
<input type="checkbox"/> PUMP <input type="checkbox"/> BAILER	<u>_____</u> GPM	<u>_____</u> HOURS <u>_____</u> MINS								
STATIC LEVEL: _____ FEET WATER LEVEL END OF PUMPING: _____ FEET	WATER LEVELS DURING: <table border="1"> <tr> <td>15 MINUTES</td> <td>30 MINUTES</td> <td>45 MINUTES</td> <td>60 MINUTES</td> </tr> <tr> <td><u>_____</u></td> <td><u>_____</u></td> <td><u>_____</u></td> <td><u>_____</u></td> </tr> </table>		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES							
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>							
IF FLOWING GIVE RATE: _____ GPM	PUMP INTAKE SET AT: _____ FEET	WATER AT END OF TEST: _____ FEET								
RECOMMENDED PUMP TYPE: <input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: _____ FEET	RECOMMENDED PUMPING RATE: _____ GPM								



**FINAL STATUS OF WELL**

<input type="checkbox"/> WATER SUPPLY <input checked="" type="checkbox"/> OBSERVATION WELL <input type="checkbox"/> TEST HOLE <input type="checkbox"/> RECHARGE WELL	<input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY <input type="checkbox"/> ABANDONED POOR QUALITY <input type="checkbox"/> UNFINISHED <input type="checkbox"/> DEWATERING
<input type="checkbox"/> DOMESTIC <input type="checkbox"/> STOCK <input type="checkbox"/> IRRIGATION <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> OTHER	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> MUNICIPAL <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> COOLING OR AIR CONDITIONING <input checked="" type="checkbox"/> NOT USED
<input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> ROTARY (CONVENTIONAL) <input type="checkbox"/> ROTARY (REVERSE) <input type="checkbox"/> ROTARY (AIR) <input type="checkbox"/> AIR PERCUSSION	<input type="checkbox"/> BORING <input type="checkbox"/> DIAMOND <input type="checkbox"/> JETTING <input type="checkbox"/> DRIVING <input type="checkbox"/> DIGGING <input type="checkbox"/> OTHER

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Lunney Well Drilling WELL CONTRACTOR'S LICENCE NUMBER: 3406

ADDRESS: RR#1 Grand Valley

NAME OF WELL TECHNICIAN: Chris Turner WELL TECHNICIAN'S LICENCE NUMBER: 2007

SIGNATURE OF TECHNICIAN/CONTRACTOR: Chris Turner SUBMISSION DATE: DAY \_\_\_\_\_ NO 08 YR 93

**OFFICE USE ONLY**

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: 3406 DATE RECEIVED: FEB 07 1994

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.ES

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

11 1704795 17,003 CON. 103

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP-BOROUGH-CITY-TOWN-VILLAGE: Luther  
 DATE COMPLETED: 48-53 DAY 21 MO 11 YR 94  
 1097 - Landmark Court  
 3501 Harriston Court Burlington ON

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	3/4" crushed stone			425	350
	1 bag hole plug			350	
	3/4" crushed stone			350	275
	1 bag hole plug			275	
	3/4 crushed stone			275	205'
	2 bag hole plug			225	
	3/4" crushed stone			225	125
	1 bag hole plug			125	
	3/4" crushed stone			125	100
	2 bags hole plug			100	90
	cement grout			90	-1
	cap and hole plug			-1	0

31  
32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER					
10-13	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/>	7 <input type="checkbox"/>
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/>	7 <input type="checkbox"/>
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/>	7 <input type="checkbox"/>
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/>	7 <input type="checkbox"/>
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	5 <input type="checkbox"/> GAS	6 <input type="checkbox"/>	7 <input type="checkbox"/>

**51 CASING & OPEN HOLE RECORD**

INSIDE DIA. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			13-16
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			27-30

**SCREEN**

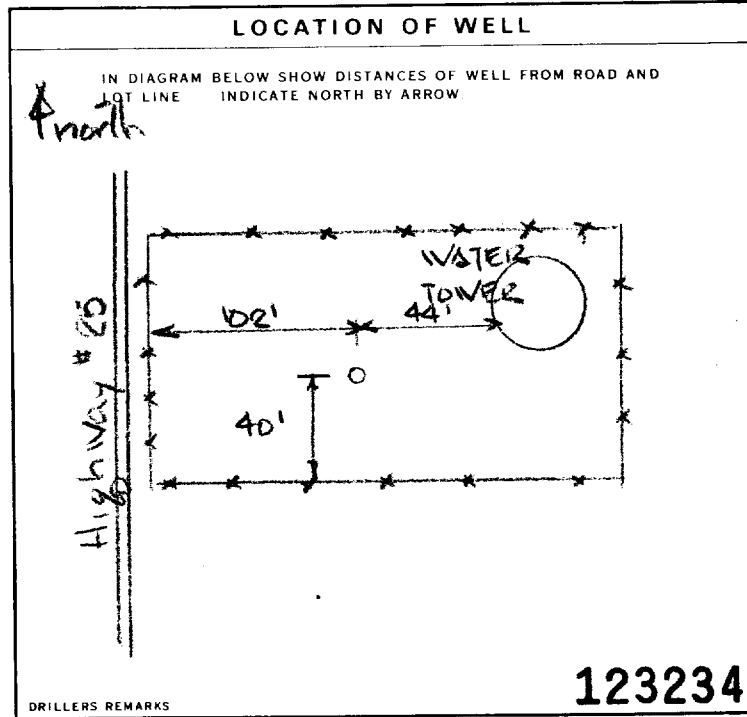
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		41-44
		FEET

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	GPM	15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
19-21 FEET	22-24 FEET	15 MINUTES 26-28 FEET 30 MINUTES 29-31 FEET 45 MINUTES 32-34 FEET 60 MINUTES 35-37 FEET
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 <input type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	FEET	GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: International Water Supply 2801  
 ADDRESS: P.O. Box 310 Barrie  
 NAME OF WELL TECHNICIAN: J. Augustine  
 SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]  
 WELL CONTRACTOR'S LICENCE NUMBER: 2801  
 WELL TECHNICIAN'S LICENCE NUMBER: T-0424  
 SUBMISSION DATE: DAY 29 MO 11 YR 94

**OFFICE USE ONLY**

DATA SOURCE: 2801  
 DATE RECEIVED: DEC 05 1994  
 DATE OF INSPECTION: \_\_\_\_\_  
 INSPECTOR: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

CSS.ES

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

11

1704969

Municipality 17003 Con. CON 03

County or District: [Redacted] Township/Borough/City/Town/Village: EAST LUTHER TWP Con block tract survey, etc.: CON 3 Lot: 32  
Address: [Redacted] Date completed: 3 day 09 month 96 year

21 22 23 24  
Northings: 10 12 17 18 24 25 26 30 31  
Elevation: RC Basin Code: ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	TOP SOIL			0	1
Brown	CLAY	STONES		1	8
Grey	CLAY	STONES		8	17
Brown	SILT	STONES		17	62
Grey	CLAY			62	77
Brown	LIMESTONE		BROKEN	77	91
Grey	LIMESTONE			91	169
Brown	LIMESTONE			169	198

31 32

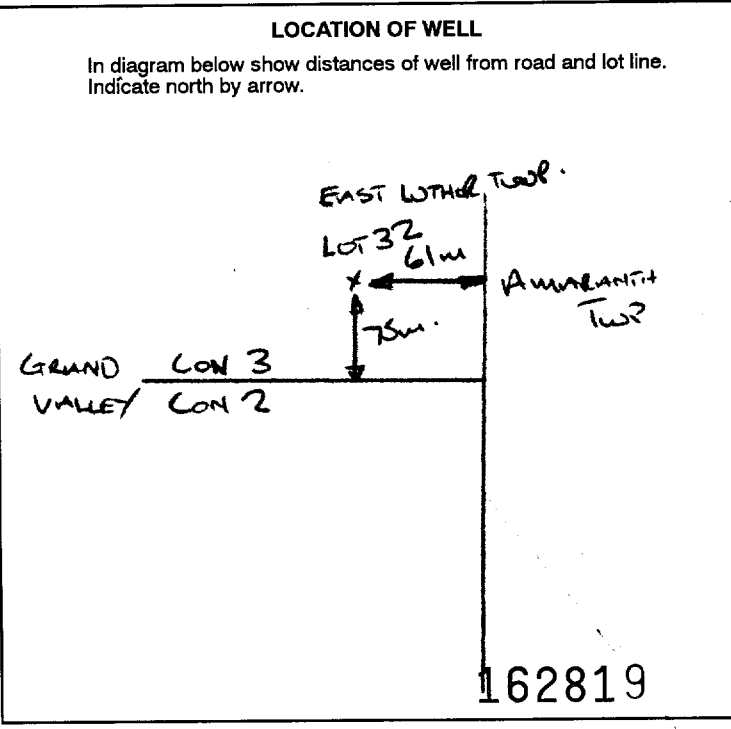
WATER RECORD					
Water found at - feet	Kind of water				
158	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals	<input type="checkbox"/> Gas
147	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals	<input type="checkbox"/> Gas

CASING & OPEN HOLE RECORD					
Inside diam inches	Material	Wall thickness inches	Depth - feet		
			From	To	
46"	Steel	188	1	93	
46"	Steel		43	198	

Sizes of opening (Slot No.)	Diameter	Length
N/A		
Material and type	Depth at top of screen	

PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space	<input type="checkbox"/> Abandonment		
Depth set at - feet	Material and type (Cement grout, bentonite, etc.)		
0	40	BENSEAL	

Pumping test method	Pumping rate	Duration of pumping
1 <input checked="" type="checkbox"/> Pump and Bailor	8 GPM	1 Hours 17 Mins
Static level	Water level end of pumping	Water levels during
19.21 feet	22.24 feet	15 minutes: 62 feet
If flowing give rate	Pump intake set at	Water at end of test
110 GPM	110 feet	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump type	Recommended pump setting	Recommended pump rate
<input checked="" type="checkbox"/> Deep	110 feet	8 GPM



FINAL STATUS OF WELL		
<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)	
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering	
WATER USE		
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning	
METHOD OF CONSTRUCTION		
<input type="checkbox"/> Cable tool	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Driving
<input type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting	

Name of Well Contractor	Well Contractor's Licence No.
HIGHLAND WATER WELLS	2576
Address	
Box 141 DURHAM ONT NOG 1P0	
Name of Well Technician	Well Technician's Licence No.
NIGEL POPPLETON	1230
Signature of Technician/Contractor	Submission date
[Signature]	day 06 mo 09 yr 96

MINISTRY USE ONLY	Data source	Contractor	Date received
		2576	SEP 27 1996
	Date of inspection	Inspector	
Remarks			
<b>CSSLS</b>			

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

1705038

Municipality 17003 Con. CON 03

County or District: [REDACTED] Township/Borough/City/Town/Village: EAST LUTHER  
 Con block tract survey, etc.: CON 111 Lot: 32  
 Address: Box 331 GRAND VALLEY ONT LON 1G0 Date completed: 19 06 97

21	2	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
----	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
BROWN	CLAY	GRAVEL		0	10
BROWN	CLAY			10	20
BROWN	CLAY	GRAVEL		20	42
GREY	GRAVEL	CLAY		42	89
GREY	LIMESTONE			89	115
GREEN	SHALE			115	117
GREY	LIMESTONE			117	152
BROWN	LIMESTONE			152	153
GREY	LIMESTONE			153	170

31	14	15	21
32	14	15	21

**41 WATER RECORD**

Water found at - feet	Kind of water			
140	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals	<input type="checkbox"/> Gas
160	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals	<input type="checkbox"/> Gas
170	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals	<input type="checkbox"/> Gas

**5.1 CASING & OPEN HOLE RECORD**

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 7/8	Steel	0.188	1' 6"	93'
6 7/8	Galvanized		93'	170'

**SCREEN**

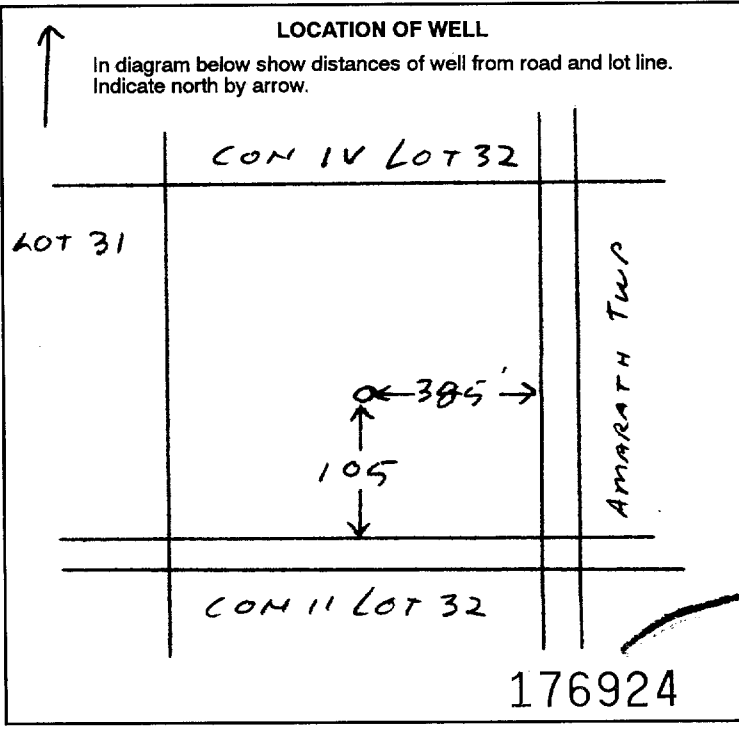
Sizes of opening (Slot No.)	Diameter inches	Length feet

**61 PLUGGING & SEALING RECORD**

<input checked="" type="checkbox"/> Annular space	<input type="checkbox"/> Abandonment
Depth set at - feet	Material and type (Cement grout, bentonite, etc.)
0 - 20	BENTONITE

**71 PUMPING TEST**

Pumping test method: <input checked="" type="checkbox"/> Pump	Pumping rate: 100 GPM	Duration of pumping: 45 minutes
Static level: 40 feet	Water level end of pumping: 100 feet	Water levels during pumping:
		15 minutes: 53' 10"
		30 minutes: 47' 9"
		45 minutes: 46' 8"
		60 minutes: 45' 7"



**FINAL STATUS OF WELL**

Water supply

**WATER USE**

Domestic

**METHOD OF CONSTRUCTION**

Rotary (conventional)

Name of Well Contractor: MEADOWBANK DRILLING SERVICES  
 Well Contractor's Licence No.: 6865  
 Address: Box 416 FLORA ONT N0B-1S0  
 Name of Well Technician: JIM BROADFOOT  
 Well Technician's Licence No.: T0370  
 Signature of Technician/Contractor: [Signature]  
 Submission date: 30 06 97

**MINISTRY USE ONLY**

Data source: 6865  
 Date received: JUL 04 1997  
 Date of inspection: \_\_\_\_\_  
 Inspector: \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 CSS.S8





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

11

1705612

Municipality  
17001

Con.  
CON 10

County or District <b>DUFFERIN</b>	Township/Borough/City/Town/Village <b>AMARANTH - E LUTHER</b>	Con block tract survey, etc. <b>10</b>	Lot <b>5</b>
Owner's surname <b>Township of Amaranth</b>	First Name <b>LAUREL</b>	Address <b>OUT</b>	Date completed <b>23 08 00</b> day month year

21

Zone Easting Northing RC Elevation RC Basin Code ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Black	Topsoil			0	1
Brown	Sandy Clay	Sm. stones/cobbles		1	12
Brown	Gravel	Brown sand		12	16
Bigge	Gravel	Grey clay/cobbles	Cemented (Tight)	16	49
Grey	Clay	Grey gravel		49	60
Greenish Br.	Gravel	Beige clay		60	71 1/2
Brown	Limestone	Brown clay	Weathered (Broken)	71 1/2	85 1/2
Grey	Limestone		Weathered (Broken)	85 1/2	88
Grey	Limestone			88	98

31

32

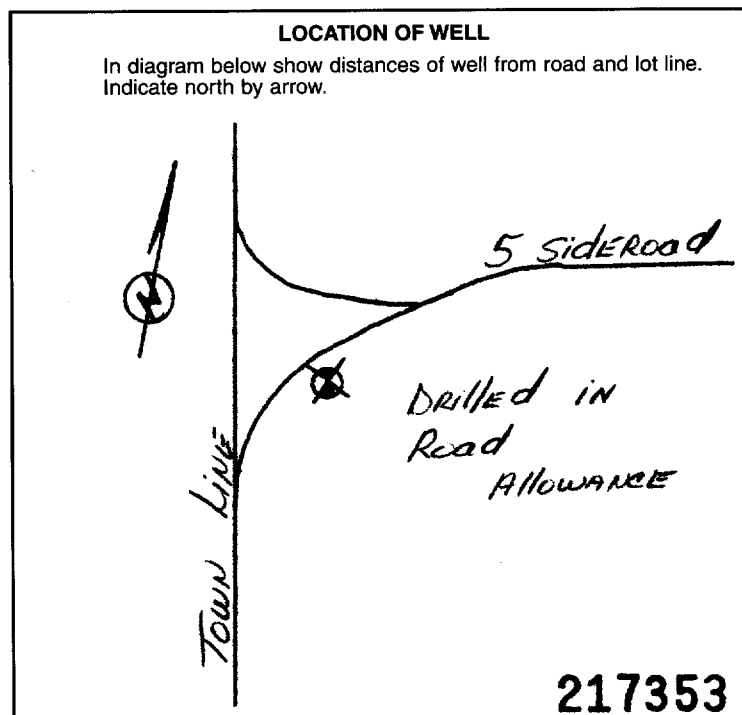
41 WATER RECORD	
Water found at - feet	Kind of water
14	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty 3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas 6 <input type="checkbox"/>
7 1/2	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty 3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas 6 <input type="checkbox"/>
95	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty 3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas 6 <input type="checkbox"/>

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	1 <input checked="" type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	.188	+3 1/2	88
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		88	98

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
	Material and type	inches	feet

61 PLUGGING & SEALING RECORD		
<input type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
0	18	Bentonite

71 PUMPING TEST	
Pumping test method	Pumping rate
1 <input type="checkbox"/> Pump 2 <input checked="" type="checkbox"/> Bailor	5 GPM
Static level	Water level during
43 feet	15 minutes 37 feet 30 minutes 43 feet 45 minutes 43 feet 60 minutes 43 feet
If flowing give rate	Pump intake set at
GPM	80 feet
Recommended pump type	Recommended pump setting
<input type="checkbox"/> Shallow <input type="checkbox"/> Deep	feet



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

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

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

**WELL DRILLING - A DIV. OF**

Name of Well Contractor <b>GERRIT WELLD RILLING INC</b>	Well Contractor's Licence No. <b>3406</b>
Address <b>RRA GRAND VALLEY ONT.</b>	
Name of Well Technician <b>T. THOMPSON</b>	Well Technician's Licence No. <b>72836</b>
Signature of Technician/Contractor <i>T. Thompson</i>	Submission date <b>23 mo 08 y 00</b>

MINISTRY USE ONLY	Data source	Contractor	Date received
			<b>3406</b>
	Date of inspection	Inspector	
	Remarks <b>CSS.ES1</b>		

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

11

1705613

Municipality  
17001

Con.  
CON 10

County or District <b>DUFFERIN</b>	Township/Borough/City/Town/Village <b>AMARANTH</b>	Con block tract survey, etc. <b>10</b>	Lot <b>5</b>
Owner's surname <b>TOP OF AMARANTH</b>	First Name	Address <b>1/0 R.T. BURNSIDE ORANGEVILLE</b>	
Date completed <b>25 08 00</b>		day	month year

21

Zone Easting Northing RC Elevation RC Basin Code ii iii iv

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)**

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	<b>Top Soil</b>			<b>0</b>	<b>1</b>
<b>BROWN</b>	<b>Clay</b>	<b>stones cobbles</b>		<b>1</b>	<b>12</b>
<b>BROWN</b>	<b>GRAVEL</b>			<b>12</b>	<b>16</b>

31

32

**41 WATER RECORD**

Water found at - feet	Kind of water
10-13 <b>12</b>	1 <input type="checkbox"/> Fresh 2 <input checked="" type="checkbox"/> <b>NOT TESTED</b>
15-18	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty
20-23	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty
25-28	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty
30-33	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty

**51 CASING & OPEN HOLE RECORD**

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11 <b>2</b>	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> <b>Open hole</b> 5 <input type="checkbox"/> Plastic	<b>sch 40</b>	<b>13</b>	<b>6</b>
17-18	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			20-23
24-25	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

**SCREEN**

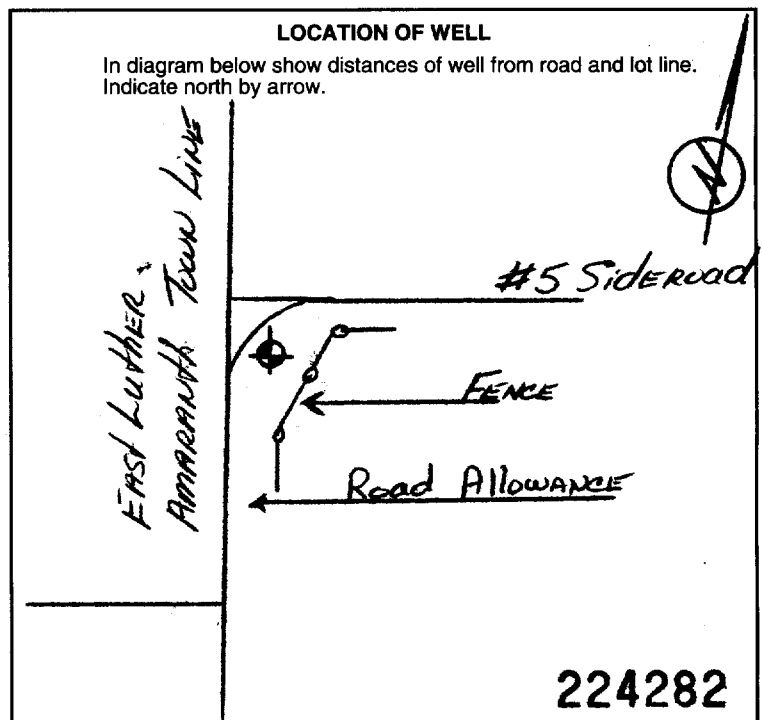
Sizes of opening (Slot No.) <b>#10</b>	Diameter <b>2</b> inches	Length <b>10</b> feet
Material and type <b>PVC sch 40</b>	Depth at top of screen <b>6</b> feet	

**61 PLUGGING & SEALING RECORD**

<input type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
10-13 <b>0</b>	14-17 <b>5</b>	<b>Holeplug</b>
18-21 <b>5</b>	22-25 <b>16</b>	<b>SAND PACK</b>

**71 PUMPING TEST**

Pumping test method 1 <input type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	Pumping rate <b>2 1/2</b> GPM	Duration of pumping <b>1</b> Hours <b>1</b> Mins
Static level 19-21	Water level end of pumping 22-24	Water levels during 1 <input type="checkbox"/> Pumping 2 <input type="checkbox"/> Recovery
15 minutes 25-28	30 minutes 29-31	45 minutes 32-34
60 minutes 35-37	Water at end of test <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
If flowing give rate 38-41	Pump intake set at 43-45	Recommended pump rate 46-49
Recommended pump type <input type="checkbox"/> Shallow <input type="checkbox"/> Deep	Recommended pump setting feet	Recommended pump rate GPM



