

APPENDIX J

Hydrogeological Assessment

COUNTY OF WELLINGTON

**HYDROGEOLOGICAL INVESTIGATION
WELLINGTON ROAD 109 SCHEDULE C
MUNICIPAL CLASS ENVIRONMENTAL
ASSESSMENT**

JUNE 28, 2023





HYDROGEOLOGICAL INVESTIGATION

WELLINGTON ROAD 109 SCHEDULE C MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

COUNTY OF WELLINGTON

PROJECT NO.: 17M-01271-02

DATE: JUNE 28, 2023

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June 28, 2023

County of Wellington
74 Woolwich Street
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Attention: Mr. Joe de Koning, P.Eng.

Dear Mr. de Koning:

RE: Hydrogeological Investigation – Wellington Road 109 Schedule C Municipal Class Environmental Assessment

WSP is pleased to submit the Hydrogeological Investigation in support of water taking Environmental Activity and Sector Registry for the Wellington Road 109 Schedule C Municipal Class Environmental Assessment. WSP understands that the County of Wellington has assessed the best option for replacing, rehabilitating or relocating Wellington Road 109 and the 4 bridges east of Highway 6 in Arthur, Ontario.

WSP has completed a background review for the project, including reviewing available technical information. WSP has completed a dewatering assessment for the proposed construction and prepared a monitoring and mitigation plan for use during construction.

All of which is respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Peter Hayes'.

Peter Hayes, P.Geo.
Senior Hydrogeologist /
Environmental Specialist

WSP ref.: 17M-01271-02

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1 INTRODUCTION

WSP has been retained by the County of Wellington to complete a preliminary hydrogeological investigation for the future upgrades to the Wellington Road 109.

The County of Wellington considered options for replacing or rehabilitating 4 bridges along the existing road or moving the road north or south of its current alignment to avoid the multiple Conestogo River crossings. The purpose of this report is to determine if a Water Taking Environmental Activity and Sector Registry (EASR) or Permit to Take Water would be required for the proposed construction replacing the 4 bridges along the existing road.

The site is shown on attached **Figure 1**. Select design drawings are provided in **Appendix A**.

The County of Wellington is the owner of the site where the water taking will occur.

There are two scenarios depending on construction staging of B109133 and B109134.

If the detailed design is based on the conventional staging method as presented on the General Arrangements:

- B109132: 2024-2025
- C109123: 2025
- B109133: 2026-2027
- B109134: 2026-2027

If the option with temporary bridge for staging is selected:

- B109132: 2024-2025
- C109123: 2025
- B109133: 2026
- B109134: 2027

Option 1 will include overlap of construction for B109132 and C109123 as well as for overlap of construction for B1091333 and B109134. If Option 2 is selected construction will overlap for B109132 and C109123 only.

1.1 ENVIRONMENTAL ASSESSMENT (EA) PROCESS

The study followed the approved environmental planning process for a Schedule 'C' projects under the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011 and 2015). This study is subject to Phases 1 through 4 of the Class EA process, and that an environmental Study Report (ESR) be prepared and filed for review by the public and review agencies. A key component of the study was consultation with interested stakeholders (public and agencies), including two Public Information Centres (PIC). The Notice of Commencement for this project occurred in August 2020, which noted that all four structures included in this study are nearing the end, or have reached the end, of their design service life.

1.2 QUALIFIED PERSON

This report was prepared under Regulation 63/16. As per O. Reg. 63/16 this report was prepared by a Qualified Person, Peter Hayes, who has a certificate of registration from the Professional Geoscientists Act, 2000 and is a member of the association of Professional Geoscientist of Ontario (P. Geo.) and meets the requirements of the Professional Geoscientists Act, 2000. Peter has completed hundreds of

hydrogeological investigations in support of Permits to Take Water and water taking Environmental Activity and Sector Registry's over the last fifteen years.

2 BACKGROUND

2.1 CLIMATE

WSP completed a review of Canadian Climate Normals 1981 to 2010 for the closest Government of Canada weather station, Fergus Shand Dam, which is located approximately 18 km from the site. Temperature follows the typical trend of the region with average daily summer temperatures around approximately 20°C and average daily winter temperatures around approximately -5°C. The monthly precipitation ranges from approximately 56 mm to 97 mm per month. Average annual precipitation is approximately 946 mm. Approximately 29 days of the year have more than 10 mm of precipitation on average and approximately 5 days of the year have more than 25 mm of precipitation on average.