**FINAL STATUS OF WELL**

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

**WATER USE**

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

**METHOD OF CONSTRUCTION**

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

Name of Well Contractor  
**KUNNEY WELL DRILLING Div of Gerrits Well Drilling Inc**

Well Contractor's Licence No.  
**3406**

Address  
**RR#1 Grand Valley**

Name of Well Technician  
**T. Thompson**

Well Technician's Licence No.  
**T-2836**

Signature of Technician/Contractor  
*T. Thompson*

Submission date  
**25 08 00**

**MINISTRY USE ONLY**

Data source	Contractor <b>3406</b>	Date received <b>MAR 26 2001</b>
Date of inspection	Inspector	
Remarks		

**CSS.ES1**

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

11

1705732

Municipality 17003

Con. CON 03

County or District <b>DUFFERIN COUNTY</b>	Township/Borough/City/Town/Village <b>EAST LOTHER TWP</b>	Con block tract survey, etc. <b>CON 3</b>	Lot <b>30</b>
Address <b>R.R.#1, GRAND VALLEY, ONT</b>		Date completed <b>24 09 01</b> day month year	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
BROWN	SAND	STONES	FILL	0	1
BROWN	CLAY	GRAVEL		1	14
GRAY	CLAY	GRAVEL		14	35
BROWN	SILTY CLAY	GRAVEL		35	77
GRAY	LIMESTONE		CLAY LAYERS 80ft & 170ft	77	176

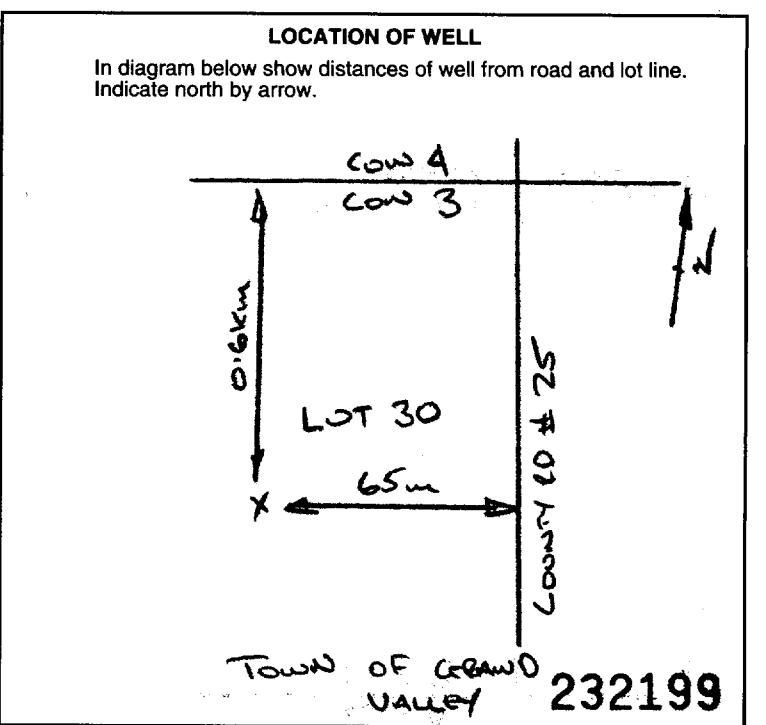
31	32
----	----

41 WATER RECORD	
Water found at - feet	Kind of water
81	1 <input checked="" type="checkbox"/> Fresh 2 <input checked="" type="checkbox"/> Salty 3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas
170	1 <input checked="" type="checkbox"/> Fresh 2 <input checked="" type="checkbox"/> Salty 3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
4.6"	1 <input checked="" type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	1.88	+2	78
4.6"	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		78	176

61 PLUGGING & SEALING RECORD			
Screen		Plugging & Sealing	
Sizes of opening (Slot No) <b>N/A</b> Material and type		Diameter 34-38 inches Length 39-40 feet Depth at top of screen 41-44 feet	
<input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment			
Depth set at - feet From 0 To 49		Material and type (Cement grout, bentonite, etc.) <b>BENSEAL</b>	

71 PUMPING TEST			
Pumping test method 1 <input type="checkbox"/> Pump 2 <input checked="" type="checkbox"/> Bailer	Pumping rate <b>10</b> GPM	Duration of pumping 15-16 Hours <b>30</b> Mins	
Static level <b>67</b> feet	Water level end of pumping <b>70</b> feet	Water levels during 15 minutes <b>67</b> feet	30 minutes <b>67</b> feet
If flowing give rate GPM	Pump intake set at <b>110</b> feet	Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting <b>110</b> feet	Recommended pump rate <b>10</b> GPM	



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

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

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

Name of Well Contractor <b>HIGHLAND WATER WELLS</b>	Well Contractor's Licence No. <b>2576</b>
Address <b>Box 141, Dufferin, Ont N0G 1B0</b>	
Name of Well Technician <b>NIGEL ROBERTSON</b>	Well Technician's Licence No. <b>72130</b>
Signature of Technician/Contractor <i>[Signature]</i>	
Submission date day <b>02</b> mo <b>10</b> yr <b>01</b>	

MINISTRY USE ONLY	Data source <b>2576</b>	Contractor <b>2576</b>	Date received <b>OCT 16 2001</b>
	Date of inspection	Inspector	
	Remarks <b>088 ES1</b>		



**Instructions for Completing Form**

- For use in the Province of Ontario only. This document is a permanent legal document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

**Well Owner's Information and Location of Well Information**

Ministry Use Only											
MUN										CON	LOT

**DUFFERIN** RR#/Street Number/Name      **EAST LUTHER** City/Town/Village      **30** Site/Compartment/Block/Tract etc.      **3**

GPS Reading    NAD    Zone    Easting    Northing    Unit Make/Model    Mode of Operation:     Undifferentiated     Averaged  
**8 3**    **17**    **554685**    **4861884**    **MAGELEN**    **UTM**     Differentiated, specify \_\_\_\_\_

**Log of Overburden and Bedrock Materials (see instructions)**

General Colour	Most common material	Other Materials	General Description	Depth Metres	
				From	To
<b>BROWN</b>	<b>CLAY &amp; STONES</b>			<b>0</b>	<b>24ft</b>
<b>GRAY</b>	<b>CLAY &amp; STONES</b>			<b>24ft</b>	<b>67ft</b>
<b>BROWN</b>	<b>LIMESTONE</b>			<b>67ft</b>	<b>101ft</b>
<b>GRAY</b>	<b>LIMESTONE</b>			<b>101ft</b>	<b>121ft</b>

**Hole Diameter**

Depth From	Metres To	Diameter Centimetres
<b>0</b>	<b>70ft</b>	<b>8.5 in</b>
<b>70ft</b>	<b>121ft</b>	<b>6 in</b>

**Construction Record**

Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres	
			From	To
<b>6 1/2</b>	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	<b>.188</b>	<b>0</b>	<b>70ft</b>
<b>Screen</b>				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
<b>No Casing or Screen</b>				
	<input checked="" type="checkbox"/> Open hole		<b>70ft</b>	<b>121ft</b>

**Test of Well Yield**

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
<b>air-pump</b>				
Pump intake set at - (metres) <b>70ft</b>	Static Level	<b>52ft</b>		
Pumping rate - (litres/min) <b>10gpm</b>	1	<b>54ft</b>	1	<b>56ft</b>
Duration of pumping <b>2 hrs + 0 min</b>	2	<b>53ft</b>	2	<b>55ft</b>
Final water level end of pumping <b>58ft</b>	3	<b>54ft</b>	3	<b>54ft</b>
Recommended pump type. <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	<b>55ft</b>	4	<b>54ft</b>
Recommended pump depth. <b>70ft</b> metres	5	<b>56ft</b>	5	<b>53ft</b>
Recommended pump rate. <b>10gpm</b> (litres/min)	10	<b>58ft</b>	10	<b>52ft</b>
If flowing give rate - (litres/min)	15		15	
	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		58ft	52ft

**Water Record**

Water found at **115ft** Metres / Kind of Water

Fresh     Sulphur  
 Gas     Salty     Minerals  
 Other: \_\_\_\_\_

m     Fresh     Sulphur  
 Gas     Salty     Minerals  
 Other: \_\_\_\_\_

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

Chlorinated  Yes     No

**Plugging and Sealing Record**     Annular space     Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
<b>0</b>	<b>70ft</b>	<b>BENTONITE SLURRY</b>	

**Method of Construction**

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

**Water Use**

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

**Final Status of Well**

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

**Location of Well**

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

Audit No. **z 35627**    Date Well Completed **2005**    MM **10**    DD **11**

Was the well owner's information package delivered?  Yes     No    Date Delivered \_\_\_\_\_

**Well Contractor/Technician Information**

Name of Well Contractor    Well Contractor's Licence No.  
**KEITH LANG WELL DRILLING INC**    **7154**

Business Address (street name, number, city etc.)  
**251 ELDON ST GODERICH ONT**

Name of Well Technician (last name, first name)    Well Technician's Licence No.  
**KEITH LANG**    **T 446**

Signature of Technician/Contractor    Date Submitted \_\_\_\_\_

**Ministry Use Only**

Data Source    Contractor **7154**

Date Received **NOV 14 2005**    Date of Inspection \_\_\_\_\_

Remarks    Well Record Number \_\_\_\_\_



**Instructions for Completing Form**

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Help Desk (Toll Free) at 1-888-396-9355.
- **All metre measurements shall be reported to 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

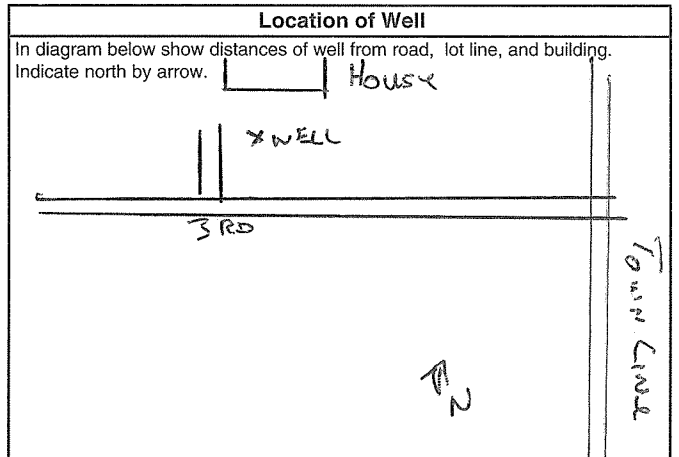
**Ministry Use Only**

Address of Well Location (County/District/Municipality) <b>DUFFERIN</b>		Township <b>EAST LUTHER</b>	Lot <b>32</b>	Concession <b>3</b>
RR#/Street Number/Name		City/Town/Village	Site/Compartment/Block/Tract etc.	
GPS Reading	NAD <b>83</b>	Zone <b>17</b>	Easting <b>555948</b>	Northing <b>4861229</b>
Unit Make/Model <b>MAGELEN</b>		Mode of Operation: <input type="checkbox"/> Undifferentiated <input checked="" type="checkbox"/> Averaged <input type="checkbox"/> Differentiated, specify _____		

**Log of Overburden and Bedrock Materials (see instructions)**

General Colour	Most common material	Other Materials	General Description	Depth / Metres	
				From	To
BROWN	CLAY & STONES			0	21 ft
GRAY	CLAY GRAVEL			21 ft	42 ft
GRAY	CLAY & STONES			42 ft	94 ft
GRAY	LIMESTONE			94 ft	180 ft

Hole Diameter			Construction Record				Test of Well Yield						
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material *	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down Time min	Water Level Metres	Recovery Time min	Water Level Metres	
0	97 ft	8.75 in	6 1/4	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	.188	0	97 ft	pump-air		70 ft			
97 ft	180 ft	6 in	<b>Casing</b>						Pump intake set at - (metres) 140 ft	Static Level			
<b>Water Record</b>			<b>Screen</b>						Pumping rate - (litres/min) 5 gpm	1	74 ft	1	
Water found at ___ Metres	Kind of Water		Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.			Duration of pumping 1 hrs + 0 min	2	79 ft	2		
1.56 ft	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:		<b>No Casing or Screen</b>						Final water level end of pumping 29 ft metres	3	83 ft	3	
1.68 ft	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Open hole				97 ft	180 ft	Recommended pump type. <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	87 ft	4	
___ m	<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:		<b>Plugging and Sealing Record</b> <input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment						Recommended pump depth 140 ft metres	5	90 ft	5	108 ft
After test of well yield, water was	<input checked="" type="checkbox"/> Clear and sediment free <input type="checkbox"/> Other, specify _____		Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)		Recommended pump rate. (litres/min) 5 gpm	10	106 ft	10	94 ft	
Chlorinated <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			0	97 ft	BENTONITE SLURRY		If flowing give rate - (litres/min)	15	119 ft	15	83 ft		
			<b>Method of Construction</b>					If pumping discontinued, give reason.	20	126 ft	20	76 ft	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Digging						25	127 ft	25	71 ft	
<input checked="" type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Jetting	<input type="checkbox"/> Other						30	129 ft	30	70 ft	
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Boring	<input type="checkbox"/> Driving						40		40			
<b>Water Use</b>								50		50			
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Industrial	<input type="checkbox"/> Public Supply	<input type="checkbox"/> Other						60	129 ft	60	70 ft	
<input type="checkbox"/> Stock	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used											
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Municipal	<input type="checkbox"/> Cooling & air conditioning											
<b>Final Status of Well</b>													
<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Recharge well	<input type="checkbox"/> Unfinished	<input type="checkbox"/> Abandoned, (Other)										
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Dewatering											
<input type="checkbox"/> Test Hole	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well											
<b>Well Contractor/Technician Information</b>													
Name of Well Contractor <b>KEITH LANG WELL DRILLING INC</b>		Well Contractor's Licence No. <b>7154</b>											
Business Address (street name, number, city etc.) <b>251 ELDON ST GODERICH ONT</b>													
Name of Well Technician (last name, first name) <b>KEITH LANG</b>		Well Technician's Licence No. <b>T446</b>											
Signature of Technician/Contractor <i>Keith Lang</i>		Date Submitted YYYY MM DD											
<input checked="" type="checkbox"/>													



Audit No. <b>z 72130</b>	Date Well Completed YYYY MM DD <b>2007 7 23</b>
Was the well owner's information package delivered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Delivered YYYY MM DD

Ministry Use Only			
Data Source	Contractor <b>7154</b>		
Date Received YYYY MM DD <b>AUG 23 2007</b>	Date of Inspection YYYY MM DD		
Remarks	Well Record Number		



Address of Well Location (Street Number/Name) <b>#4 King St</b>		Township <b>East Luther</b>	Lot <b>31</b>	Concession <b>2</b>
County/District/Municipality <b>Dufferin</b>		City/Town/Village <b>Grand Valley</b>	Province <b>Ontario</b>	Postal Code
UTM Coordinates NAD 83	Zone <b>17</b>	Easting <b>55075</b>	Northing <b>4860829</b>	Municipal Plan and Sublot Number

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Abandon 5" drilled well in the village of Grand Valley casing cut off 3 ft below grade					

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From: -3 To: 70	Holeplug	
From: 70 To: 77	Gravel	

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

Construction Record - Casing			Status of Well		
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input checked="" type="checkbox"/> Abandoned, other, specify <b>Town water</b> <input type="checkbox"/> Other, specify
			From	To	
5"				77'	

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

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

Well Contractor and Well Technician Information	
Business Name of Well Contractor <b>Highland Water Wells</b>	Well Contractor's Licence No. <b>2576</b>
Business Address (Street Number/Name) <b>Box 141 Durham</b>	Municipality
Province <b>NO</b>	Postal Code <b>061R0</b>
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name) <b>Wilson Erich</b>
Well Technician's Licence No. <b>113</b>	Signature of Technician and/or Contractor <i>[Signature]</i>
	Date Submitted <b>20090120</b>

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:	Static Level	<b>12'</b>		
	1		1	
	Pump intake set at (m/ft)	2	2	
	Pumping rate (l/min / GPM)	3	3	
	Duration of pumping hrs + min	4	4	
	Final water level end of pumping (m/ft)	5	5	
If flowing give rate (l/min / GPM)	10		10	
	15		15	
	20		20	
	Recommended pump depth (m/ft)	25	25	
	Recommended pump rate (l/min / GPM)	30	30	
	Well production (l/min / GPM)	40	40	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	50	50		
	60	60		

Map of Well Location	
Please provide a map below following instructions on the back.	
Comments:	

Ministry Use Only	
Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D <b>20090119</b>
Date Work Completed <b>20090119</b>	
Audit No. <b>2 90739</b>	
Received <b>JUN 19 2009</b>	



**Instructions for Completing Form**

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

<b>Well Owner's Information and Location of Well Information</b>				<b>Ministry Use Only</b>			
MUN		CON		LOT			
First Name <b>ARISS GLEN DEVELOPMENTS LTD.</b>		Last Name		Mailing Address (Street Number/Name, RR, Lot, Concession) <b>Box 1112, 295 Southgate Dr.</b>			
County/District/Municipality <b>GUELPH</b>		Township/City/Town/Village <b>GUELPH</b>		Province <b>Ontario</b>		Postal Code <b>N1G 3M5</b>	
Address of Well Location (County/District/Municipality) <b>County of Dufferin</b>		Township <b>Tshp of East Luther Grand</b>		Lot <b>31</b>		Concession <b>3</b>	
RR#/Street Number/Name <b>file rd</b>		City/Town/Village <b>Grand Valley</b>		Site/Compartment/Block/Tract etc. <b>Blk C, Plan 114</b>			
GPS Reading	NAD <b>83</b>	Zone <b>17T</b>	Easting <b>555188</b>	Northing <b>480632</b>	Unit Make/Model <b>Garmin</b>	Mode of Operation: <input type="checkbox"/> Undifferentiated <input checked="" type="checkbox"/> Averaged	<input type="checkbox"/> Differentiated, specify

**Log of Overburden and Bedrock Materials (see instructions)**

General Colour	Most common material	Other Materials	General Description	Depth Metres	
				From	To
gray	clay	Boulders	Dense	0	20'
Brown	sand	clay	Dense	20'	25'
Grey	clay	Boulders.	Dense	25'	45'

*"cluster of 3 wells"*

<b>Hole Diameter</b>	<b>Construction Record</b>	<b>Test of Well Yield</b>
Depth From To Metres 0 4 1/4	Inside diam centimetres 2"	Pumping test method Pump intake set at - (metres) Pumping rate - (litres/min) Duration of pumping Final water level end of pumping Recommended pump type Recommended pump depth Recommended pump rate If flowing give rate If pumping discontinued, give reason.
<b>Water Record</b>	Material <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Draw Down Time min Water Level Metres
Water found at Metres Kind of Water <input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals Other:	Wall thickness centimetres 0 35'	Recovery Time min Water Level Metres
After test of well yield, water was <input type="checkbox"/> Clear and sediment free <input type="checkbox"/> Other, specify	<b>Screen</b> Outside diam 2"	Static Level 1 2 3 4 5 10 15 20 25 30 40 50 60
Chlorinated <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>No Casing or Screen</b> <input type="checkbox"/> Open hole	

**Plugging and Sealing Record**  Annular space  Abandonment

Depth set at - Metres From To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0 34'	Bentonite chips	34'
34 45'	silica sand	11'

**Method of Construction**

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

**Water Use**

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

**Final Status of Well**

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

**Location of Well**

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

Audit No. **2 49927** Date Well Completed **20090417**

Was the well owner's information package delivered?  Yes  No Date Delivered

**Well Contractor/Technician Information**

Name of Well Contractor  
**LONDON SOIL TEST LTD**

Business Address (street name, number, city etc.)  
**B.B.C. DUNDALK ON N1C 1B0**

Name of Well Technician (last name, first name)  
**Collette Raymond**

Signature of Technician/Contractor

Well Contractor's Licence No.  
**7190**

Well Technician's Licence No.  
**1870**

Date Submitted **20090501**

**Ministry Use Only**

Data Source  
**JUL 02 2009**

Contractor  
**20090417**

Date Received **20090417** Date of Inspection

Remarks  
**20090501**

Well Record Number



Measurements recorded in:  Metric  Imperial

Well Location

Address of Well Location (Street Number/Name) **Concession 2 (Amarath East Luther**  
 County/District/Municipality **Dufferin** Township **East Luther** Lot **31** Concession **2**  
 City/Town/Village **Grand Valley** Province **Ontario** Postal Code \_\_\_\_\_  
 UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other  
 NAD 83 **1175555824860636**

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Brn.	gravel	silt	Cemented.	0'	5'
Grey	clay	gravel	Packed.	5'	10'
Grey	silt	gravel/Boulders	Cemented	10'	22'

**Annular Space**

Depth Set at (m/ft)		Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From	To		
0'	10'	Bentonite	

**Method of Construction**

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

**Construction Record - Casing**

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
2"	Plastic	Sch 40	0'	12'	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

**Construction Record - Screen**

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
2"	Plastic	10	10'	22'

**Water Details**

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	0' to 22'	8"
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____		
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____		

**Well Contractor and Well Technician Information**

Business Name of Well Contractor **Hardwork Drilling Inc.** Well Contractor's Licence No. **7238**  
 Business Address (Street Number/Name) **25 Lewis Road Unit C** Municipality **Guelph**  
 Province **ON** Postal Code **N1H1E9** Business E-mail Address \_\_\_\_\_

Bus. Telephone No. (inc. area code) **5198269340** Name of Well Technician (Last Name, First Name) **Kyle Smith**  
 Well Technician's Licence No. **3591** Signature of Technician and/or Contractor **Kyle Smith** Date Submitted **20100726**

**Results of Well Yield Testing**

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

**Map of Well Location**

Please provide a map below following instructions on the back.

Comments: **See Map.**

**Well owner's information package delivered**  Yes  No

Date Package Delivered **20100715**

Date Work Completed \_\_\_\_\_

**Ministry Use Only**

Audit No. **z114063**

REC'D **AUG 04 2010**







Measurements recorded in:  Metric  Imperial

Well Location

Address of Well Location (Street Number/Name): 242463 AMARANTH ST E  
Township: EAST LUTHER Lot: 32 Concession: 3

County/District/Municipality: DUFFERIN  
City/Town/Village: GRAND VALLEY Province: Ontario Postal Code: L0N1G0

UTM Coordinates: Zone: 83 Easting: 17559907486 Northing: 1205  
Municipal Plan and Sublot Number: Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
			PREVIOUSLY DRILLED WELL MOE Audit No 176923		
BROWN	LIMESTONE			201	318
WHITE	LIMESTONE			318	379
GRAY	LIMESTONE			379	399
GRAY	SHALE			399	402

Annular Space

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From	To	

Method of Construction

Cable Tool  Diamond  Public  Commercial  Not used

Rotary (Conventional)  Jetting  Domestic  Municipal  Dewatering

Rotary (Reverse)  Driving  Livestock  Test Hole  Monitoring

Boring  Digging  Irrigation  Cooling & Air Conditioning

Air percussion  Industrial  Other, specify

Other, specify

Results of Well Yield Testing

After test of well yield, water was:		Draw Down		Recovery	
<input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify		Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:		Static Level	1948		3724
Pump intake set at (m/ft): 55		1	2192	1	3480
Pumping rate (l/min / GPM): 55		2	2393	2	3226
Duration of pumping: 1 hrs + 0 min		3	2560	3	3102
Final water level end of pumping (m/ft): 3724		4	2698	4	2946
If flowing give rate (l/min / GPM)		5	2818	5	2831
Recommended pump depth (m/ft): 55		10	3204	10	2437
Recommended pump rate (l/min / GPM): 38		15	3404	15	2247
Well production (l/min / GPM)		20	3514	20	2156
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		25	3578	25	2104
		30	3619	30	2070
		40	3670	40	2040
		50	3700	50	2020
		60	3724	60	2002

Construction Record - Casing

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

Construction Record - Screen

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

Water Details

Water found at Depth (m/ft)  Gas  Other, specify

Kind of Water:  Fresh  Untested

Hole Diameter

Depth (m/ft)	Diameter (cm/in)
201' 402'	5"

Well Contractor and Well Technician Information

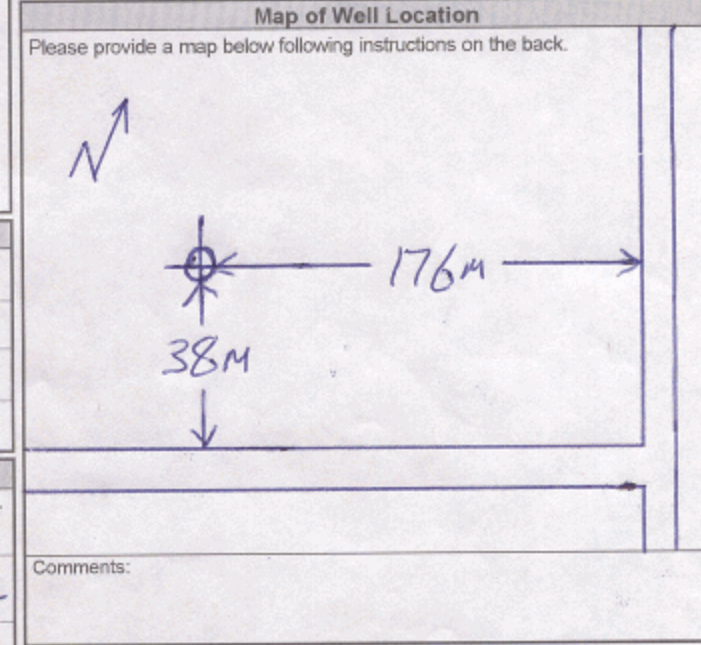
Business Name of Well Contractor: WELL INITIATIVES LTD  
Well Contractor's Licence No.: 7221

Business Address (Street Number/Name): 15 TOWNLINE  
Municipality: ORANGEVILLE

Province: ON Postal Code: L9W3R4 Business E-mail Address:

Bus. Telephone No. (inc. area code): 5199415331  
Name of Well Technician (Last Name, First Name): LOSCH KIM

Well Technician's Licence No.: T927  
Signature of Technician and/or Contractor: [Signature]  
Date Submitted: 20101029



Well owner's information package delivered:  Yes  No

Date Package Delivered: 20101022  
Date Work Completed: 20101008

Ministry Use Only

Audit No.: z118785  
Received: FEB 04 2011



Address of Well Location (Street Number/Name)		Township <b>EAST LUTHER</b>		Lot <b>30</b>	Concession <b>4</b>
County/District/Municipality <b>DUFFERIN</b>			City/Town/Village		Province <b>Ontario</b>
UTM Coordinates		Zone <b>17</b>	Easting <b>554434</b>	Northing <b>4862198</b>	Municipal Plan and Sublot Number
NAD <b>83</b>		Other			

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	CLAY			0	21ft
GRAY	CLAY			21ft	34ft
GRAY	CLAY & STONES			34ft	68ft
GRAY	LIMESTONE			68ft	142ft

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From: 0 To: 70ft	BENTONITE SLURRY	

Results of Well Yield Testing				
After test of well yield, water was:	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
<input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____				
If pumping discontinued, give reason:				
	Static Level	30ft		
Pump intake set at (m/ft)	1		1	
90ft	2		2	
Pumping rate (l/min / GPM)	3		3	
10gpm	4		4	
Duration of pumping	5	46ft	5	41ft
2 hrs + 0 min	10	52ft	10	36ft
Final water level end of pumping (m/ft)	15	58ft	15	31ft
67ft	20	62ft	20	30ft
If flowing give rate (l/min / GPM)	25	65ft	25	
	30	67ft	30	
Recommended pump depth (m/ft)	40		40	
90ft	50		50	
Recommended pump rate (l/min / GPM)	60	67ft	60	30ft
10gpm				
Well production (l/min / GPM)				
Disinfected?				
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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

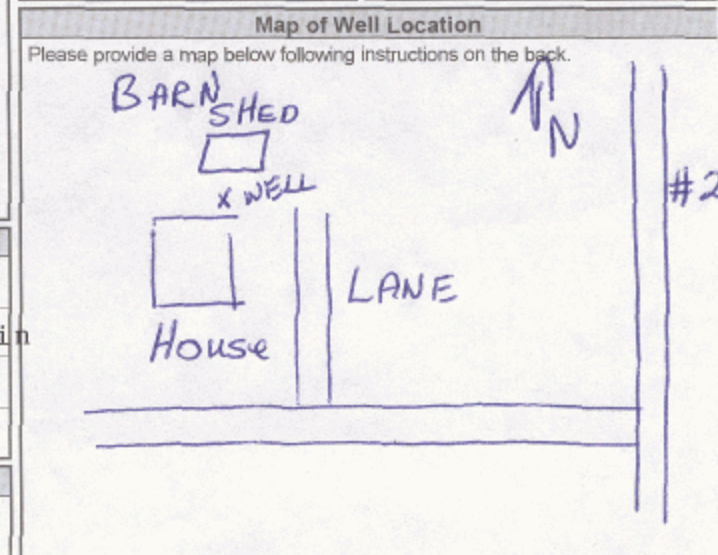
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Replacement Well
			From To		
6 1/4	STEEL	.188	0 70ft	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Recharge Well
6in	open hole		70ft 142ft	<input type="checkbox"/> Dewatering Well	<input type="checkbox"/> Observation and/or Monitoring Hole

Construction Record - Screen				Status of Well
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From To	
				<input type="checkbox"/> Alteration (Construction)
				<input type="checkbox"/> Abandoned, Insufficient Supply
				<input type="checkbox"/> Abandoned, Poor Water Quality
				<input type="checkbox"/> Abandoned, other, specify _____
				<input type="checkbox"/> Other, specify _____

Water Details		Hole Diameter		
Water found at Depth 117ft (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)	
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	From To		
Water found at Depth 135ft (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	0 70ft	8.75in	
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	70ft 142ft	6in	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested			
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			

Well Contractor and Well Technician Information	
Business Name of Well Contractor <b>KEITH LANG WELL DRILLING INC</b>	Well Contractor's Licence No. <b>7154</b>
Business Address (Street Number/Name) <b>251 ELDON ST</b>	Municipality
Province <b>ONT</b>	Postal Code <b>N7A3R9</b>
Business E-mail Address	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name) <b>KEITH LANG</b>
Well Technician's Licence No. <b>T446</b>	Signature of Technician and/or Contractor <i>Keith Lang</i>
	Date Submitted Y Y Y Y M M D D



Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Y Y Y Y M M D D <b>2011 11 5</b>	Audit No. <b>z119197</b> JUL 28 2011
	Date Work Completed Y Y Y Y M M D D	Received



## Map: Well records

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

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

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[Go Back to Map](#)

### Well ID

Well ID Number: 7180820

Well Audit Number: Z128071

Well Tag Number: A112876

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	EAST LUTHER TOWNSHIP
<b>Lot</b>	031
<b>Concession</b>	CON 03



<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 554819.00 Northing: 4861874.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>

### Annular Space/Abandonment Sealing Record

<b>Depth From</b>	<b>Depth To</b>	<b>Type of Sealant Used (Material and Type)</b>	<b>Volume Placed</b>

## Method of Construction & Well Use

Method of Construction	Well Use	
	Domestic	

## Status of Well

Alteration

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To	

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To	

--	--	--	--	--

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7143

### Results of Well Yield Testing

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

## Draw Down & Recovery

<b>Draw Down Time(min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time(min)</b>	<b>Recovery Water level</b>
SWL			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	

50		50	
60		60	

**Water Details**

Water Found at Depth	Kind

**Hole Diameter**

Depth From	Depth To	Diameter

**Audit Number:** Z128071

**Date Well Completed:** September 28, 2011

**Date Well Record Received by MOE:** May 14, 2012

## **Related**

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

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

Updated: October 18, 2021

Published: March 20, 2014



Measurements recorded in:  Metric  Imperial

Page 1 of 1

Address of Well Location (Street Number/Name) \_\_\_\_\_ Township East Lutter Lot 30 Concession 3

County/District/Municipality Dufferin City/Town/Village Grand Valley Province Ontario Postal Code \_\_\_\_\_

UTM Coordinates Zone 18 Easting 5541039 Northing 4961065 Municipal Plan and Sublot Number \_\_\_\_\_ Other \_\_\_\_\_

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)
				From To
	12.7cm diameter well abandoned. Top of casing 2.0 m below grade			

Annular Space			
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )	
From: 66.4 To: 26.5	Chlorinated Gravel	2.00.44	
From: 26.5 To: 2.0	Bentonite Slurry	1.20.30	

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

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

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

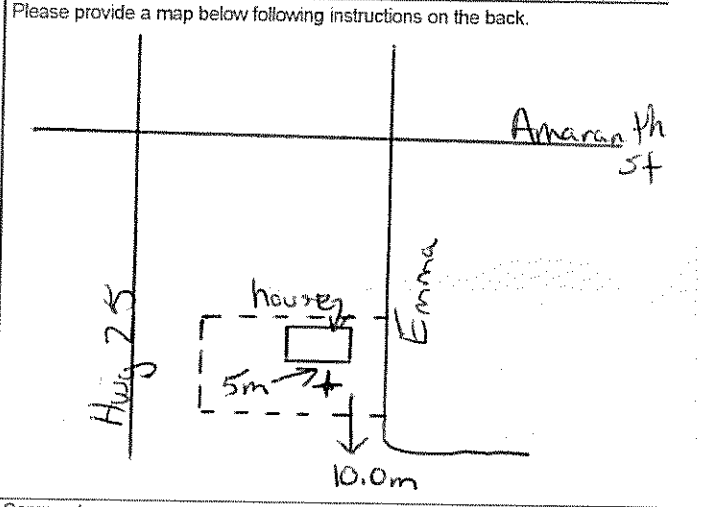
Construction Record - Screen			
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)
			From To

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

Well Contractor and Well Technician Information	
Business Name of Well Contractor _____	Well Contractor's Licence No. <u>3406</u>
Business Address (Street Number/Name) _____	Municipality _____
Province _____ Postal Code _____	Business E-mail Address _____

Bus. Telephone No. (inc. area code) _____	Name of Well Technician (Last Name, First Name) <u>Chris Gerrits</u>
Well Technician's Licence No. <u>2738</u>	Signature of Technician and/or Contractor <u>[Signature]</u> Date Submitted <u>2011/11/09</u>

**Map of Well Location**



Comments: Not to scale

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered <u>2011/11/09</u>	<b>Ministry Use Only</b> Audit No. <u>2127325</u> Received _____
Date Work Completed <u>2011/11/09</u>		



Measurements recorded in:  Metric  Imperial

A179709

Page 1 of 2

**Well Location**

Address of Well Location (Street Number/Name) 152 MAIN ST. N.		Township	Lot	Concession	
County/District/Municipality		City/Town/Village GRAND VALLEY		Province Ontario	Postal Code L9W 5S7
UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	
NAD 83	17	554671	4861443		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	SILT	CLAY, STONE, GRAVEL	LOOSE	0	2.4
GREY	FINE SAND	CLAY, GRAVEL	PACKED & HARD.	2.4	4.6

**Annular Space**

Depth Set at (m/ft)		Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From	To		
0	2.8	BENTONITE	
2.8	4.6	SAND PACK	

**Results of Well Yield Testing**

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

**Method of Construction**

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

**Construction Record - Casing**

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
5.2	PLASTIC	0.6	0	3.1	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

**Construction Record - Screen**

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		Status of Well
			From	To	
6.4	PLASTIC	10	3.1	4.6	<input type="checkbox"/> Other, specify _____

**Water Details**

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Hole Diameter	
		Depth (m/ft)	Diameter (cm/in)
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	From	To
		0	4.6
			21

**Well Contractor and Well Technician Information**

Business Name of Well Contractor DAVIS DRILLING LTD		Well Contractor's Licence No. 714172
Business Address (Street Number/Name) 813 WIPISSING Rd		Municipality MILTON
Province ONT	Postal Code L9T4Z4	Business E-mail Address DAVISDRILLING@BELLNET.CA
Bus. Telephone No. (inc. area code) 905-299-6915	Name of Well Technician (Last Name, First Name) HORVAT, PETER	
Well Technician's Licence No. 31559	Signature of Technician and/or Contractor <i>[Signature]</i>	
	Date Submitted 20150403	

**Map of Well Location**

Please provide a map below following instructions on the back.

SEE MAP ATTACHED

LABELED MW1

Comments:

Well owner's information package delivered	Date Package Delivered Y Y Y Y / M M / D D
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Work Completed 20150319

**Ministry Use Only**

Audit No. <b>2208576</b>
Received <b>APR 06 2015</b>





Google earth



C-7472  
Z 208576

APR 06 2015



Measurements recorded in:  Metric  Imperial

A179708

Address of Well Location (Street Number/Name) 152 MAIN ST. N.		Township	Lot	Concession
County/District/Municipality		City/Town/Village GRAND VALLEY	Province Ontario	Postal Code L9W5S7
UTM Coordinates NAD 83	Zone 17	Easting 554778	Northing 4861272	Municipal Plan and Sublot Number

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)				
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From To
BROWN	SILT	CLAY, STONE	LOOSE	0 2.4
CRET	FINE SAND	CLAY, GRAVEL	PACKED, HARD	2.4 4.6

Annular Space		
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
0 2.8	BENTONITE	
2.8 4.6	SAND PACK	

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input checked="" type="checkbox"/> Boring <input type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify	<input type="checkbox"/> Diamond <input type="checkbox"/> Jetting <input type="checkbox"/> Driving <input type="checkbox"/> Digging <input type="checkbox"/> Public <input type="checkbox"/> Commercial <input type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other, specify

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
			From	To	
5.2	PLASTIC	0.6	0	3.1	

Construction Record - Screen				Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		
			From	To	
6.4	PLASTIC	10	3.1	4.6	

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft) From To	Diameter (cm/in)
		0 4.6	21

Well Contractor and Well Technician Information	
Business Name of Well Contractor DAVIS DRILLING LTD.	Well Contractor's Licence No. 7472
Business Address (Street Number/Name) 873 NIPISSING RD.	Municipality MILTON
Province ONT	Postal Code L9W5S7
Business E-mail Address L9W5S7@DAVISDRILLING@BELLNET.CA	

Bus. Telephone No. (inc. area code) 9052996915	Name of Well Technician (Last Name, First Name) HORVAT, PETER
Well Technician's Licence No. 3759	Signature of Technician and/or Contractor 
	Date Submitted 20150403

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

Map of Well Location
Please provide a map below following instructions on the back.
SEE MAP ATTACHED LABELLED MW2

Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y / M M / D D 20150319	Date Work Completed 20150319
Ministry Use Only Audit No. 2208577		Received APR 06 2015





Google earth

feet  
meters



800



C7472  
7208577

APR 06 2015





Address of Well Location (Street Number/Name): 20 Scott Street  
 Township: East Luther  
 County/District/Municipality: Dufferin County  
 City/Town/Village: Grand Valley  
 Province: Ontario  
 UTM Coordinates Zone: 83, Easting: 17555105, Northing: 4861246  
 Municipal Plan and Sublot Number: [Blank]  
 Other: [Blank]

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Br	Sand	Silt Gravel	Dry	0	5'
Dr	Sand some silt	Trace Till	Dry Firm	5'	15'
Light Gr	Silt Till	Some LG Cobble	Dry	15'	17'
Gr	Till		Dry	17'	20'
Gr	Till	Gravel	Dry	20'	25'

Annular Space		
Depth Set at (m/ft) From	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 - 1'	concrete	
1 - 20'	Bestonite chip	
20 - 25'	#3 sand	

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

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To	
2.07	Plastic	0.15	+32"	20	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
2.38	Plastic	.010	20	25

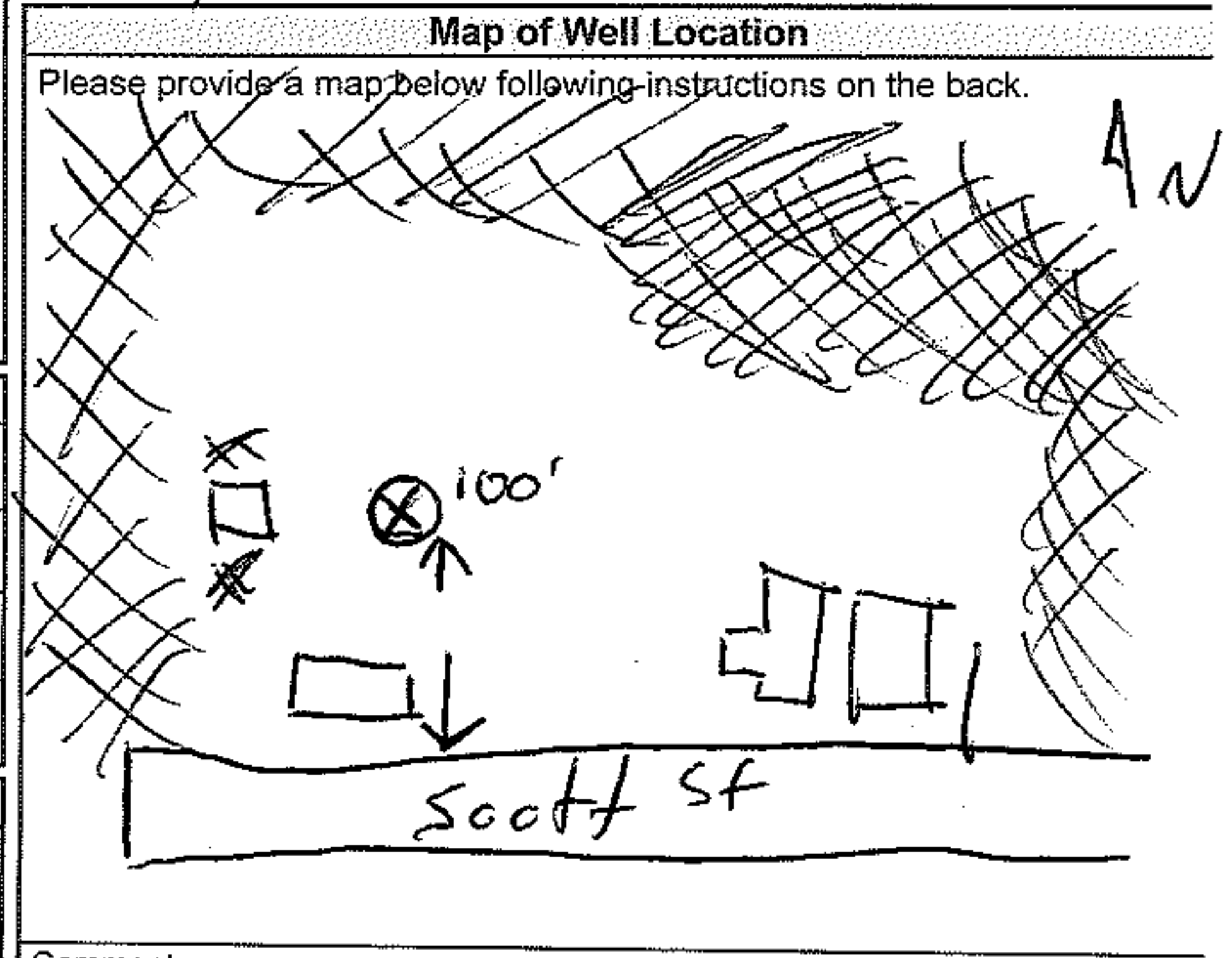
Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	Depth (m/ft) From	Diameter (cm/in) To
Dry		0	25' 9"

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: LONDON SOIL TEST LTD  
 Well Contractor's Licence No.: 7190  
 Business Address (Street Number/Name): B.R.6  
 Municipality: DUNDALK  
 Province: ON  
 Postal Code: N6C1B0  
 Business E-mail Address: info@londonsoil.com

Bus. Telephone No. (inc. area code): 5194555777  
 Name of Well Technician (Last Name, First Name): Paul Hanson  
 Well Technician's Licence No.: 3934  
 Signature of Technician and/or Contractor: [Signature]  
 Date Submitted: 20170704

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



Comments: stuck up casing

Well owner's information package delivered:  Yes  No

Date Package Delivered: YYY Y MM DD  
 Date Work Completed: 20170601

**Ministry Use Only**  
 Audit No.: 2259979  
 Received: JUN 11 2017

Measurements recorded in:  Metric  Imperial

Address of Well Location (Street Number/Name): 20 Scott Street  
 Township: East Luther  
 Lot:   
 Concession:   
 County/District/Municipality: Dufferin County  
 City/Town/Village: Grand Valley  
 Province: Ontario  
 Postal Code:   
 UTM Coordinates Zone: NAD 83  
 Easting: 17555120  
 Northing: 4861298  
 Municipal Plan and Sublot Number:   
 Other:   
 Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)
Br	sand	silt gravel	Dry Loose	0 7 1/2
Br	sand silt	trace till	Dry firm	7 1/2 15
Br	Till	boulder/Lg cobbles	Dry hard	15 17
Lg Gr	Till		Dry hard	17 25

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 1	concrete	
1 7 1/2	Dentonite chip	
19 25	#3 sand	