2.2 LAND USE AND NATURAL AREAS

The site is located in a rural setting, surrounded primarily by agricultural farm fields and rural residences with some commercial businesses. The Village of Arthur is located to the northwest of the site. Natural features of the site include the Conestogo River, tributaries and wooded areas. Natural Features are shown on attached **Figure 2**

The GRCA (2001) Technical Background Report for the Grand River Fisheries Management Plan indicates that the upper zone for the Grand River Watershed provides warmwater fish habitat, including the Wellington Road 109 Grand River crossing which is roughly 20 km east of the Conestogo River.

2.3 TOPOGRAPHY, DRAINAGE, AND PHYSIOGRAPHY

The topography at the site is slightly undulating with elevations ranging from approximately 450 m above mean sea level (mASL) to 470 mASL, with higher elevations present north and south of Wellington Road 109. There is a broad valley around the Conestogo River as well as the surrounding tributaries. The study area generally slopes towards the Conestogo River and the other smaller tributaries to the east of the river. Topographic contours are shown on attached **Figure 2**.

The site is situated within drumlinized till plains, specifically the Stratford Till Plain physiographic region (Chapman and Putnam, 1984). This physiographic region is characterized by undulating till plains with drumlins. Creeks and rivers have incised valleys into this plain. Larger rivers and creeks, such as the Conestogo River, could have deeper incised valleys, and there are shallower valleys around smaller creeks. The Stratford Till consists of more subdued topography, noting that there is a thin deposit of glaciolacustrine sediments on top of the silty clay till. This region has a gentle but steady slope to the south, towards Lake Ontario.

Quaternary geology at the site consists of Tavistock Till, a sandy silt. Quaternary geology is shown on attached **Figure 3**.

2.4 MECP DATABASES

2.4.1 WATER WELL RECORDS

Eighty-four (84) MECP (2021) water well records are located within 500 m of the site. The reported uses of the water well records include:

- Eleven (11) Abandoned records;
- Three (3) Commercial Water Supply wells;
- Ten (10) Domestic and Livestock Water Supply wells;
- Twenty-four (24) Domestic Water Supply wells
- One (1) Livestock Water Supply wells;
- Twenty-six (26) Monitoring wells;
- One (1) Municipal Water Supply well;
- Seven (7) Unknown records; and
- One (1) Water Supply well.

Well records were completed between 1950 and 2020. Reported well depth range from 3.6 m to 216 m, with twenty-two (22) records classified as overburden and twenty-one (21) classified as bedrock. Reported static water levels range from 4.6 m to 24.4 m. A complete summary is provided in attached **Table 1** and locations are shown on attached **Figure 4**.

It is assumed that all private properties outside of the Village of Arthur do not have access to municipal water. The Village of Arthur has municipal water.

2.4.2 PERMITS TO TAKE WATER AND WATER TAKING ENVIRONMENTAL ACTIVITY AND SECTOR REGISTRY

There are two Permits to Take Water (MECP, 2020) within approximately 1 km of the site, as summarized in the following **Table 2**.

Table 2: Permits to Take Water

Permit Number	Permit Holder Name	Purpose	Maximum Taking (L/day)	Source Type
8202-9DNKD3	The Corporation of the Township of Wellington North	Water Supply	2,261,000	Groundwater
8202-9DNKD3	The Corporation of the Township of Wellington North	Water Supply	2,261,000	Groundwater

Additionally, there is one (1) water taking Environmental Activity and Sector Registry (EASR) located within 1 km of the site (Government of Canada, 2019), summarized in the following **Table 3**. The closest PTTW is shown on attached **Figure 4**.

Table 3: Water Taking Environmental Activity and Sector Registry

Approval Number	Business Name	Approval Type	Status	Maximum Water Takings Limit
-----------------	---------------	---------------	--------	-----------------------------

R-009-4110383907	The Corporation of the City of Kitchener	EASR – Water Taking – Construction Dewatering	Registered	400,000 L/day
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The PTTW's are located with the Village of Arthur for the municipally water supply. The water taking EASR is located along the for temporary construction dewatering. As shown on attached **Figure 4**.