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

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

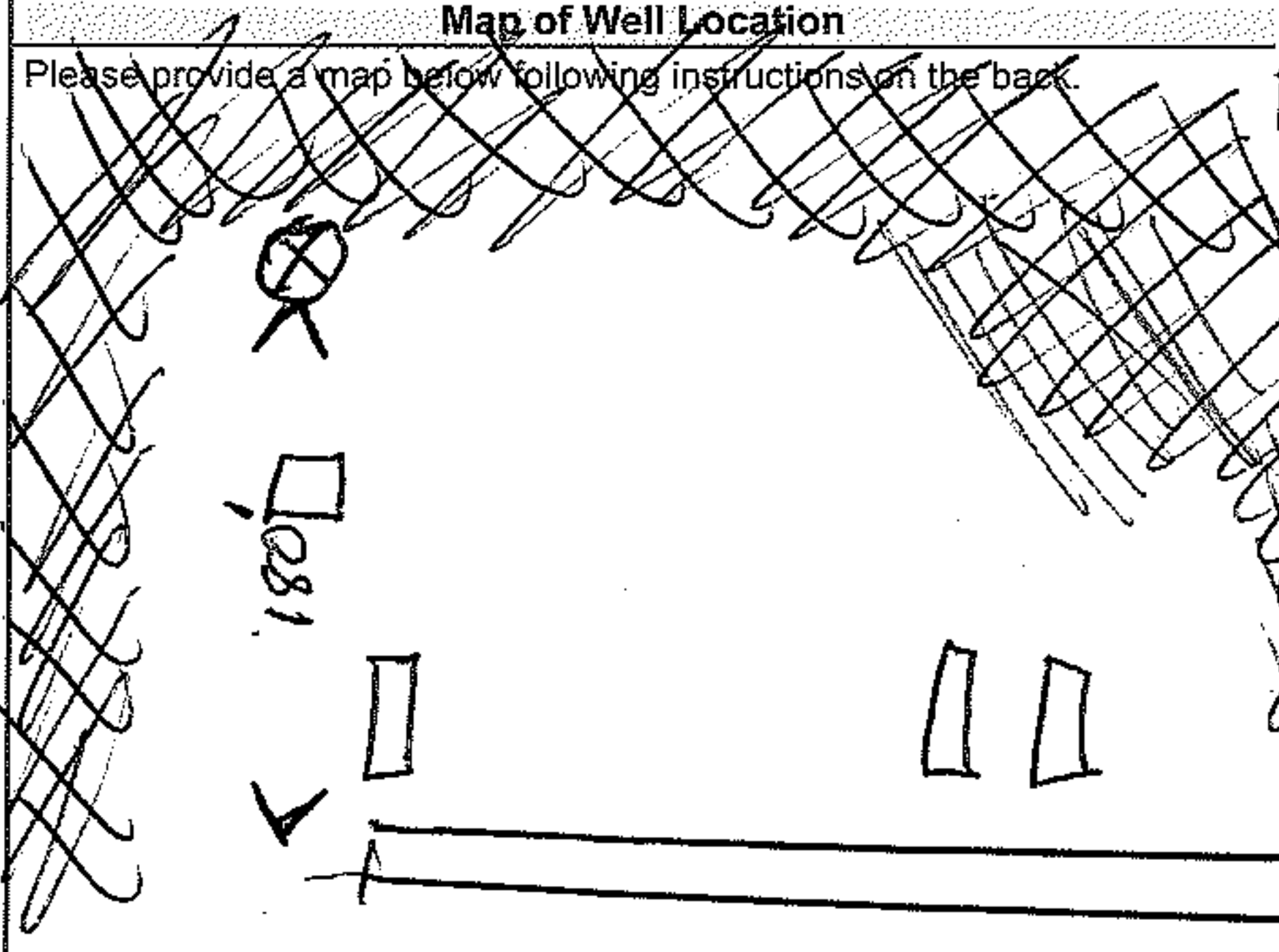
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____
			From	To	
2.07	Plastic	0.15	+34	20	

Construction Record - Screen					
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		<input type="checkbox"/> Other, specify _____
			From	To	
2.38	Plastic	010	20	25	

Water Details		Hole Diameter	
Water found at Depth (m/ft) <input checked="" type="checkbox"/> Dry <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____	Depth (m/ft) From	Diameter (cm/in) To
Water found at Depth (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____	0	25 9 1/4
Water found at Depth (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____		

Well Contractor and Well Technician Information

Business Name of Well Contractor: LONDON SOIL TEST LTD  
 Well Contractor's Licence No.: 7190  
 Business Address (Street Number/Name): B.R.6  
 Municipality: SUNDALK  
 Province: ON  
 Postal Code: N0C1B0  
 Business E-mail Address: info@londonsoil.com



Name of Well Technician (Last Name, First Name): Dan Pearson  
 Signature of Technician and/or Contractor: [Signature]  
 Date Submitted: 20170604  
 Well Technician's Licence No.: 3934

Comments: stick up casing

Wellowner's information package delivered:  Yes  No

Date Package Delivered: 20170601  
 Date Work Completed: 20170601

Ministry Use Only  
 Audit No.: 2259980  
 Received: JUL 11 2017



Measurements recorded in:  Metric  Imperial

**Tag #: A 224098**

Page / of /

Address of Well Location (Street Number/Name) <b>20 Scott Street</b>		Township <b>East Luther</b>	Lot	Concession
County/District/Municipality <b>Dufferin County</b>		City/Town/Village <b>Grand Valley</b>	Province <b>Ontario</b>	Postal Code
UTM Coordinates Zone Easting Northing NAD   8   3   <b>1755516814861222</b>	Municipal Plan and Sublot Number		Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Br	Sand	Gravel	Dry	0'	10'
Br	Sand	Silt, cobble	dry	10'	12'
Br	Sand	silt	Dry	12'	20'

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0' 1'	concrete	
1' 15'	Bentonite chip	
15' 20'	#3 sand	

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Boring <input type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify	<input type="checkbox"/> Diamond <input type="checkbox"/> Jetting <input type="checkbox"/> Driving <input type="checkbox"/> Digging <input type="checkbox"/> Public <input type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other, specify

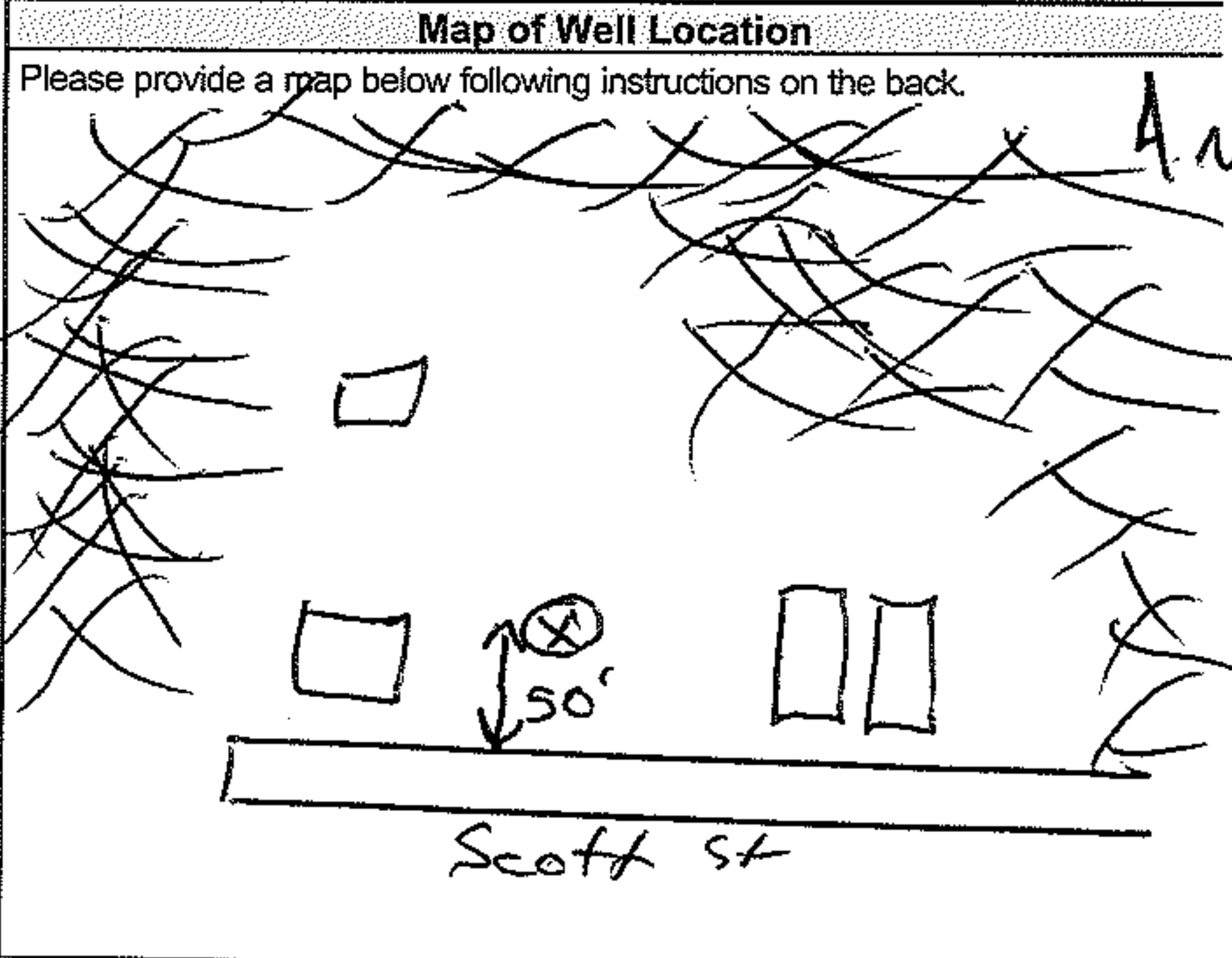
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	From	To
<del>2.069</del>	<del>Plastic</del>	<del>0.154</del>	<del>15'</del>		
2.069	Plastic	0.154	15'		

Construction Record - Screen				Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	From	To
2.375	Plastic	.010	15'		

Water Details		Hole Diameter	
Water found at Depth (m/ft) <b>Dry</b>	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft)	Diameter (cm/in)
		From: 0 To: 20	9"

Well Contractor and Well Technician Information			
Business Name of Well Contractor <b>LONDON SOIL TEST LTD</b>		Well Contractor's Licence No. <b>7190</b>	
Business Address (Street Number/Name) <b>B.R.6</b>		Municipality <b>DUNDALK</b>	
Province <b>ON</b>	Postal Code <b>N6C1B0</b>	Business E-mail Address <b>info@londonsoil.com</b>	
Bus Telephone No. (inc. area code) <b>5194555777</b>		Name of Well Technician (Last Name, First Name) <b>Dan Hanson</b>	
Well Technician's Licence No. <b>3934</b>		Signature of Technician and/or Contractor <i>[Signature]</i>	
		Date Submitted <b>20170704</b>	

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



Comments:  
**stake up casing**

Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D <b>20170704</b>	<b>Ministry Use Only</b>
	Date Work Completed <b>20170704</b>	Audit No. <b>2246500</b>
		Received <b>JUL 11 2017</b>



Well Tag No. (Place Sticker and/or Print Below)
Tag #: A 222614

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information
First Name: Town of Grand Valley
Last Name / Organization: Grand Valley
Municipality: Grand Valley
Province: ON
Postal Code: L9W5S6
Telephone No.: 519 928 5652

Well Location
Address of Well Location: 173353 Main St N
Township: East Luther
City/Town/Village: Grand Valley
Province: Ontario
Postal Code: L9W5S6
UTM Coordinates: NAD 83 1755491 64861626

Overburden and Bedrock Materials/Abandonment Sealing Record
Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth From, Depth To.
Rows include: Brown Clay Stones 0-6.1, Grey Clay Stones 6.1-14.0, Brown Clay Stones 14.0-17.6, Grey Clay Stones 17.6-21.3, Brown Clay Stones 21.3-27.1, Grey Limestone 27.1-57.0, Brown Limestone 57.0-97.0, Grey Limestone 97.0-127.4, Blue Shale 127.4-130.4

Annular Space
Table with columns: Depth Set at (m/ft) From, To; Type of Sealant Used; Volume Placed (m³/ft³)
Row: 0 to 7.6 Bentonite Hole Plug 0.2

Method of Construction
[X] Rotary (Conventional)
Well Use
[X] Test Hole

Construction Record - Casing
Table with columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/ft), Depth (m/ft) From, To
Rows: 16.0 Steel 0.5 +0.6 28.9; 15.6 Open Hole 28.9 130.4

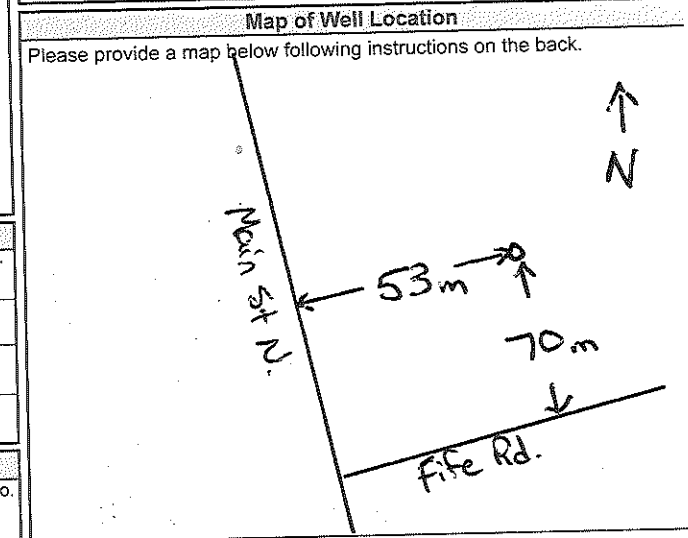
Construction Record - Screen
Table with columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From, To

Water Details
Table with columns: Water found at Depth (m/ft), Kind of Water, Hole Diameter (m/ft) Depth From, To, Diameter (cm/in)
Rows: 29.0-97.0m Gas Untested 0 7.6 25.0; 7.6 28.9 20.0; 28.9 130.4 15.6

Well Contractor and Well Technician Information
Business Name: Well Initiatives Limited
Business Address: 15 Townline Oranville
Well Contractor's Licence No.: 72221

Well Technician Information
Name: Philipp Bilek
Signature: [Signature]
Date Submitted: 20180131

Results of Well Yield Testing
Table with columns: Draw Down (Time, Water Level), Recovery (Time, Water Level)
Rows: 1-60 minutes showing draw down and recovery levels.



Comments:

Ministry Use Only
Audit No.: 2272638
Date Package Delivered: 20180123
Date Work Completed: 20180123
Received: FEB 08 2018



Measurements recorded in:  Metric  Imperial

NO TAG ISSUED

Page \_\_\_ of \_\_\_

Well Owner's Information

First Name, Last Name / Organization, E-mail Address, Mailing Address (Street Number/Name), Municipality, Province, Postal Code, Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name), Township, Lot, Concession, County/District/Municipality, City/Town/Village, Province, Postal Code, UTM Coordinates Zone, Easting, Northing, Municipal Plan and Sublot Number, Other

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Includes handwritten entry: DECOMMISSION 4" DIA DRILLED WELL STOCK EJECTOR AT 50' Bentonite Holeplug 50'-5' NATIVE SOILS 5'-0'

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

Results of Well Yield Testing table with columns: After test of well yield, water was, Draw Down (Time (min), Water Level (m/ft)), Recovery (Time (min), Water Level (m/ft)). Includes handwritten data for pumping rate and duration.

Method of Construction and Well Use checkboxes: Cable Tool, Rotary (Conventional/Reverse), Boring, Air percussion, Other, Diamond, Jetting, Driving, Digging, Public, Domestic, Livestock, Irrigation, Industrial, Commercial, Municipal, Test Hole, Cooling & Air Conditioning, Not used, Dewatering, Monitoring, Other, specify

Construction Record - Casing table with columns: Inside Diameter (cm/in), Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel), Wall Thickness (cm/in), Depth (m/ft) From, To, Status of Well (Water Supply, Replacement Well, Test Hole, Recharge Well, Dewatering Well, Observation and/or Monitoring Hole, Alteration (Construction), Abandoned, Insufficient Supply, Abandoned, Poor Water Quality, Abandoned, other, specify, Other, specify)

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

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

Well Contractor and Well Technician Information: Business Name of Well Contractor, Well Contractor's Licence No., Business Address (Street Number/Name), Municipality, Province, Postal Code, Business E-mail Address, Bus. Telephone No. (inc. area code), Name of Well Technician (Last Name, First Name), Well Technician's Licence No., Signature of Technician and/or Contractor, Date Submitted

Map of Well Location: Please provide a map below following instructions on the back. Includes a hand-drawn map showing Emma St, Amaranth St, and County Rd 25.

## Map: Well records

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

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

---

[Go Back to Map](#)

### Well ID

Well ID Number: 7372419

Well Audit Number: Z320263

Well Tag Number: A300191

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

### Well Location

<b>Address of Well Location</b>	
<b>Township</b>	EAST LUTHER TOWNSHIP
<b>Lot</b>	032
<b>Concession</b>	CON 03



<b>County/District/Municipality</b>	DUFFERIN
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 555920.00 Northing: 4861395.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

### Overburden and Bedrock Materials Interval

<b>General Colour</b>	<b>Most Common Material</b>	<b>Other Materials</b>	<b>General Description</b>	<b>Depth From</b>	<b>Depth To</b>

### Annular Space/Abandonment Sealing Record

<b>Depth From</b>	<b>Depth To</b>	<b>Type of Sealant Used (Material and Type)</b>	<b>Volume Placed</b>

---

## Method of Construction & Well Use

Method of Construction	Well Use	

## Status of Well

### Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To	

### Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To	

# Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7154

## Results of Well Yield Testing

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

## Draw Down & Recovery

<b>Draw Down</b>	<b>Draw Down</b>	<b>Recovery</b>	<b>Recovery</b>
------------------	------------------	-----------------	-----------------

<b>Time(min)</b>	<b>Water level</b>	<b>Time(min)</b>	<b>Water level</b>
SWL			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	
50		50	

60		60	

**Water Details**

Water Found at Depth	Kind

**Hole Diameter**

Depth From	Depth To	Diameter

**Audit Number:** Z320263

**Date Well Completed:** October 06, 2020

**Date Well Record Received by MOE:** November 05, 2020

## Related

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

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

Updated: October 18, 2021

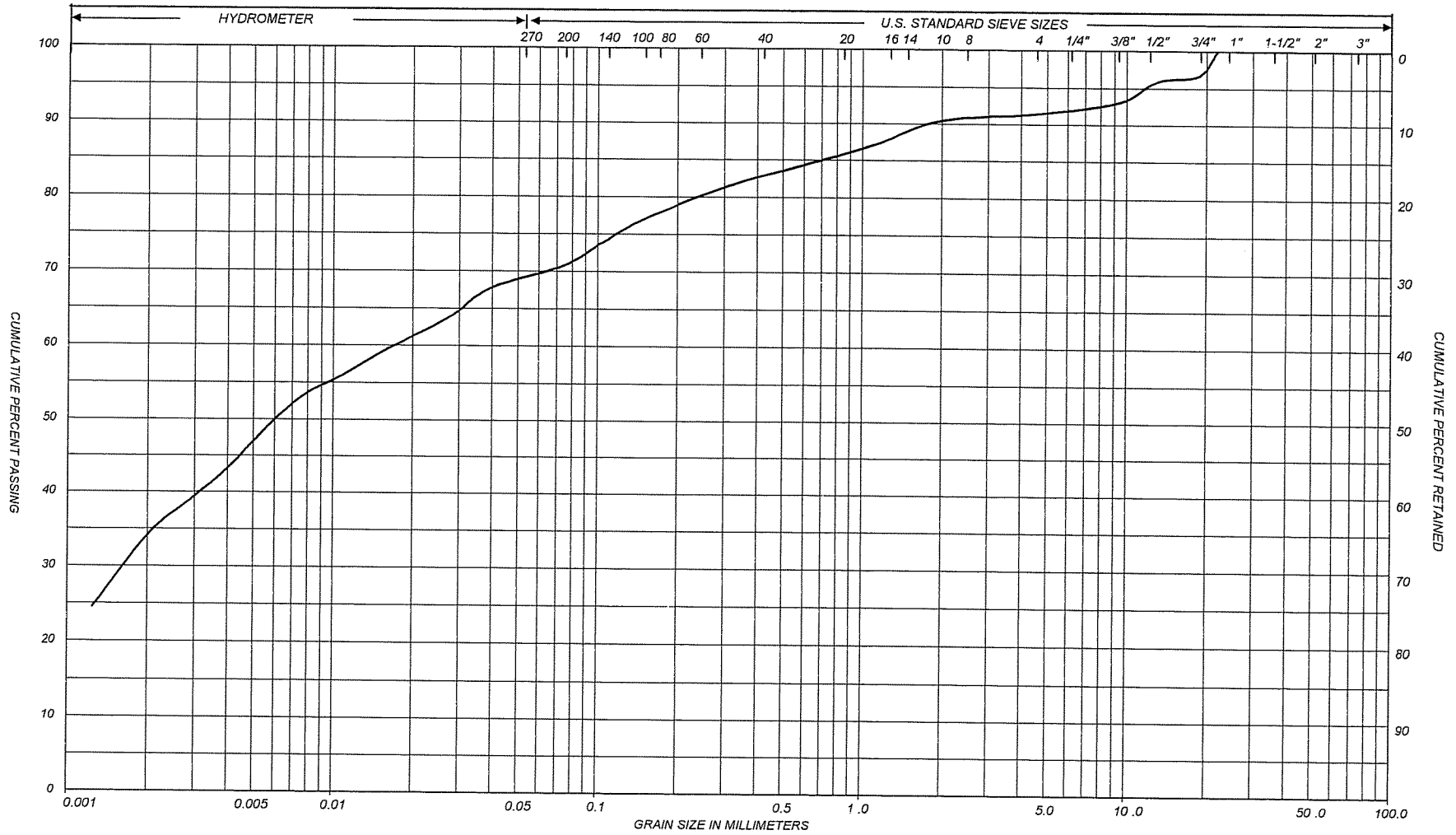
Published: March 20, 2014



**APPENDIX C:**  
**BOREHOLE LOGS AND GRAIN SIZE ANALYSIS RESULTS**

(Peto McCallum Ltd. (2009) and JLP Services Inc. (2022))

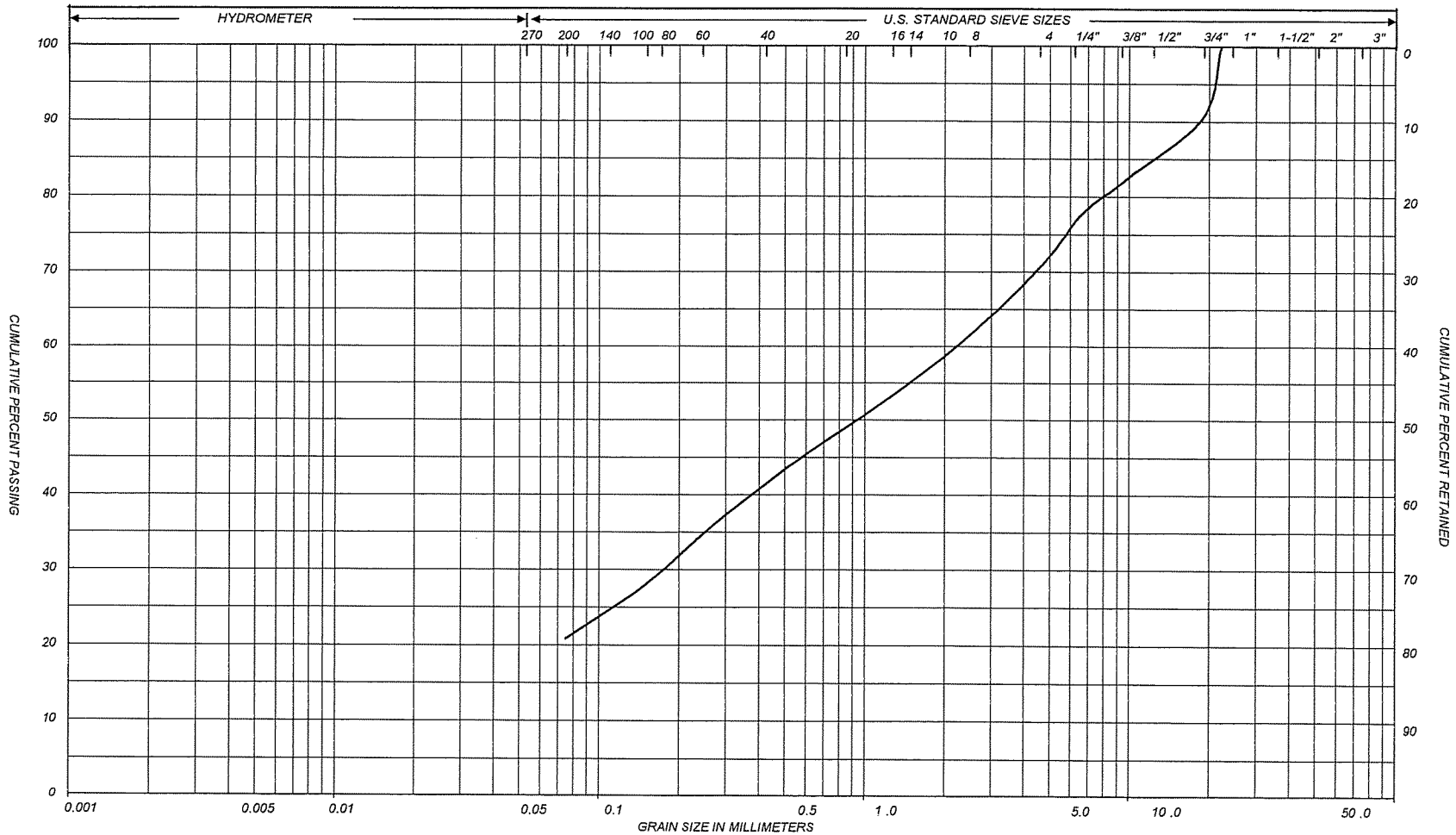
# PARTICLE SIZE DISTRIBUTION CHART



SILT & CLAY				FINE SAND			MEDIUM SAND		COARSE SAND		GRAVEL			COBBLES	UNIFIED
CLAY	FINE SILT		COARSE SILT	FINE SAND		MEDIUM SAND		COARSE SAND		GRAVEL			COBBLES	M.I.T.	
	CLAY		SILT		VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL				U.S. BUREAU		

REMARKS Borehole 3, Sample SS2 and SS3, Depth 0.60 to 2.00 m  
CLAYEY SILT TILL, TRACE GRAVEL, TRACE SAND

**PARTICLE SIZE DISTRIBUTION CHART**

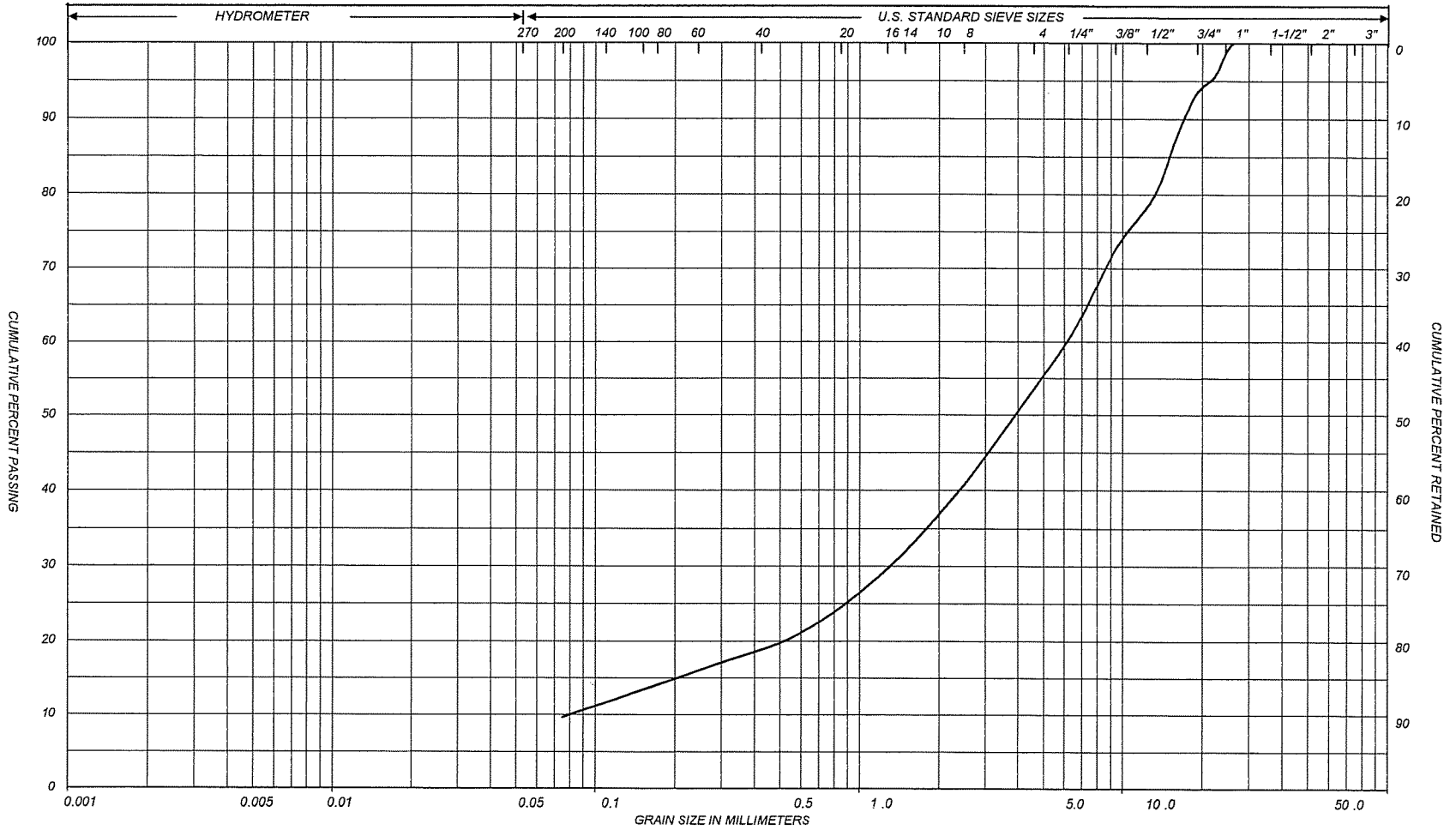


SILT & CLAY			FINE SAND		MEDIUM SAND	COARSE SAND	GRAVEL		COBBLES	UNIFIED
CLAY	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL		COBBLES	M.I.T.
CLAY	SILT		VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL			U.S. BUREAU

REMARKS Borehole 9, Sample SS2, Depth 0.10 to 1.50 m

MEDIUM SAND, SOME GRAVEL, SOME SILT

**PARTICLE SIZE DISTRIBUTION CHART**



SILT & CLAY				FINE SAND			MEDIUM SAND	COARSE SAND	GRAVEL		COBBLES	UNIFIED
CLAY	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL				COBBLES	M.I.T.
CLAY	SILT			VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL				U.S. BUREAU

REMARKS Borehole 9, Sample SS3, Depth 1.50 to 2.75 m

SAND AND GRAVEL, TRACE SILT

# LIST OF ABBREVIATIONS



## PENETRATION RESISTANCE

Standard Penetration Resistance N: - The number of blows required to advance a standard split spoon sampler 0.3 m into the subsoil. Driven by means of a 63.5 kg hammer falling freely a distance of 0.76 m.

Dynamic Penetration Resistance: - The number of blows required to advance a 51 mm, 60 degree cone, fitted to the end of drill rods, 0.3 m into the subsoil. The driving energy being 475 J per blow.

## DESCRIPTION OF SOIL

The consistency of cohesive soils and the relative density or denseness of cohesionless soils are described in the following terms:

<u>CONSISTENCY</u>	<u>N (blows/0.3 m)</u>	<u>c (kPa)</u>	<u>DENSENESS</u>	<u>N (blows/0.3 m)</u>
Very Soft	0 - 2	0 - 12	Very Loose	0 - 4
Soft	2 - 4	12 - 25	Loose	4 - 10
Firm	4 - 8	25 - 50	Compact	10 - 30
Stiff	8 - 15	50 - 100	Dense	30 - 50
Very Stiff	15 - 30	100 - 200	Very Dense	> 50
Hard	> 30	> 200		
WTPL	Wetter Than Plastic Limit			
APL	About Plastic Limit			
DTPL	Drier Than Plastic Limit			

## TYPE OF SAMPLE

SS	Split Spoon	TW	Thinwall Open
WS	Washed Sample	TP	Thinwall Piston
SB	Scraper Bucket Sample	OS	Oesterberg Sample
AS	Auger Sample	FS	Foil Sample
CS	Chunk Sample	RC	Rock Core
ST	Slotted Tube Sample		
	PH	Sample Advanced Hydraulically	
	PM	Sample Advanced Manually	

## SOIL TESTS

Qu	Unconfined Compression	LV	Laboratory Vane
Q	Undrained Triaxial	FV	Field Vane
Qcu	Consolidated Undrained Triaxial	C	Consolidation
Qd	Drained Triaxial		

## LOG OF BOREHOLE NO. 1

**PROJECT** FIFE ROAD SUBDIVISION  
**LOCATION** Fife Road, Grand Valley, Ontario  
**BORING METHOD** Continuous Flight Solid Stem Augers

**BORING DATE** 2009 04 16

**OUR PROJECT NO.** 09KF021  
**ENGINEER** M. Molodecki  
**TECHNICIAN** K. Hanes

SOIL PROFILE				SAMPLES			SHEAR STRENGTH $C_u$ ▲				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS
DEPTH In METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3m N - VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION ×				WATER CONTENT $W$			
							STANDARD PENETRATION TEST ●				WATER CONTENT %			
							BLOWS/0.3M				10 20 30			
	GROUND ELEVATION 479.35													
0.60	TOPSOIL: Dark brown clayey silt, trace gravel, occasional cobbles, rootlets, APL/WTPL		479	1	AS									
1.50	CLAYEY SILT TILL: Firm to stiff brown clayey silt, trace to some gravel, occasional cobbles, WTPL		478	2	SS	7								
2.30	numerous saturated gravelly sand seams becoming hard, DTPL		477	3	SS	16								Sampler wet from 1.5 m.
3.05			476	4	SS	66								
4.55	GRAVELLY SAND: Very dense brown gravelly sand, saturated		475	5	SS	50	for 100 mm							
5.05	CLAYEY SILT TILL: Hard grey clayey silt, trace gravel, DTPL			6	SS	50	for 50 mm							
	BOREHOLE TERMINATED AT 5.05 m													Upon completion of drilling, borehole wet caved at 1.05 m.

NOTES

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## LOG OF BOREHOLE NO. 2

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

OUR PROJECT NO. 09KF021  
 ENGINEER M Molodecki  
 TECHNICIAN K Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_u$ ▲				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS	
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3m N - VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION × STANDARD PENETRATION TEST ●				WATER CONTENT $W$			
GROUND ELEVATION 476.11							BLOWS/0.3M				WATER CONTENT %			
							20	40	60	80	10	20	30	
0.85	TOPSOIL: Firm dark brown clayey silt, trace gravel, occasional cobbles, rootlets, APL			1	SS	7	●					○		
1.50	CLAYEY SILT TILL: Stiff clayey silt, trace gravel, occasional cobbles and boulders, APL becoming very stiff		475	2	SS	9	●	▲				○		
2.30	becoming hard, DTPL		474	3	SS	22	●		▲			○		
3.0			473	4	SS	50 fo	75 mm			▲		○		
4.5			472	5	SS	50 fo	100 mm			▲		○		
5.05	BOREHOLE TERMINATED AT 5.05 m			6	SS	50 fo	75 mm			▲		○		

Upon completion of drilling, borehole open with no free water.

NOTES

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**LOG OF BOREHOLE NO. 3**

PROJECT FIFE ROAD SUBDIVISION  
LOCATION Fife Road, Grand Valley, Ontario  
BORING METHOD Continuous Flight Solid Stem Augers

OUR PROJECT NO. 09KF021  
ENGINEER M. Molodecki  
TECHNICIAN K. Hanes

SOIL PROFILE				SAMPLES			SHEAR STRENGTH $C_u$				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS
DEPTH In METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3m N-VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION $\times$ STANDARD PENETRATION TEST $\bullet$				WATER CONTENT $W$			
							BLOWS/0.3M				WATER CONTENT %			
							20	40	60	80	10	20	30	
GROUND ELEVATION 471.02														
0.60	TOPSOIL: Firm to stiff dark brown clayey silt, trace gravel, occasional cobbles, rootlets, APL		470	1	SS	8	●						○	1.1 m Stick up with J Plug and Steel Casing Concrete  50 mm PVC Standpipe  Bentonite Seal  Filter Sand
1.50	CLAYEY SILT TILL: Very stiff to hard brown clayey silt, trace gravel, occasional cobbles and boulders, APL/DTPL		469	2	SS	22	●		▲				○	
2.30	occasional wet medium sand seams no sand seams		468	3	SS	30	●			▲			○	
3.0			468	4	SS	28	●			▲			○	
4.05	becoming stiff, grey, APL		467	5	SS	32	●			▲			○	
5.05	BOREHOLE TERMINATED AT 5.05 m		466	6	SS	13	●	▲					○	

Water Level Reading:  
04/17/2009: No water

NOTES

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## LOG OF BOREHOLE NO. 4

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

BORING DATE 2009 04 17

OUR PROJECT NO. 09KF021  
 ENGINEER M. Molodecki  
 TECHNICIAN K. Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_v$				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS	
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3M N - VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION $\times$ STANDARD PENETRATION TEST $\bullet$				WATER CONTENT $W$			
							BLOWS/0.3M				WATER CONTENT %			
							20	40	60	80	10	20	30	
	GROUND ELEVATION 477.00												1.0 m Stick up with J Plug and Steel Casing Concrete	
0.60	TOPSOIL: Stiff dark brown clayey silt, trace sand, trace gravel, occasional cobbles, rootlets, APL		476	1	SS	10								
1.50	CLAYEY SILT TILL: Very stiff brown clayey silt, trace gravel, numerous cobbles, occasional boulders, APL becoming hard with occasional saturated medium sand seams		475	2	SS	16							Groundwater seepage at 1.5 m.	
3.05	becoming DTPL, no sand seams		474	3	SS	40								
			473										50 mm PVC standpipe	
4.5			472	4	SS	44							Bentonite Seal	
6.0			471											
6.30	GRAVELLY SAND: Brown gravelly sand, numerous cobbles, occasional boulders, saturated		470	5	SS	50 for 100 mm							Groundwater seepage at 6.3 m.	
7.00	CLAYEY SILT TILL: Brownish grey clayey silt, trace gravel, occasional cobbles and boulders, APL		469	6	SS	50 for 100 mm								
7.5			468											
9.0			467										Groundwater below 9.5 m.	
9.50	SAND: Grey sand, some gravel, saturated		466	7	AS								Filter Sand	
10.5			465											
12.0			464										Slotted Screen	
13.5			463											
14.00	BOREHOLE TERMINATED AT 14.00 m												Water Level Reading: 04/17/2009: 4.8 m	

NOTES

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## LOG OF BOREHOLE NO. 5

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

BORING DATE 2009 04 17

OUR PROJECT NO. 09KF021  
 ENGINEER M. Molodecki  
 TECHNICIAN K. Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_u$		LIQUID LIMIT $W_L$		GROUND WATER OBSERVATIONS AND REMARKS	
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3M N - VALUES	50 100 150 200		PLASTIC LIMIT $W_p$		
							DYNAMIC CONE PENETRATION $\times$ STANDARD PENETRATION TEST $\bullet$		WATER CONTENT $W$		
							BLOWS/0.3M		WATER CONTENT %		
	GROUND ELEVATION 471.33										
0.60	TOPSOIL: Firm dark brown clayey silt, occasional cobbles, rootlets, APL		471	1	SS	7					
	CLAYEY SILT TILL: Firm to stiff clayey silt, trace gravel, occasional cobbles and boulders, APL		470	2	SS	10					
1.5			469	3	SS	6					
3.05	becoming hard, DTPL		468	4	SS	77					
4.55	SILT TILL: Very dense brown silt, trace fine sand, trace gravel, occasional cobbles and boulders, damp		467	5	SS	50 for 150 mm					
6.10	some fine sand, some gravel		466	6	SS	50 for 150 mm					
7.5			465	7	SS	52					
8.60	CLAYEY SILT: Hard clayey silt, trace gravel, DTPL		464	8	SS	62					
9.45	SAND: Very dense light brown fine sand, trace silt, damp		463	9	SS	50 for 150 mm					
10.10	becoming wet/saturated		462								
11.15	BOREHOLE TERMINATED AT 11.15 m		461							Upon completion of drilling, borehole open with groundwater seepage below 10.1 m	

NOTES

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## LOG OF BOREHOLE NO. 6

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

BORING DATE 2009 04 16

OUR PROJECT NO. 09KF021  
 ENGINEER M Molodecki  
 TECHNICIAN K. Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_u$ ▲				LIQUID LIMIT $W_L$ _____ PLASTIC LIMIT $W_p$ _____ WATER CONTENT $W$ _____ $W_p$ $W$ $W_L$ _____ WATER CONTENT %			GROUND WATER OBSERVATIONS AND REMARKS					
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3M N - VALUES	50	100	150	200	20	40		60	80	10	20	30
	GROUND ELEVATION 467.13																	
0.20	TOPSOIL: Soft dark brown clayey silt, trace gravel, high organics, APL			1	SS	3												
	CLAYEY SILT TILL: Stiff clayey silt, trace gravel, numerous cobbles, occasional boulders, APL/WTPL		466	2	SS	12												
1.50	becoming APL with occasional dry brown sand seams		465	3	SS	8												
				4	SS	17												
2.75				5	SS	44												
3.05	becoming very stiff with occasional wet gravelly sand seams		464															
	becoming hard, DTPL																	
4.00			463															
4.5	SILT: Very dense brown silt, trace fine sand, moist to wet			6	SS	50 for 150 mm												
6.0																		
6.15			461	7	SS	50 for 125 mm												
6.55	SAND: Very dense light brown fine sand, moist																	
	BOREHOLE TERMINATED AT 6.55 m																	

Upon completion of drilling, borehole open with no free water.

NOTES

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## LOG OF BOREHOLE NO. 7

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

BORING DATE 2009 04 16

OUR PROJECT NO. 09KF021  
 ENGINEER M. Molodecki  
 TECHNICIAN K. Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_v$ ▲				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS	
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3M N-VALUES	DYNAMIC CONE PENETRATION × STANDARD PENETRATION TEST ●				PLASTIC LIMIT $W_p$			
							BLOWS/0.3M				WATER CONTENT %			
							20	40	60	80	10	20		30
	GROUND ELEVATION 467.22													
0.60	TOPSOIL: Firm dark brown clayey silt, trace gravel, occasional cobbles and boulders, APL		467	1	SS	6								
	CLAYEY SILT TILL: Very stiff clayey silt, trace gravel, occasional cobbles, APL		466	2	SS	50 for	100 mm *							
1.5				3	SS	23								
				465										
3.05	becoming hard, DTPL		464	4	SS	63								
			463											
5.05	BOREHOLE TERMINATED AT 5.05 m			5	SS	50 for	150 mm							

Upon completion of drilling, borehole open with no free water.

NOTES \* Sampler bouncing on cobble or boulder.

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**LOG OF BOREHOLE NO. 8**

PROJECT FIFE ROAD SUBDIVISION  
 LOCATION Fife Road, Grand Valley, Ontario  
 BORING METHOD Continuous Flight Solid Stem Augers

OUR PROJECT NO. 09KF021  
 BORING DATE 2009 04 16  
 ENGINEER M. Molodecki  
 TECHNICIAN K. Hanes

SOIL PROFILE				SAMPLES			SHEAR STRENGTH $C_u$ ▲				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3m N-VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION ×				WATER CONTENT $W$			
							STANDARD PENETRATION TEST ●				WATER CONTENT %			
							BLOWS/0.3M				10 20 30			
	GROUND ELEVATION 460.47													
	GRAVELLY SAND: Loose dark brown gravelly sand, occasional cobbles and boulders, rootlets, damp		460	1	SS	8	●							
1.50			459	2	SS	7	●							
	SAND: Brown medium sand, some gravel, numerous cobbles, occasional boulders, damp			3	SS	50 for	●	100	mm *					
2.30														
	BOREHOLE TERMINATED AT 2.30 m DUE TO AUGER REFUSAL ON MULTIPLE BOULDERS													
	Upon completion of drilling, borehole caved to 1.50 m with no free water													

NOTES \* Sampler bouncing on cobble or boulder.

CHECKED BY:

## LOG OF BOREHOLE NO. 9

PROJECT FIFE ROAD SUBDIVISION

LOCATION Fife Road, Grand Valley, Ontario

BORING METHOD Continuous Flight Hollow Stem Augers

BORING DATE 2009 04 16

OUR PROJECT NO. 09KF021

ENGINEER M. Molodecki

TECHNICIAN K. Hanes

SOIL PROFILE			SAMPLES			SHEAR STRENGTH $C_u$ ▲				LIQUID LIMIT $W_L$			GROUND WATER OBSERVATIONS AND REMARKS	
DEPTH in METRES	DESCRIPTION	LEGEND	ELEVATION	NUMBER	TYPE	BLOWS/0.3m N-VALUES	50 100 150 200				PLASTIC LIMIT $W_p$			
							DYNAMIC CONE PENETRATION ×				WATER CONTENT $W$			
							STANDARD PENETRATION TEST ●				WATER CONTENT %			
							BLOWS/0.3M				10 20 30			
	GROUND ELEVATION 455.33													
0.10	SILT TOPSOIL: Dark brown silt, trace gravel, occasional cobbles and boulders, moist		455	1	SS	50*							<p>1.0 m Stick up with J Plug and Steel Casing Concrete</p> <p>Bentonite Seal</p> <p>50 mm PVC Standpipe</p> <p>Filler Sand</p> <p>Slotted Screen</p>	
1.50	SAND: Dark brown medium sand, some gravel, some silt, numerous cobbles, occasional boulders, damp		454	2	SS	50*								
2.75	SAND AND GRAVEL: Brown sand and gravel, trace silt, numerous cobbles and boulders, saturated		453	3	SS	50*								
3.0	CLAYEY SILT TILL: Hard brown clayey silt, trace gravel, occasional cobbles and boulders, APL		452	4	SS	37								
4.00	becoming grey, DTPL		451											
5.05	BOREHOLE TERMINATED AT 5.05 m			5	SS	50 for 125 mm								

Water Level Reading:  
04/16/2009: 1.1 m

NOTES

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## Legends

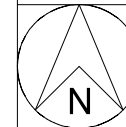
 Borehole (JLP, 2022)

 Property Line

**NOTE:** Monitoring Well's Layout and Ground Elevation provided by GM Blueplan Engineering Ltd.

**Notes:**

1. The soil types and boundaries are applicable only at the location of the boreholes. Between boreholes, they are assumed and may change substantially. The topsoil thicknesses quoted in the report are used for discussion purposes only and should not be used for estimating purposes.
2. The Ground Surface elevations at the borehole locations were derived from the Temporary Benchmark (TBM) as shown.
3. The soil samples will be retained for three months from the date of issue of the final report and then discarded, unless the client has requested to extend the storage period with fees.



Borehole Location Plan  
Rivers Edge Subdivision  
Part of Lot 31, Concession 3  
Scott Street  
Town of Grand Valley, Ontario

Source: Google Map

Date: April 20, 2022

Ref. No. G4524-22-1

Scale: N.T.S.

Prepared By: GB

Checked By: JB

REFERENCE No: G4524-22-1

### MONITORING WELL No: 1

CLIENT: Thomasfield Homes Ltd.

PROJECT: Rivers Edge Subdivision

ENCLOSURE No: 2

LOCATION: Scott Street, Grand Valley, ON

SUPERVISOR: AK

**JLP Services Inc.**  
**GEOTECHNICAL & ENVIRONMENTAL**  
**CONSULTANTS**

405 YORK ROAD, GUELPH, ONTARIO N1E 3H3  
 PH. (519) 763-3101

SUBSURFACE PROFILE					SAMPLE			PENETRATION RESISTANCE				WATER CONTENT %					UNIT WEIGHT
DEPTH (m)	DESCRIPTION	ELEVATION	SYMBOL	MONITORING WELL	NUMBER	TYPE	N-VALUE	20	40	60	80	5	10	15	20	25	
0.0	Ground Surface	458.7															
	<p><b>TOPSOIL:</b>                      about 100mm thick, silty sand, organics, grass on surface; dark brown, moist, no odour, no staining</p> <p><b>FILL:</b>                      sandy silt to silty sand, some gravel, trace to some clay, scattered organic inclusions; dark brown to brown, moist to wet, no odour, no staining</p>				1	SS	71										
					2	SS	8										
					3	SS	12										
					4	SS	14										
4.5		454.2			5	SS	13										
	<p><b>SAND AND GRAVEL:</b>                      coarse grained, scattered rock fragments; grey, wet, compact to dense, no odour, no staining</p>				6	SS	21										
6.5		452.2			7	SS	49										
	End of Borehole																

DRILLED BY: London Soil Test Ltd.

HOLE DIAMETER: 200mm

DRILL METHOD: Hollow Stem Auger

DATUM: Geodetic

DRILL DATE: March 7, 2022

SHEET: 1 of 1



REFERENCE No: G4524-22-1

**MONITORING WELL No: 2**

CLIENT: Thomasfield Homes Ltd.

**JLP Services Inc.**  
**GEOTECHNICAL & ENVIRONMENTAL**  
**CONSULTANTS**

PROJECT: Rivers Edge Subdivision

ENCLOSURE No: 3

405 YORK ROAD, GUELPH, ONTARIO N1E 3H3  
 PH. (519) 763-3101

LOCATION: Scott Street, Grand Valley, ON

SUPERVISOR: AK

SUBSURFACE PROFILE					SAMPLE			PENETRATION RESISTANCE	WATER CONTENT %	UNIT WEIGHT							
DEPTH (m)	DESCRIPTION	ELEVATION	SYMBOL	MONITORING WELL	NUMBER	TYPE	N-VALUE				20	40	60	80	5	10	15
0.0	Ground Surface	454.9															
0.9	<p><b>TOPSOIL:</b>                      silty sand, some gravel, mixed with organics, scattered roots; black to dark brown, moist, no odour, no staining</p> <p><b>SAND AND GRAVEL:</b>                      coarse grained, scattered rock fragments; grey, wet, dense to very dense, no odour, no staining</p>	454.0			1	SS	57										
					2	SS	77										
					3	SS	44										
					4	SS	50				50/125m						
					5	SS	62										
6.5	End of Borehole	448.3			6	SS	87				87/200mm						

DRILLED BY: London Soil Test Ltd.

HOLE DIAMETER: 200mm

DRILL METHOD: Hollow Stem Auger

DATUM: Geodetic

DRILL DATE: March 7, 2022

SHEET: 1 of 1

REFERENCE No: G4524-22-1

**MONITORING WELL No: 3**

CLIENT: Thomasfield Homes Ltd.

PROJECT: Rivers Edge Subdivision

ENCLOSURE No: 4

LOCATION: Scott Street, Grand Valley, ON

SUPERVISOR: AK

**JLP Services Inc.**  
**GEOTECHNICAL & ENVIRONMENTAL**  
**CONSULTANTS**

405 YORK ROAD, GUELPH, ONTARIO N1E 3H3  
 PH. (519) 763-3101

SUBSURFACE PROFILE					SAMPLE			PENETRATION RESISTANCE				WATER CONTENT %					UNIT WEIGHT	
DEPTH (m)	DESCRIPTION	ELEVATION	SYMBOL	MONITORING WELL	NUMBER	TYPE	N-VALUE	20	40	60	80	5	10	15	20	25		
0.0	Ground Surface	457.5																
	TOPSOIL: about 50mm thick, silty sand, organics, grass on surface; dark brown, moist, no odour, no staining  FILL: silty sand, trace to some gravel; brown, moist, no odour, no staining				1	SS	16											
2.4		455.1			2	SS	7											
2.8	TOPSOIL: sandy silt, trace gravel, mixed with organics; dark brown, moist, no odour, no staining  FILL: silty sand, some gravel; brown, moist, compact, no odour, no staining	454.7			3	SS	4											
4.5		453.0			4	SS	12											
6.0	SAND AND GRAVEL: coarse grained; brown, moist, loose, no odour, no staining	451.5			5	SS	5											
6.5	SAND: some gravel; brown, wet, dense, no odour, no staining	451.0			6	SS	37											
	End of Borehole																	

DRILLED BY: London Soil Test Ltd.

HOLE DIAMETER: 200mm

DRILL METHOD: Hollow Stem Auger

DATUM: Geodetic

DRILL DATE: March 7, 2022

SHEET: 1 of 1



REFERENCE No: G4524-22-1

**MONITORING WELL No: 4**

CLIENT: Thomasfield Homes Ltd.

PROJECT: Rivers Edge Subdivision

ENCLOSURE No: 4

LOCATION: Scott Street, Grand Valley, ON

SUPERVISOR: AK

**JLP Services Inc.**  
**GEOTECHNICAL AND ENVIRONMENTAL**  
**CONSULTANTS**

405 YORK ROAD, GUELPH, ONTARIO N1E 3H3  
 PH. (519) 763-3101

SUBSURFACE PROFILE					SAMPLE			PENETRATION RESISTANCE	WATER CONTENT %	UNIT WEIGHT				
DEPTH (m)	DESCRIPTION	ELEVATION	SYMBOL	MONITORING WELL	NUMBER	TYPE	N-VALUE				5	10	15	20
0.0	Ground Surface	457.5												
0.3	FILL: silty sand; greyish brown, moist, no odour, no staining	457.2			1	SS	6	○						
1.6	TOPSOIL: sandy silt, some gravel, mixed with organics, scattered roots and plant fibres; dark brown, moist, no odour, no staining	455.9			2	SS	6	○						
2.8	FILL: silty sand, some gravel, occasional metal pieces; brown moist, no odour, no staining	454.7			3	SS	23	○						
3.1	LIMESTONE: highly weathered, frequently jointed; white, no odour, no staining	454.4			4	SS	50	○	50/75mm					
	Refusal on Probable Bedrock				5	SS	50	○	50/25mm					

DRILLED BY: London Soil Test Ltd.

HOLE DIAMETER: 200mm

DRILL METHOD: Hollow Stem Auger

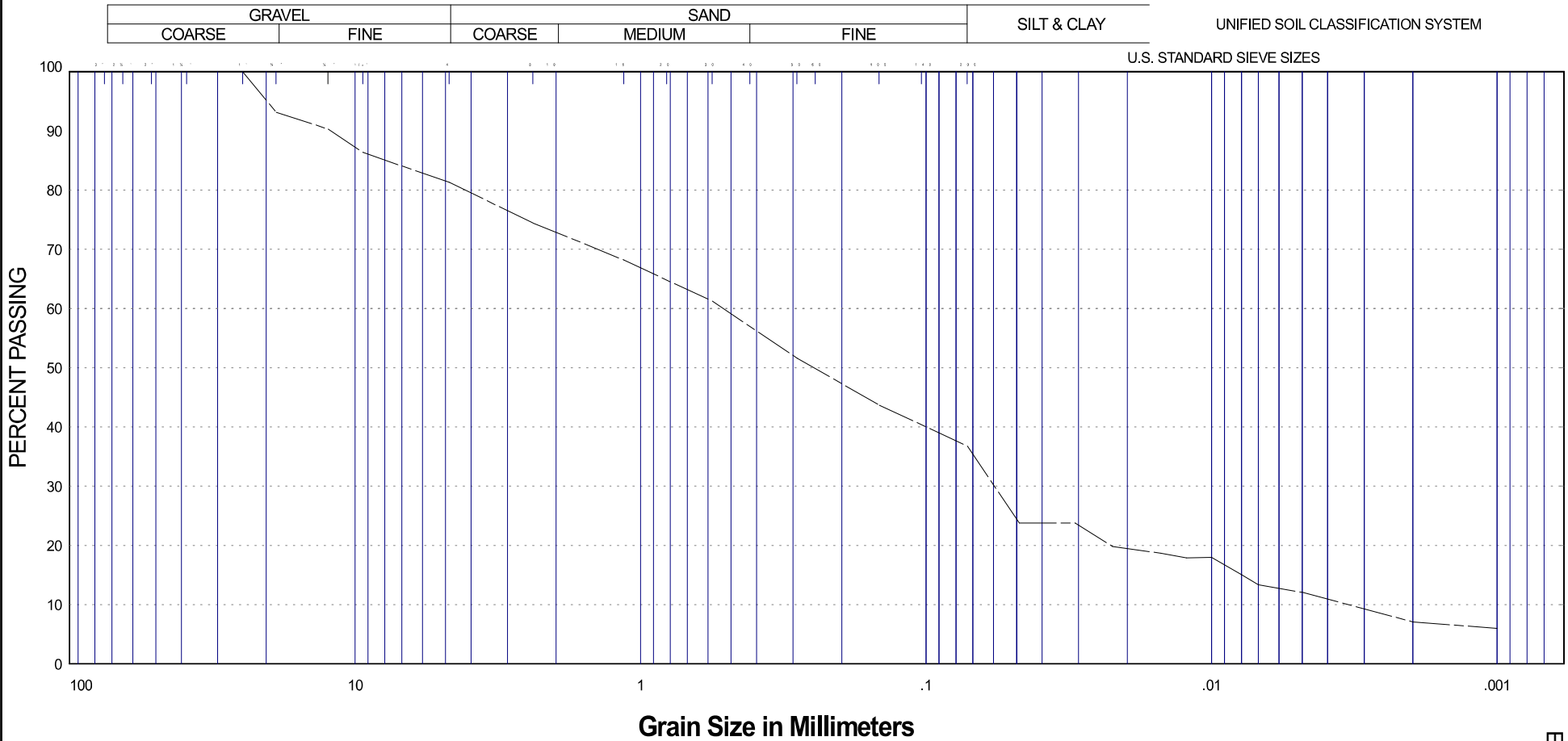
DATUM: Geodetic

DRILL DATE: March 29, 2022

SHEET: 1 of 1

# GRAIN SIZE DISTRIBUTION

OUR REFERENCE N° G4524-22-1



PROJECT: Rivers Edge Subdivision  
 LOCATION: Scott Street, Grand Valley, ON  
 BOREHOLE N°: 1  
 SAMPLE N°: 4  
 DEPTH: 3.0 - 3.5 m±  
 ELEVATION: 455.7 - 455.2 m±

COEFFICIENT OF UNIFORMITY:   
 COEFFICIENT OF CURVATURE:   
 (Values are blank in the image)

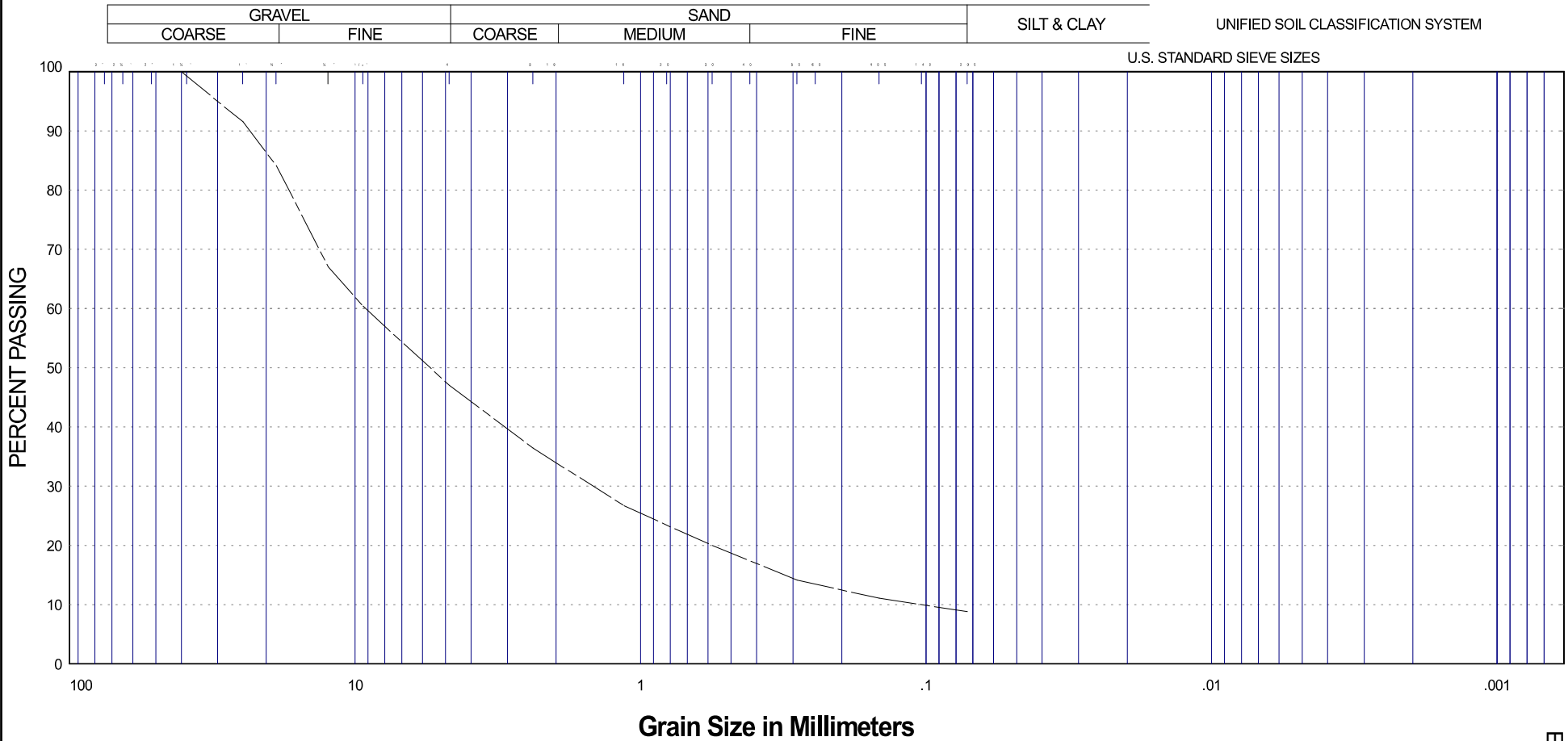
**Classification of Sample and Group Symbol:**  
 SILTY SAND, some gravel, trace clay (CL)

**PLASTIC PROPERTIES**  
 LIQUID LIMIT           % = 25.1  
 PLASTIC LIMIT         % = 11.1  
 PLASTICITY INDEX     % = 14.0  
 MOISTURE CONTENT    % = 16.1

ENCLOSURE N° 6

# GRAIN SIZE DISTRIBUTION

OUR REFERENCE N° G4524-22-1



PROJECT: Rivers Edge Subdivision  
 LOCATION: Scott Street, Grand Valley, ON  
 BOREHOLE N°: 2  
 SAMPLE N°: 2  
 DEPTH: 1.5 - 2.0 m±  
 ELEVATION: 453.4 - 452.9 m±

COEFFICIENT OF UNIFORMITY: \_\_\_\_\_  
 COEFFICIENT OF CURVATURE: \_\_\_\_\_

**Classification of Sample and Group Symbol:**  
 SAND AND GRAVEL, trace silt (GP)

**PLASTIC PROPERTIES**  
 LIQUID LIMIT           % = \_\_\_\_\_  
 PLASTIC LIMIT         % = \_\_\_\_\_  
 PLASTICITY INDEX     % = \_\_\_\_\_  
 MOISTURE CONTENT   % = 5.1

ENCLOSURE N° 7

**APPENDIX D:  
LABORATORY CERTIFICATES OF ANALYSIS**



## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>WT2221754</b></p> <p>Client : <b>GM BluePlan Engineering</b></p> <p>Contact : Joanna Olesiuk</p> <p>Address : 650 Woodlawn Rd West Block C, Unit 2 Guelph ON Canada N1H 8J1</p> <p>Telephone : 519 824 8150</p> <p>Project : ----</p> <p>PO : ----</p> <p>C-O-C number : 20-1002514</p> <p>Sampler : Joanna Olesiuk</p> <p>Site : ----</p> <p>Quote number : GM BluePlan 2022 SOA</p> <p>No. of samples received : 3</p> <p>No. of samples analysed : 3</p>	<p>Page : 1 of 5</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Karanpartap Singh</p> <p>Address : 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8</p> <p>Telephone : 19055076910</p> <p>Date Samples Received : 14-Nov-2022 16:40</p> <p>Date Analysis Commenced : 15-Nov-2022</p> <p>Issue Date : 22-Nov-2022 12:45</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances  
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no unit
µS/cm	microsiemens per centimetre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

## Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TMV	Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.





## Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					BH 4	BH 9	MW 2	----	----
Client sampling date / time					12-Nov-2022 16:10	12-Nov-2022 16:50	12-Nov-2022 15:10	----	----
Analyte	CAS Number	Method	LOR	Unit	WT2221754-001	WT2221754-002	WT2221754-003	-----	-----
					Result	Result	Result	----	----
<b>Physical Tests</b>									
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	298	241	428	----	----
colour, apparent	----	E330	2.0	CU	658 <sup>DLM</sup>	893 <sup>DLM</sup>	438 <sup>DLM</sup>	----	----
conductivity	----	E100	1.0	µS/cm	954	392	1620	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	451	220	737	----	----
pH	----	E108	0.10	pH units	7.92	8.19	8.42	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	564 <sup>DLDS</sup>	218 <sup>DLDS</sup>	898 <sup>DLDS</sup>	----	----
turbidity	----	E121	0.10	NTU	>4000 <sup>TMV</sup>	>4000 <sup>TMV</sup>	3190	----	----
<b>Anions and Nutrients</b>									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0344	0.0176	0.258	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	138	2.06	330 <sup>DLDS</sup>	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.092	0.078	0.394 <sup>DLDS</sup>	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.442	0.022	<0.100 <sup>DLDS</sup>	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	<0.050 <sup>DLDS</sup>	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-T	0.0030	mg/L	<0.0030	<0.0030	<0.0030	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	22.0	9.91	12.3 <sup>DLDS</sup>	----	----
<b>Dissolved Metals</b>									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0348	0.0287	0.0088	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0.00023	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00131	0.00032	0.00080	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0680	0.0191	0.0431	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	<0.010	0.152	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	0.0000122	<0.0000125 <sup>DLM</sup>	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	97.3	61.0	56.2	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00020	<0.00010	0.00099	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00124	0.00235	0.00183	----	----



## Analytical Results

Sub-Matrix: Water					Client sample ID	BH 4	BH 9	MW 2	----	----
(Matrix: Water)					Client sampling date / time	12-Nov-2022 16:10	12-Nov-2022 16:50	12-Nov-2022 15:10	----	----
Analyte	CAS Number	Method	LOR	Unit	WT2221754-001	WT2221754-002	WT2221754-003	-----	-----	
					Result	Result	Result	----	----	
<b>Dissolved Metals</b>										
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.029	0.026	<0.010	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000093	0.000170	0.000056	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0083	<0.0010	0.0029	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	50.6	16.4	145 <sup>DLHC</sup>	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0185	0.00424	0.132	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000752	0.00164	0.0299	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00069	<0.00050	0.00244	----	----	
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	<0.050	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.90	0.737	7.53	----	----	
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00059	0.00037	0.00050	----	----	
selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000130	0.000084	0.000082	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	7.88	3.56	4.21	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	24.5	2.34	93.8	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.226	0.0736	0.452	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	7.44	3.30	5.87	----	----	
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0.000024	----	----	
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0.00235	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00180	0.00099	<0.00030	----	----	
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	0.00062	0.00048	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00157	0.000477	0.000300	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0053	0.0020	----	----	
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.





## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>WT2221754</b></p> <p><b>Client</b> : <b>GM BluePlan Engineering</b></p> <p><b>Contact</b> : Joanna Olesiuk</p> <p><b>Address</b> : 650 Woodlawn Rd West Block C, Unit 2 Guelph ON Canada N1H 8J1</p> <p><b>Telephone</b> : 519 824 8150</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1002514</p> <p><b>Sampler</b> : Joanna Olesiuk</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : GM BluePlan 2022 SOA</p> <p><b>No. of samples received</b> : 3</p> <p><b>No. of samples analysed</b> : 3</p>	<p><b>Page</b> : 1 of 8</p> <p><b>Laboratory</b> : Waterloo - Environmental</p> <p><b>Account Manager</b> : Karanpartap Singh</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : 19055076910</p> <p><b>Date Samples Received</b> : 14-Nov-2022 16:40</p> <p><b>Date Analysis Commenced</b> : 15-Nov-2022</p> <p><b>Issue Date</b> : 22-Nov-2022 12:45</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<u>Signatories</u>	<u>Position</u>	<u>Laboratory Department</u>
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
BH 4	Water	phosphorus, dissolved		ONPWQO	H>100	<0.050	0.01 mg/L
	Water	aluminum, dissolved		ONPWQO	PWQO	0.0348 mg/L	0.015 mg/L
	Water	copper, dissolved		ONPWQO	PWQO	0.00124 mg/L	0.001 mg/L
	Water	phosphorus, dissolved		ONPWQO	PWQO	<0.050	0.01 mg/L
BH 9	Water	phosphorus, dissolved		ONPWQO	H>100	<0.050	0.01 mg/L
	Water	aluminum, dissolved		ONPWQO	PWQO	0.0287 mg/L	0.015 mg/L
	Water	copper, dissolved		ONPWQO	PWQO	0.00235 mg/L	0.001 mg/L
	Water	phosphorus, dissolved		ONPWQO	PWQO	<0.050	0.01 mg/L
MW 2	Water	cobalt, dissolved		ONPWQO	H>100	0.00099 mg/L	0.0009 mg/L
	Water	phosphorus, dissolved		ONPWQO	H>100	<0.050	0.01 mg/L
	Water	cobalt, dissolved		ONPWQO	PWQO	0.00099 mg/L	0.0009 mg/L
	Water	copper, dissolved		ONPWQO	PWQO	0.00183 mg/L	0.001 mg/L
	Water	phosphorus, dissolved		ONPWQO	PWQO	<0.050	0.01 mg/L

### General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).



<i>Unit</i>	<i>Description</i>
-	no unit
µS/cm	microsiemens per centimetre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result is greater than the Guideline Upper Limit or the result is lower than the Guideline Lower Limit.

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

## Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLHC	<i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i>
DLM	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>
TMV	<i>Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.</i>





## Analytical Results Evaluation

Matrix: Water			Client sample ID	BH 4	BH 9	MW 2	----	----	----	----
			Sampling date/time	12-Nov-2022 16:10	12-Nov-2022 16:50	12-Nov-2022 15:10	----	----	----	----
			Sub-Matrix	Water	Water	Water	----	----	----	----
Analyte	CAS Number	Unit		WT2221754-001	WT2221754-002	WT2221754-003	-----	-----	-----	-----
<b>Physical Tests</b>										
alkalinity, total (as CaCO3)	----	mg/L		298	241	428	----	----	----	----
colour, apparent	----	CU		658 <sup>DLM</sup>	893 <sup>DLM</sup>	438 <sup>DLM</sup>	----	----	----	----
conductivity	----	µS/cm		954	392	1620	----	----	----	----
hardness (as CaCO3), dissolved	----	mg/L		451	220	737	----	----	----	----
pH	----	pH units		7.92	8.19	8.42	----	----	----	----
solids, total dissolved [TDS]	----	mg/L		564 <sup>DLDS</sup>	218 <sup>DLDS</sup>	898 <sup>DLDS</sup>	----	----	----	----
turbidity	----	NTU		>4000 <sup>TMV</sup>	>4000 <sup>TMV</sup>	3190	----	----	----	----
<b>Anions and Nutrients</b>										
ammonia, total (as N)	7664-41-7	mg/L		0.0344	0.0176	0.258	----	----	----	----
chloride	16887-00-6	mg/L		138	2.06	330 <sup>DLDS</sup>	----	----	----	----
fluoride	16984-48-8	mg/L		0.092	0.078	0.394 <sup>DLDS</sup>	----	----	----	----
nitrate (as N)	14797-55-8	mg/L		0.442	0.022	<0.100 <sup>DLDS</sup>	----	----	----	----
nitrite (as N)	14797-65-0	mg/L		<0.010	<0.010	<0.050 <sup>DLDS</sup>	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	mg/L		<0.0030	<0.0030	<0.0030	----	----	----	----
sulfate (as SO4)	14808-79-8	mg/L		22.0	9.91	12.3 <sup>DLDS</sup>	----	----	----	----
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	mg/L		0.0348	0.0287	0.0088	----	----	----	----
antimony, dissolved	7440-36-0	mg/L		<0.00010	<0.00010	0.00023	----	----	----	----
arsenic, dissolved	7440-38-2	mg/L		0.00131	0.00032	0.00080	----	----	----	----
barium, dissolved	7440-39-3	mg/L		0.0680	0.0191	0.0431	----	----	----	----
beryllium, dissolved	7440-41-7	mg/L		<0.000020	<0.000020	<0.000020	----	----	----	----
bismuth, dissolved	7440-69-9	mg/L		<0.000050	<0.000050	<0.000050	----	----	----	----
boron, dissolved	7440-42-8	mg/L		0.013	<0.010	0.152	----	----	----	----
cadmium, dissolved	7440-43-9	mg/L		<0.0000050	0.0000122	<0.0000125 <sup>DLM</sup>	----	----	----	----
calcium, dissolved	7440-70-2	mg/L		97.3	61.0	56.2	----	----	----	----
cesium, dissolved	7440-46-2	mg/L		<0.000010	<0.000010	<0.000010	----	----	----	----
chromium, dissolved	7440-47-3	mg/L		<0.00050	<0.00050	<0.00050	----	----	----	----



## Analytical Results Evaluation

Matrix: Water			Client sample ID	BH 4	BH 9	MW 2	----	----	----	----
			Sampling date/time	12-Nov-2022 16:10	12-Nov-2022 16:50	12-Nov-2022 15:10	----	----	----	----
			Sub-Matrix	Water	Water	Water	----	----	----	----
Analyte	CAS Number	Unit		WT2221754-001	WT2221754-002	WT2221754-003	-----	-----	-----	-----
<b>Dissolved Metals</b>										
cobalt, dissolved	7440-48-4	mg/L		0.00020	<0.00010	0.00099	----	----	----	----
copper, dissolved	7440-50-8	mg/L		0.00124	0.00235	0.00183	----	----	----	----
iron, dissolved	7439-89-6	mg/L		0.029	0.026	<0.010	----	----	----	----
lead, dissolved	7439-92-1	mg/L		0.000093	0.000170	0.000056	----	----	----	----
lithium, dissolved	7439-93-2	mg/L		0.0083	<0.0010	0.0029	----	----	----	----
magnesium, dissolved	7439-95-4	mg/L		50.6	16.4	145 <sup>DLHC</sup>	----	----	----	----
manganese, dissolved	7439-96-5	mg/L		0.0185	0.00424	0.132	----	----	----	----
molybdenum, dissolved	7439-98-7	mg/L		0.000752	0.00164	0.0299	----	----	----	----
nickel, dissolved	7440-02-0	mg/L		0.00069	<0.00050	0.00244	----	----	----	----
phosphorus, dissolved	7723-14-0	mg/L		<0.050	<0.050	<0.050	----	----	----	----
potassium, dissolved	7440-09-7	mg/L		1.90	0.737	7.53	----	----	----	----
rubidium, dissolved	7440-17-7	mg/L		0.00059	0.00037	0.00050	----	----	----	----
selenium, dissolved	7782-49-2	mg/L		0.000130	0.000084	0.000082	----	----	----	----
silicon, dissolved	7440-21-3	mg/L		7.88	3.56	4.21	----	----	----	----
silver, dissolved	7440-22-4	mg/L		<0.000010	<0.000010	<0.000010	----	----	----	----
sodium, dissolved	7440-23-5	mg/L		24.5	2.34	93.8	----	----	----	----
strontium, dissolved	7440-24-6	mg/L		0.226	0.0736	0.452	----	----	----	----
sulfur, dissolved	7704-34-9	mg/L		7.44	3.30	5.87	----	----	----	----
tellurium, dissolved	13494-80-9	mg/L		<0.00020	<0.00020	<0.00020	----	----	----	----
thallium, dissolved	7440-28-0	mg/L		<0.000010	<0.000010	0.000024	----	----	----	----
thorium, dissolved	7440-29-1	mg/L		<0.00010	<0.00010	<0.00010	----	----	----	----
tin, dissolved	7440-31-5	mg/L		<0.00010	<0.00010	0.00235	----	----	----	----
titanium, dissolved	7440-32-6	mg/L		0.00180	0.00099	<0.00030	----	----	----	----
tungsten, dissolved	7440-33-7	mg/L		<0.00010	0.00062	0.00048	----	----	----	----
uranium, dissolved	7440-61-1	mg/L		0.00157	0.000477	0.000300	----	----	----	----
vanadium, dissolved	7440-62-2	mg/L		<0.00050	<0.00050	<0.00050	----	----	----	----
zinc, dissolved	7440-66-6	mg/L		<0.0010	0.0053	0.0020	----	----	----	----
zirconium, dissolved	7440-67-7	mg/L		<0.00020	<0.00020	<0.00020	----	----	----	----
dissolved metals filtration location	----	-		Field	Field	Field	----	----	----	----



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Please refer to the General Comments section for an explanation of any qualifiers detected.



### Summary of Guideline Limits

Analyte	CAS Number	Unit	ONPWQO H>100	ONPWQO PWQO					
<b>Physical Tests</b>									
alkalinity, total (as CaCO3)	----	mg/L							
colour, apparent	----	CU							
conductivity	----	µS/cm							
hardness (as CaCO3), dissolved	----	mg/L							
pH	----	pH units	6.5 - 8.5 pH units	6.5 - 8.5 pH units					
solids, total dissolved [TDS]	----	mg/L							
turbidity	----	NTU							
<b>Anions and Nutrients</b>									
ammonia, total (as N)	7664-41-7	mg/L							
chloride	16887-00-6	mg/L							
fluoride	16984-48-8	mg/L							
nitrate (as N)	14797-55-8	mg/L							
nitrite (as N)	14797-65-0	mg/L							
phosphate, ortho-, dissolved (as P)	14265-44-2	mg/L							
sulfate (as SO4)	14808-79-8	mg/L							
<b>Dissolved Metals</b>									
aluminum, dissolved	7429-90-5	mg/L	0.075 mg/L	0.015 mg/L					
antimony, dissolved	7440-36-0	mg/L	0.02 mg/L	0.02 mg/L					
arsenic, dissolved	7440-38-2	mg/L	0.005 mg/L	0.005 mg/L					
barium, dissolved	7440-39-3	mg/L							
beryllium, dissolved	7440-41-7	mg/L	1.1 mg/L	0.011 mg/L					
bismuth, dissolved	7440-69-9	mg/L							
boron, dissolved	7440-42-8	mg/L	0.2 mg/L	0.2 mg/L					
cadmium, dissolved	7440-43-9	mg/L	0.0005 mg/L	0.0001 mg/L					
calcium, dissolved	7440-70-2	mg/L							
cesium, dissolved	7440-46-2	mg/L							
chromium, dissolved	7440-47-3	mg/L							
cobalt, dissolved	7440-48-4	mg/L	0.0009 mg/L	0.0009 mg/L					
copper, dissolved	7440-50-8	mg/L	0.005 mg/L	0.001 mg/L					
dissolved metals filtration location	----	-							
iron, dissolved	7439-89-6	mg/L	0.3 mg/L	0.3 mg/L					
lead, dissolved	7439-92-1	mg/L	0.005 mg/L	0.001 mg/L					
lithium, dissolved	7439-93-2	mg/L							
magnesium, dissolved	7439-95-4	mg/L							
manganese, dissolved	7439-96-5	mg/L							
molybdenum, dissolved	7439-98-7	mg/L	0.04 mg/L	0.04 mg/L					



Analyte	CAS Number	Unit	ONPWQO H>100	ONPWQO PWQO					
<b>Dissolved Metals - Continued</b>									
nickel, dissolved	7440-02-0	mg/L	0.025 mg/L	0.025 mg/L					
phosphorus, dissolved	7723-14-0	mg/L	0.01 mg/L	0.01 mg/L					
potassium, dissolved	7440-09-7	mg/L							
rubidium, dissolved	7440-17-7	mg/L							
selenium, dissolved	7782-49-2	mg/L	0.1 mg/L	0.1 mg/L					
silicon, dissolved	7440-21-3	mg/L							
silver, dissolved	7440-22-4	mg/L	0.0001 mg/L	0.0001 mg/L					
sodium, dissolved	7440-23-5	mg/L							
strontium, dissolved	7440-24-6	mg/L							
sulfur, dissolved	7704-34-9	mg/L							
tellurium, dissolved	13494-80-9	mg/L							
thallium, dissolved	7440-28-0	mg/L	0.0003 mg/L	0.0003 mg/L					
thorium, dissolved	7440-29-1	mg/L							
tin, dissolved	7440-31-5	mg/L							
titanium, dissolved	7440-32-6	mg/L							
tungsten, dissolved	7440-33-7	mg/L	0.03 mg/L	0.03 mg/L					
uranium, dissolved	7440-61-1	mg/L	0.005 mg/L	0.005 mg/L					
vanadium, dissolved	7440-62-2	mg/L	0.006 mg/L	0.006 mg/L					
zinc, dissolved	7440-66-6	mg/L	0.02 mg/L	0.02 mg/L					
zirconium, dissolved	7440-67-7	mg/L	0.004 mg/L	0.004 mg/L					

Please refer to the General Comments section for an explanation of any qualifiers detected.

**Key:**

- ONPWQO Ontario PWQO (Provincial Water Quality Objectives, JULY, 1994)
- H>100 Surface Water - PWQO - Hardness>100PPM
- PWQO Surface Water PWQO




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## QUALITY CONTROL INTERPRETIVE REPORT

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<p><b>Work Order</b> : <b>WT2221754</b></p> <p><b>Client</b> : <b>GM BluePlan Engineering</b></p> <p><b>Contact</b> : Joanna Olesiuk</p> <p><b>Address</b> : 650 Woodlawn Rd West Block C, Unit 2 Guelph ON Canada N1H 8J1</p> <p><b>Telephone</b> : 519 824 8150</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1002514</p> <p><b>Sampler</b> : Joanna Olesiuk</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : GM BluePlan 2022 SOA</p> <p><b>No. of samples received</b> : 3</p> <p><b>No. of samples analysed</b> : 3</p>	<p><b>Page</b> : 1 of 11</p> <p><b>Laboratory</b> : Waterloo - Environmental</p> <p><b>Account Manager</b> : Karanpartap Singh</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : 19055076910</p> <p><b>Date Samples Received</b> : 14-Nov-2022 16:40</p> <p><b>Issue Date</b> : 22-Nov-2022 12:45</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

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### ***Workorder Comments***

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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### ***Summary of Outliers***

#### ***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

#### ***Outliers: Reference Material (RM) Samples***

- No Reference Material (RM) Sample outliers occur.



***Outliers : Analysis Holding Time Compliance (Breaches)***

- Analysis Holding Time Outliers exist - please see following pages for full details.

***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) BH 4	E298	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	28 days	5 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) BH 9	E298	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	28 days	5 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) MW 2	E298	12-Nov-2022	17-Nov-2022	----	----		18-Nov-2022	28 days	6 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] BH 4	E235.Cl	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] BH 9	E235.Cl	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] MW 2	E235.Cl	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✓
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (0.003 mg/L)</b>										
HDPE [ON MECP] BH 4	E378-T	12-Nov-2022	----	----	----		17-Nov-2022	7 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (0.003 mg/L)</b>										
HDPE [ON MECP] BH 9	E378-T	12-Nov-2022	----	----	----		17-Nov-2022	7 days	5 days	✔
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (0.003 mg/L)</b>										
HDPE [ON MECP] MW 2	E378-T	12-Nov-2022	----	----	----		17-Nov-2022	7 days	5 days	✔
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] BH 4	E235.F	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] BH 9	E235.F	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] MW 2	E235.F	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Anions and Nutrients : Nitrate in Water by IC</b>										
HDPE [ON MECP] BH 4	E235.NO3	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔
<b>Anions and Nutrients : Nitrate in Water by IC</b>										
HDPE [ON MECP] BH 9	E235.NO3	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔
<b>Anions and Nutrients : Nitrate in Water by IC</b>										
HDPE [ON MECP] MW 2	E235.NO3	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔
<b>Anions and Nutrients : Nitrite in Water by IC</b>										
HDPE [ON MECP] BH 4	E235.NO2	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Anions and Nutrients : Nitrite in Water by IC</b>										
HDPE [ON MECP] BH 9	E235.NO2	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔
<b>Anions and Nutrients : Nitrite in Water by IC</b>										
HDPE [ON MECP] MW 2	E235.NO2	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	7 days	4 days	✔
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE [ON MECP] BH 4	E235.SO4	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE [ON MECP] BH 9	E235.SO4	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE [ON MECP] MW 2	E235.SO4	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	28 days	4 days	✔
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE dissolved (nitric acid) BH 4	E421	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	180 days	4 days	✔
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE dissolved (nitric acid) BH 9	E421	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	180 days	4 days	✔
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE dissolved (nitric acid) MW 2	E421	12-Nov-2022	16-Nov-2022	----	----		16-Nov-2022	180 days	4 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE [ON MECP] BH 4	E290	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✔



Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] BH 9	E290	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] MW 2	E290	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] BH 9	E330	12-Nov-2022	----	----	----		15-Nov-2022	48 hrs	74 hrs	* EHTL	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] BH 4	E330	12-Nov-2022	----	----	----		15-Nov-2022	48 hrs	75 hrs	* EHTL	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] MW 2	E330	12-Nov-2022	----	----	----		15-Nov-2022	48 hrs	76 hrs	* EHTR	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] BH 4	E100	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	28 days	5 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] BH 9	E100	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	28 days	5 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] MW 2	E100	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	28 days	5 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] BH 4	E108	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✓	



Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] BH 9	E108	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] MW 2	E108	12-Nov-2022	16-Nov-2022	----	----		17-Nov-2022	14 days	5 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] BH 4	E162	12-Nov-2022	----	----	----		16-Nov-2022	7 days	4 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] BH 9	E162	12-Nov-2022	----	----	----		16-Nov-2022	7 days	4 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] MW 2	E162	12-Nov-2022	----	----	----		16-Nov-2022	7 days	4 days	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [BOD HT-4d] BH 4	E121	12-Nov-2022	----	----	----		16-Nov-2022	3 days	4 days	* EHT	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [BOD HT-4d] BH 9	E121	12-Nov-2022	----	----	----		16-Nov-2022	3 days	4 days	* EHT	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [BOD HT-4d] MW 2	E121	12-Nov-2022	----	----	----		16-Nov-2022	3 days	4 days	* EHT	

**Legend & Qualifier Definitions**

- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).





## Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	745128	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	745456	2	37	5.4	5.0	✓
Chloride in Water by IC	E235.Cl	745121	1	12	8.3	5.0	✓
Colour (Apparent) by Spectrometer	E330	744477	1	5	20.0	5.0	✓
Conductivity in Water	E100	745127	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	744799	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (0.003 mg/L)	E378-T	746804	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	745125	1	5	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	745122	1	17	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	745123	1	11	9.0	5.0	✓
pH by Meter	E108	745126	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	745124	1	9	11.1	5.0	✓
TDS by Gravimetry	E162	745384	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	744968	1	13	7.6	5.0	✓
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	745128	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	745456	2	37	5.4	5.0	✓
Chloride in Water by IC	E235.Cl	745121	1	12	8.3	5.0	✓
Colour (Apparent) by Spectrometer	E330	744477	1	5	20.0	5.0	✓
Conductivity in Water	E100	745127	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	744799	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (0.003 mg/L)	E378-T	746804	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	745125	1	5	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	745122	1	17	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	745123	1	11	9.0	5.0	✓
pH by Meter	E108	745126	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	745124	1	9	11.1	5.0	✓
TDS by Gravimetry	E162	745384	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	744968	1	13	7.6	5.0	✓
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	745128	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	745456	2	37	5.4	5.0	✓
Chloride in Water by IC	E235.Cl	745121	1	12	8.3	5.0	✓
Colour (Apparent) by Spectrometer	E330	744477	1	5	20.0	5.0	✓
Conductivity in Water	E100	745127	1	7	14.2	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Method Blanks (MB) - Continued</b>							
Dissolved Metals in Water by CRC ICPMS	E421	744799	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (0.003 mg/L)	E378-T	746804	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	745125	1	5	20.0	5.0	✔
Nitrate in Water by IC	E235.NO3	745122	1	17	5.8	5.0	✔
Nitrite in Water by IC	E235.NO2	745123	1	11	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	745124	1	9	11.1	5.0	✔
TDS by Gravimetry	E162	745384	1	19	5.2	5.0	✔
Turbidity by Nephelometry	E121	744968	1	13	7.6	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	745456	2	37	5.4	5.0	✔
Chloride in Water by IC	E235.Cl	745121	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	744799	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (0.003 mg/L)	E378-T	746804	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	745125	1	5	20.0	5.0	✔
Nitrate in Water by IC	E235.NO3	745122	1	17	5.8	5.0	✔
Nitrite in Water by IC	E235.NO2	745123	1	11	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	745124	1	9	11.1	5.0	✔



## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Waterloo - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Colour (Apparent) by Spectrometer	E330 Waterloo - Environmental	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters.  Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Dissolved Orthophosphate by Colourimetry (0.003 mg/L)	E378-T Waterloo - Environmental	Water	APHA 4500-P E (mod)	Dissolved Orthophosphate is determined colourimetrically on a water sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

## QUALITY CONTROL REPORT

<p><b>Work Order</b> : <b>WT2221754</b></p> <p>Client : GM BluePlan Engineering</p> <p>Contact : Joanna Olesiuk</p> <p>Address : 650 Woodlawn Rd West Block C, Unit 2 Guelph ON Canada N1H 8J1</p> <p>Telephone :</p> <p>Project : ----</p> <p>PO : ----</p> <p>C-O-C number : 20-1002514</p> <p>Sampler : Joanna Olesiuk 519 824 8150</p> <p>Site : ----</p> <p>Quote number : GM BluePlan 2022 SOA</p> <p>No. of samples received : 3</p> <p>No. of samples analysed : 3</p>	<p>Page : 1 of 13</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Karanpartap Singh</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 19055076910</p> <p>Date Samples Received : 14-Nov-2022 16:40</p> <p>Date Analysis Commenced : 15-Nov-2022</p> <p>Issue Date : 22-Nov-2022 12:45</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

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Work Order : WT2221754  
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Project : ----



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## General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

### Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

# = Indicates a QC result that did not meet the ALS DQO.

## Workorder Comments

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Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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### Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 744477)</b>											
WT2221740-001	Anonymous	colour, apparent	----	E330	2.0	CU	63.8	64.4	0.919%	20%	----
<b>Physical Tests (QC Lot: 744968)</b>											
WT2221479-001	Anonymous	turbidity	----	E121	0.10	NTU	565	578	2.28%	15%	----
<b>Physical Tests (QC Lot: 745126)</b>											
WT2221631-001	Anonymous	pH	----	E108	0.10	pH units	8.35	8.32	0.360%	4%	----
<b>Physical Tests (QC Lot: 745127)</b>											
WT2221631-001	Anonymous	conductivity	----	E100	2.0	µS/cm	339	336	0.889%	10%	----
<b>Physical Tests (QC Lot: 745128)</b>											
WT2221631-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	178	179	0.561%	20%	----
<b>Physical Tests (QC Lot: 745384)</b>											
HA2200035-001	Anonymous	solids, total dissolved [TDS]	----	E162	13	mg/L	101	94	7	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 745121)</b>											
WT2221754-001	BH 4	chloride	16887-00-6	E235.Cl	0.50	mg/L	138	138	0.0911%	20%	----
<b>Anions and Nutrients (QC Lot: 745122)</b>											
WT2221754-001	BH 4	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.442	0.444	0.573%	20%	----
<b>Anions and Nutrients (QC Lot: 745123)</b>											
WT2221754-001	BH 4	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 745124)</b>											
WT2221754-001	BH 4	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	22.0	22.0	0.00743%	20%	----
<b>Anions and Nutrients (QC Lot: 745125)</b>											
WT2221754-001	BH 4	fluoride	16984-48-8	E235.F	0.020	mg/L	0.092	0.097	0.005	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 745456)</b>											
WT2221563-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0063	0.0069	0.0006	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 746804)</b>											
WT2221740-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-T	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 747814)</b>											
WT2221754-003	MW 2	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.258	0.264	2.26%	20%	----
<b>Dissolved Metals (QC Lot: 744799)</b>											
WT2221754-001	BH 4	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0348	0.0334	4.10%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 744799) - continued</b>											
WT2221754-001	BH 4	arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00131	0.00134	1.88%	20%	---
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0680	0.0668	1.86%	20%	---
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	0.013	0.00007	Diff <2x LOR	---
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	97.3	95.2	2.14%	20%	---
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00020	0.00019	0.0000006	Diff <2x LOR	---
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00124	0.00124	0.000008	Diff <2x LOR	---
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.029	0.030	0.0010	Diff <2x LOR	---
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000093	0.000096	0.000004	Diff <2x LOR	---
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0083	0.0085	0.0002	Diff <2x LOR	---
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	50.6	49.9	1.40%	20%	---
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0185	0.0190	2.62%	20%	---
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000752	0.000737	2.00%	20%	---
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00069	0.00072	0.00003	Diff <2x LOR	---
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.90	1.90	0.339%	20%	---
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00059	0.00062	0.00003	Diff <2x LOR	---
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000130	0.000132	0.000002	Diff <2x LOR	---
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	7.88	7.99	1.41%	20%	---
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	24.5	24.3	0.921%	20%	---
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.226	0.228	1.10%	20%	---
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	7.44	7.65	2.69%	20%	---
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00180	0.00182	0.00002	Diff <2x LOR	---
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00157	0.00160	1.74%	20%	---

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Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 744799) - continued</b>											
WT2221754-001	BH 4	vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----



## Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 744477)</b>						
colour, apparent	----	E330	2	CU	<2.0	----
<b>Physical Tests (QCLot: 744968)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 745127)</b>						
conductivity	----	E100	1	µS/cm	<1.0	----
<b>Physical Tests (QCLot: 745128)</b>						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 745384)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Anions and Nutrients (QCLot: 745121)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 745122)</b>						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 745123)</b>						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
<b>Anions and Nutrients (QCLot: 745124)</b>						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 745125)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 745456)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 746804)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-T	0.003	mg/L	<0.0030	----
<b>Anions and Nutrients (QCLot: 747814)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Dissolved Metals (QCLot: 744799)</b>						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 744799) - continued</b>						
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	---
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	---







## Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 744477)</b>									
colour, apparent	---	E330	2	CU	25 CU	108	70.0	130	---
<b>Physical Tests (QCLot: 744968)</b>									
turbidity	---	E121	0.1	NTU	200 NTU	93.4	85.0	115	---
<b>Physical Tests (QCLot: 745126)</b>									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
<b>Physical Tests (QCLot: 745127)</b>									
conductivity	---	E100	1	µS/cm	1409 µS/cm	101	90.0	110	---
<b>Physical Tests (QCLot: 745128)</b>									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	96.8	85.0	115	---
<b>Physical Tests (QCLot: 745384)</b>									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	93.6	85.0	115	---
<b>Anions and Nutrients (QCLot: 745121)</b>									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	---
<b>Anions and Nutrients (QCLot: 745122)</b>									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	101	90.0	110	---
<b>Anions and Nutrients (QCLot: 745123)</b>									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	---
<b>Anions and Nutrients (QCLot: 745124)</b>									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	---
<b>Anions and Nutrients (QCLot: 745125)</b>									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.1	90.0	110	---
<b>Anions and Nutrients (QCLot: 745456)</b>									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.6	85.0	115	---
<b>Anions and Nutrients (QCLot: 746804)</b>									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-T	0.003	mg/L	0.0212 mg/L	103	80.0	120	---
<b>Anions and Nutrients (QCLot: 747814)</b>									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.9	85.0	115	---
<b>Dissolved Metals (QCLot: 744799)</b>									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	97.9	80.0	120	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	103	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 744799) - continued</b>									
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	108	80.0	120	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	106	80.0	120	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	95.5	80.0	120	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	107	80.0	120	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	95.4	80.0	120	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	106	80.0	120	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	---
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	102	80.0	120	---
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	97.4	80.0	120	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	99.8	80.0	120	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	98.4	80.0	120	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	97.4	80.0	120	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	106	80.0	120	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	81.3	80.0	120	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	102	80.0	120	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	101	80.0	120	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	99.6	80.0	120	---
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	104	80.0	120	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	97.2	80.0	120	---
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	101	60.0	140	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	90.2	80.0	120	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	95.3	80.0	120	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	100.0	80.0	120	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	93.1	80.0	120	---
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	108	80.0	120	---
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	98.6	80.0	120	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	96.2	80.0	120	---
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	105	80.0	120	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	99.4	80.0	120	---
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	104	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 744799) - continued</b>									
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	97.5	80.0	120	---



## Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 745121)</b>										
WT2221754-001	BH 4	chloride	16887-00-6	E235.Cl	ND mg/L	100 mg/L	ND	75.0	125	----
<b>Anions and Nutrients (QCLot: 745122)</b>										
WT2221754-001	BH 4	nitrate (as N)	14797-55-8	E235.NO3	2.46 mg/L	2.5 mg/L	98.6	75.0	125	----
<b>Anions and Nutrients (QCLot: 745123)</b>										
WT2221754-001	BH 4	nitrite (as N)	14797-65-0	E235.NO2	0.492 mg/L	0.5 mg/L	98.5	75.0	125	----
<b>Anions and Nutrients (QCLot: 745124)</b>										
WT2221754-001	BH 4	sulfate (as SO4)	14808-79-8	E235.SO4	97.9 mg/L	100 mg/L	97.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 745125)</b>										
WT2221754-001	BH 4	fluoride	16984-48-8	E235.F	0.978 mg/L	1 mg/L	97.8	75.0	125	----
<b>Anions and Nutrients (QCLot: 745456)</b>										
WT2221563-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
<b>Anions and Nutrients (QCLot: 746804)</b>										
WT2221740-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-T	0.0186 mg/L	0.0196 mg/L	94.8	70.0	130	----
<b>Anions and Nutrients (QCLot: 747814)</b>										
WT2221754-003	MW 2	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
<b>Dissolved Metals (QCLot: 744799)</b>										
WT2221754-002	BH 9	aluminum, dissolved	7429-90-5	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0543 mg/L	0.05 mg/L	109	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0584 mg/L	0.05 mg/L	117	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00505 mg/L	0.005 mg/L	101	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0470 mg/L	0.05 mg/L	94.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.045 mg/L	0.05 mg/L	90.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00543 mg/L	0.005 mg/L	109	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00258 mg/L	0.0025 mg/L	103	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0125 mg/L	0.0125 mg/L	99.9	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0123 mg/L	0.0125 mg/L	98.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 744799) - continued</b>										
WT2221754-002	BH 9	iron, dissolved	7439-89-6	E421	0.060 mg/L	0.05 mg/L	120	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0114 mg/L	0.0125 mg/L	91.0	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0247 mg/L	0.025 mg/L	98.8	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.564 mg/L	0.5 mg/L	113	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.39 mg/L	2.5 mg/L	95.5	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00532 mg/L	0.005 mg/L	106	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0611 mg/L	0.05 mg/L	122	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00438 mg/L	0.005 mg/L	87.5	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.10 mg/L	2.5 mg/L	84.1	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00543 mg/L	0.005 mg/L	109	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0528 mg/L	0.05 mg/L	106	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0249 mg/L	0.025 mg/L	99.5	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0132 mg/L	0.0125 mg/L	106	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0261 mg/L	0.025 mg/L	104	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00505 mg/L	0.005 mg/L	101	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20-1002514

Canada Toll Free: 1 800 668 9878

Page



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Environmental Division  
Waterloo

Work Order Reference  
WT2221754



Telephone: +1 519 888 8910

<b>Report To</b> Contact and company name below will appear on the final report Company: <u>Gm BluePlan Eng.</u> Contact: <u>J. Olesial</u> Phone: <u>519 324 8110</u> Company address below will appear on the final report Street: <u>650 Woodlawn Rd W.</u> City/Province: <u>Quebec, Ont</u> Postal Code:		<b>Reports / Recipients</b> Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDO (DIGITAL) Merge QC/QCI Reports with COA <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <u>joanna.olesial@blueplan.ca</u> Email 2: Email 3:		<b>Turnaround Time (TAT) Requested</b> <input checked="" type="checkbox"/> Routine (R) if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day (P4) if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day (P3) if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day (P2) if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day (E) if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day (E2) if received by 10am M-F - 200% rush surcharge. Addtl may apply to rush requests on weekends, statutory holidays and non-ro.																																		
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: <u>Joanna Olesial</u> Contact:		<b>Invoice Recipients</b> Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Email 2:		Date and Time Required for all B&P TATs: For all tests with rush TATs requested, please see Analysis Req																																		
<b>Project Information</b> ALS Account # / Quote #: Job #: PO / AFE: LSD:		<b>Oil and Gas Required Fields (client use)</b> AFE/Cost Center: PO#: Major/Minor Code: Routing Code: Requisitioner: Location:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below <table border="1"> <tr> <th rowspan="2">NUMBER OF CONTAINERS</th> <th rowspan="2">Wastey Qty. in package</th> <th colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below</th> <th rowspan="2">SAMPLES ON HOLD</th> <th rowspan="2">EXTENDED STORAGE REQUIRED</th> <th rowspan="2">SUSPECTED HAZARD (see notes)</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>		NUMBER OF CONTAINERS	Wastey Qty. in package	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below												SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																
NUMBER OF CONTAINERS	Wastey Qty. in package	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below												SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																						
ALS Lab Work Order # (ALS use only): <u>WT2221754</u> ALS Contact: <u>K. Singh</u> Sampler: <u>J10</u>		<table border="1"> <thead> <tr> <th>ALS Sample # (ALS use only)</th> <th>Sample Identification and/or Coordinates (This description will appear on the report)</th> <th>Date (dd-mm-yy)</th> <th>Time (hh:mm)</th> <th>Sample Type</th> <th>NUMBER OF CONTAINERS</th> <th>Wastey Qty. in package</th> </tr> </thead> <tbody> <tr> <td></td> <td><u>BH 4</u></td> <td><u>12/14/22</u></td> <td><u>16:10</u></td> <td><u>RW</u></td> <td><u>4</u></td> <td><u>✓</u></td> </tr> <tr> <td></td> <td><u>BH 9</u></td> <td><u>12/14/22</u></td> <td><u>16:50</u></td> <td><u>/</u></td> <td><u>1</u></td> <td><u>✓</u></td> </tr> <tr> <td></td> <td><u>NW2</u></td> <td><u>"</u></td> <td><u>15:10</u></td> <td><u>/</u></td> <td><u>1</u></td> <td><u>✓</u></td> </tr> </tbody> </table>		ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Wastey Qty. in package		<u>BH 4</u>	<u>12/14/22</u>	<u>16:10</u>	<u>RW</u>	<u>4</u>	<u>✓</u>		<u>BH 9</u>	<u>12/14/22</u>	<u>16:50</u>	<u>/</u>	<u>1</u>	<u>✓</u>		<u>NW2</u>	<u>"</u>	<u>15:10</u>	<u>/</u>	<u>1</u>	<u>✓</u>	SAMPLE RECEIPT DETAILS (ALS use only) Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED Submission Comments Identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A INITIAL COOLER TEMPERATURES °C: FINAL COOLER TEMPERATURES °C: <u>7.8</u>						
ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Wastey Qty. in package																																
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Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) <u>PWQO standards criteria</u>		SHIPMENT RELEASE (client use) Released by: <u>Joanna Olesial</u> Date: <u>Nov 19/22</u> Time: <u>16:20</u> INITIAL SHIPMENT RECEPTION (ALS use only) Received by: <u>[Signature]</u> Date: <u>11/19/22</u> Time: <u>16:40</u>																																		

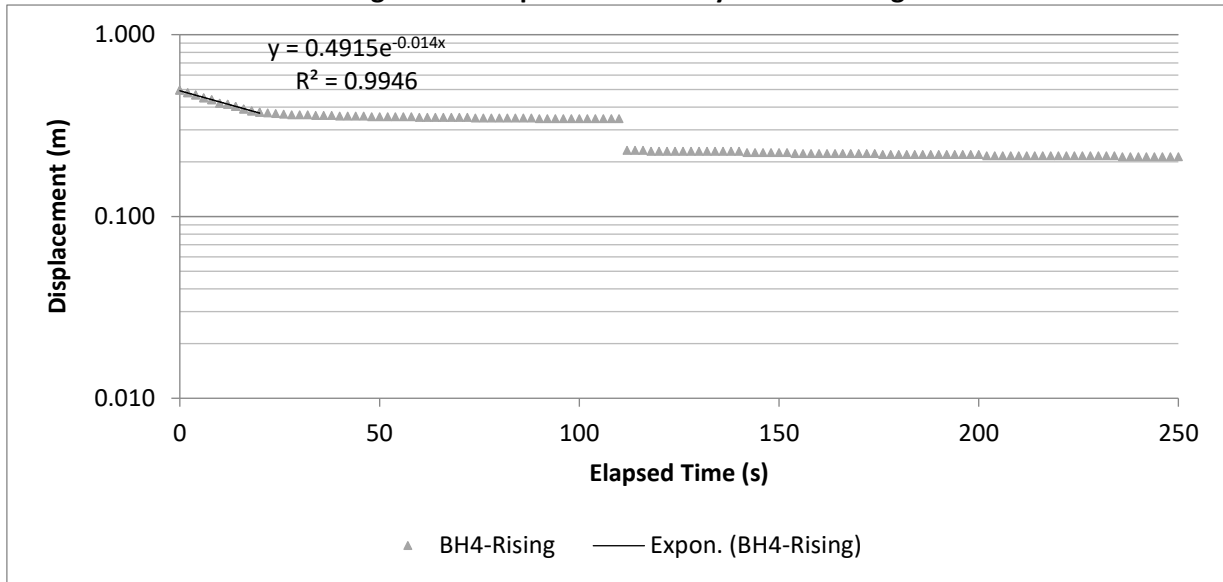
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.  
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

C7C-075, B-280, MM-413, N-410



**APPENDIX E:  
SLUG TEST ANALYSES**

### Single Well Response Test Analysis: BH4-Rising



### Bouwer-Rice Analysis

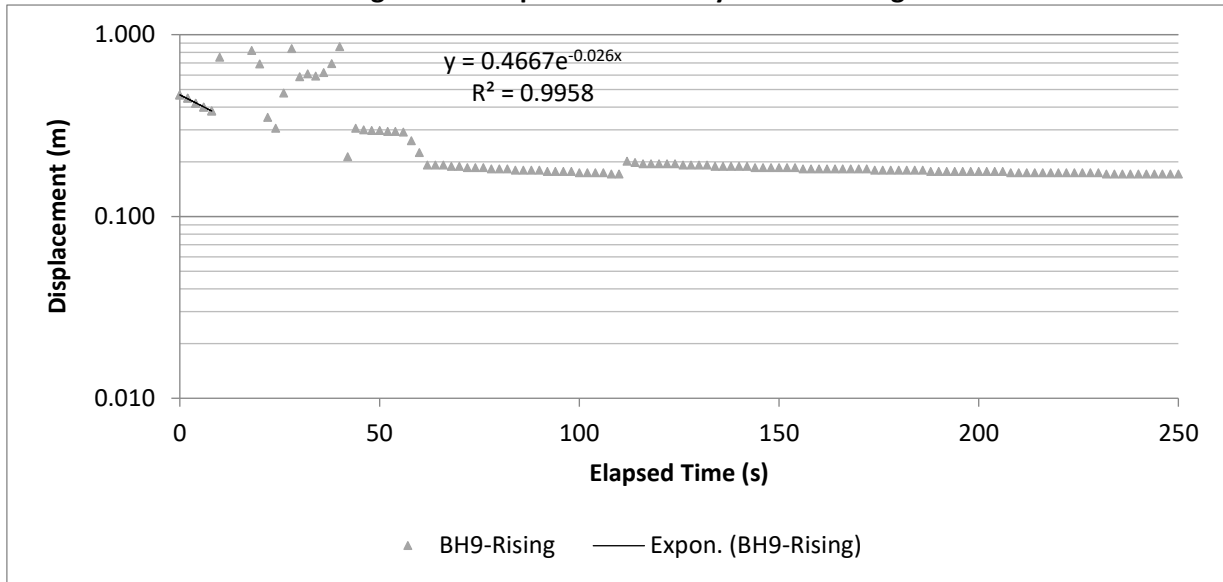
Governing Equation:

$$k = \frac{r_c^2 \ln\left(\frac{R_e}{r_w}\right) \left(\frac{1}{t}\right) \ln\left(\frac{y_o}{y_t}\right)}{2L}$$

$(1/t)(\ln(y_o/y_t))=$	1.40E-02	(from slope of data)
$L =$	4.5	(Saturated Length of Screen)
$r_w =$	0.14	(radius of filter pack)
$L/r_w =$	32.1	(ratio)
$A =$	2.25	(from shape factor curves in Bouwer and Rice, 1976)
$B =$	0.3	(from shape factor curves in Bouwer and Rice, 1976)
$C =$	1.6	(from shape factor curves in Bouwer and Rice, 1976)
$\ln(R_e/r_w) =$	3.388	(from shape factor equation in Bouwer and Rice, 1976)
$D =$	4.5	(Saturated Thickness of Geologic Unit)
$H =$	12.39	(Height of water column above bottom of well)
$r_c =$	0.025	(radius of well casing)
$k =$	3.3E-06	m/s

**Hydraulic Conductivity of SAND is 3.3E-06 m/s**

### Single Well Response Test Analysis: BH9-Rising



### Bouwer-Rice Analysis

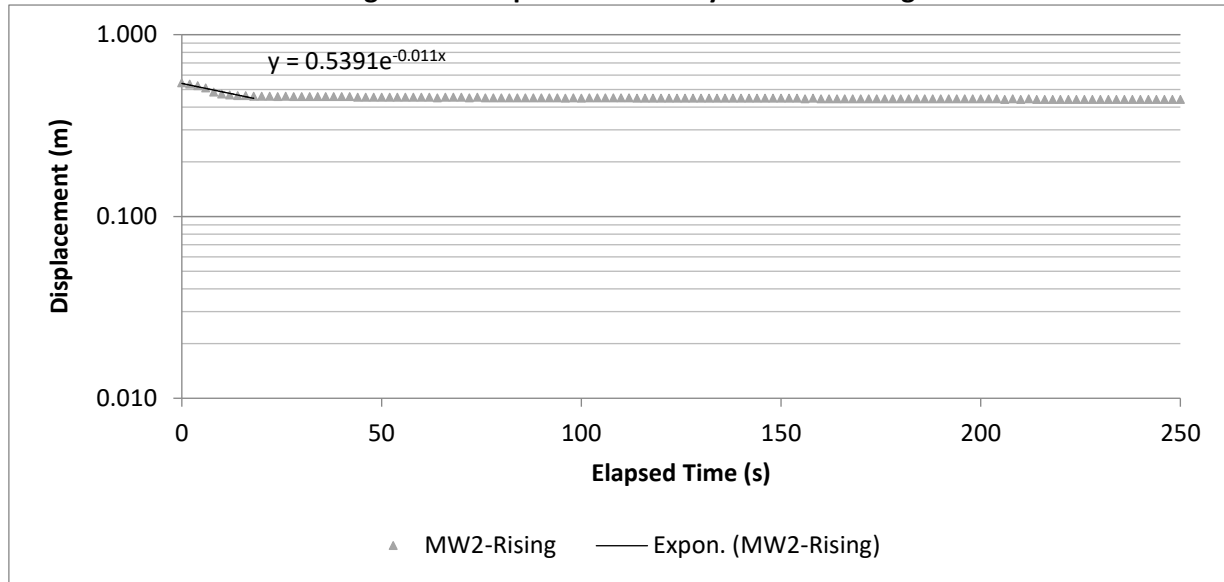
Governing Equation:

$$k = \frac{r_c^2 \ln\left(\frac{R_e}{r_w}\right) \left(\frac{1}{t}\right) \ln\left(\frac{y_o}{y_t}\right)}{2L}$$

- (1/t)(ln(y<sub>o</sub>/y<sub>t</sub>))= 2.60E-02 (from slope of data)
- L = 0.6 (Saturated Length of Screen)
- r<sub>w</sub> = 0.14 (radius of filter pack)
- L/r<sub>w</sub> = 4.3 (ratio)
- A = 1.70 (from shape factor curves in Bouwer and Rice, 1976)
- B = 0.2 (from shape factor curves in Bouwer and Rice, 1976)
- C = 0.75 (from shape factor curves in Bouwer and Rice, 1976)
- ln(R<sub>e</sub>/r<sub>w</sub>) = 1.074 (from shape factor equation in Bouwer and Rice, 1976)
- D = 0.6 (Saturated Thickness of Geologic Unit)
- H = 0.6 (Height of water column above bottom of well)
- r<sub>c</sub> = 0.08 (radius of well casing)
- k = 1.5E-04 m/s

**Hydraulic Conductivity of SAND and SAND AND GRAVEL is 1.5E-04 m/s**

### Single Well Response Test Analysis: MW2-Rising



### Bouwer-Rice Analysis

Governing Equation:

$$k = \frac{r_c^2 \ln\left(\frac{R_e}{r_w}\right) \left(\frac{1}{t}\right) \ln\left(\frac{y_o}{y_t}\right)}{2L}$$

$(1/t)(\ln(y_o/y_t))=$	1.10E-02	(from slope of data)
L =	2.2	(Saturated Length of Screen)
$r_w=$	0.1	(radius of filter pack)
$L/r_w=$	22.0	(ratio)
A =	2.05	(from shape factor curves in Bouwer and Rice, 1976)
B =	0.25	(from shape factor curves in Bouwer and Rice, 1976)
C =	1.55	(from shape factor curves in Bouwer and Rice, 1976)
$\ln(R_e/r_w)=$	2.643	(from shape factor equation in Bouwer and Rice, 1976)
D =	3.56	(Saturated Thickness of Geologic Unit)
H =	3.56	(Height of water column above bottom of well)
$r_c=$	0.025	(radius of well casing)
k =	4.1E-06	m/s

**Hydraulic Conductivity of SAND AND GRAVEL is 4.1E-06 m/s**

**APPENDIX F:  
PRELIMINARY CONSTRUCTION DEWATERING ESTIMATES**

## Hydrogeological Calculations for Dewatering Estimates

**Project:** River's Edge Subdivision  
**Project Number:** 104104-1

**Date:** November 23, 2023  
**Engineer/Technician:** MRL

### Description of Project:

Construction of residential subdivision with related servicing and stormwater management.

### Description of Conceptual Model for Dewatering Estimation:

#### SWM Pond #1: Flow to Well Model in Unconfined Aquifer

$k = 3 \times 10^{-4}$  m/s (based on factor of safety of 2 applied to slug test result from testing at BH7)

Equivalent Radius = 12.2 m (based on approximate area of 470 m<sup>2</sup>)

Estimated drawdown = 1.6 m = GW Level - Base of Excavation = 455.8 - 454.2 masl

Estimated saturated thickness (H) = 3.2 m (set at two times the drawdown)

#### Sanitary Sewer along extension of Luther Road to Bielby Street: Flow to Finite Trench Model in a Confined Aquifer

$k = 3 \times 10^{-4}$  m/s (as above)

Trench length (x) = 20 m

Trench width (rw) = 1.5 m

Thickness of Aquifer = 0.7 m (Sand and Gravel layer at BH4)

Drawdown = 3.0 m (estimated requirement to prevent destabilization of subgrade)





## Hydrogeological Calculations for Dewatering Estimates

**Project:** River's Edge Subdivision  
**Project Number:** 104104-1

**Date:** November 23, 2023  
**Engineer/Technician:** MRL

### **Preliminary Calculation of Dewatering at SWM Pond #1**

#### Radius of Influence

Sichart (Unconfined)

$$R_o = 3000(H - h)\sqrt{k}$$

R <sub>0</sub> =	83	m (Radius of Influence)
H=	3.2	m (Initial Head)
h=	1.6	m (Head at Drawdown)
k=	3.00E-04	m/s (Hydraulic Conductivity)

#### Flow Estimation

Aquifer Type: Unconfined (Water Table)

Calculation Approach: Flow to Well

Governing Equation:

$$Q = \pi k \frac{(H^2 - h^2)}{\ln \frac{R_o}{r_w}}$$

Q=	705,809	L/d (Dewatering Flow)
k=	3E-04	m/s (Hydraulic Conductivity)
H=	3.2	m (Initial Head)
h=	1.6	m (Head at Drawdown)
R <sub>0</sub> =	114	m (Radius of Influence)
r <sub>w</sub> =	47	m (Radius of Well or System)

## Hydrogeological Calculations for Dewatering Estimates

**Project:** River's Edge Subdivision  
**Project Number:** 104104-1

**Date:** November 23, 2023  
**Engineer/Technician:** MRL

### **Preliminary Calculation of Dewatering at Sanitary Sewer along Luther Road Extension**

#### Radius of Influence

Cooper-Jacob (Confined)

$$R_o = \sqrt{\frac{2.25kBt}{C_s}}$$

$R_o =$	16.5	m (Radius of Influence)
$k =$	3.00E-04	m/s (Hydraulic Conductivity)
$C_s =$	0.15	(Storage Coefficient)
$B =$	0.7	m (Thickness of Aquifer)
$t =$	86400	s (Time, Duration of Pumping)

Aquifer Type:

Confined

Calculation Approach:

Flow to Finite Trench

Governing Equation:

$$Q = 2\pi k \frac{(\Delta H)}{\ln \frac{R_o}{r_w}} + 2xkB \frac{(\Delta H)}{L}$$

$Q =$	335,746	L/d (Dewatering Flow)
$x =$	20	m (Length of Trench)
$k =$	3.00E-04	m/s (Hydraulic Conductivity)
$\Delta H =$	3	m (Drawdown)
$B =$	0.7	m (Thickness of Aquifer)
$L =$	16.5	m (Distance to "Source")
$R_o =$	16.5	m (Radius of Influence)
$r_w =$	1.5	m (Radius of Well or System)