2.4.3 PROVINCIAL GROUNDWATER MONITORING NETWORK

There are no Provincial Groundwater Monitoring Network Wells (MECP, 2020) within 1 km of the site.

2.4.4 PROVINCIAL (STREAM) WATER QUALITY MONITORING NETWORK

There are no Provincial (Stream) Water Quality Monitoring Network (MECP, 2020) stations located within 500 m of the site.

2.5 SOURCE WATER PROTECTION

The site is located in the Grand River Source Water Protection Area and is located within a Wellhead Protection Area – D (WHPA-D) with a score of 2 and 4, and Intake Protection Zone -3 (IPZ-3) with a score of less than 4 and a Significant Groundwater Recharge Area (SRGA) is located adjacent to the northeast edge of the study area (MECP, 2022). Source water protection areas are shown on attached **Figure 5**.

“The Town of Arthur is currently serviced by three municipal production wells: 7B, 8A and 8B. The wells are completed in a deep overburden aquifer at approximately 46m below ground surface. The upper surficial Quaternary geology is mapped as clayey silt to silt till (Tavistock Till) which covers a large part of the area surrounding Arthur. Well 7B is located west of Arthur along Highway 109; Wells 8A and 8B are located to the south of Arthur in a rural setting” (LERSPC, 2022). Wells 8A and 8B are located approximately 1km south of the site, and the site is in the WHPA-D for all three wells (including the well to the west of Arthur). WHPA-D's are defined as the 25-year time of travel capture zone, which are delineated by groundwater modelling. Vulnerability scores were determined based on aquifer vulnerability classifications and transportation pathway assessments; scores of 2 have low vulnerability and a score of 4 has medium vulnerability for WHPA-D. Most of the site has a score of 2 (low) with the exception of a small area by the Wellington Road 109 and Baseline Jones intersection which has a score of 4 (medium) because of transport pathways. Given the depth of the wells, the distance from the site and the low vulnerabilities no impacts are anticipated.

This site is upstream of Hidden Valley Water Supply Intake, which is located on the Grand River in the City of Kitchener. IPZ-3 was delineated using the GRCA's watershed and sub-watershed delineations, all upstream contributing areas (LERSPC, 2022). The site has an IPZ-3 vulnerability score of less than 4, this is considered low and no impacts are anticipated given the distance from the intake.

SGRAs are delineated based on a model which utilizes surficial geology, land cover and climatic conditions to define the SGRAs (LERSPC, 2022). SGRAs support the protection of drinking water. As the SGRA is to the northwest of the study area no impacts are anticipated.

Based on the Source Water Protection Threats Tool (2021) there are no threats for these source water protection areas (WHPA-D with a score of 2 and 4, IPZ-3 with a score of 4 and SGRA).

2.6 CONTAMINANT SOURCES

WSP obtained an ERIS report on November 24, 2021, the report contained 209 records within 500 m of the site (ERIS, 2021). The following **Table 4** summarizes the database records.

Table 4: ERIS Records

Acronym	Database	Number for Records
BORE	Borehole	6
CA	Certificates of Approval	4
DTNK	Delisted Fuel Tanks	13
ECA	Environmental Compliance Approval	1
EHS	ERIS Historical Searches	5
FST	Fuel Storage Tank	13
FSTH	Fuel Storage Tank - Historic	5
GEN	Ontario Regulation 347 Waste Generators Summary	15
HINC	TSSA Historic Incidents	1
PES	Pesticide Register	2
PINC	Pipeline Incidents	2
PRT	Private and Retail Fuel Storage Tanks	6
RST	Retail Fuel Storage Tanks	10
SCT	Scott's Manufacturing Directory	2
SPL	Ontario Spills	37
WWIS	Water Well Information System	87

WSP completed a through review of the records and compiled the attached summary **Table 5**. The complete ERIS report is provided in **Appendix B**. Based on the ERIS report there are a number of properties in the area with potential contaminant sources. Records include properties with fuel storage and properties with historical fuel and sewage spills.

Collectively the ERIS report indicates that there may be a risk of encountering environmental contamination attributed to existing land uses, as well as historical spills. There may be additional unreported spills and releases attributed to existing and historical land uses, such as historical fuel spills, and the application of salt on roadways for winter ice control.

2.7 GEOLOGY

The site is in the Stratford till plain physiographic region as per Chapman and Putnam (1984). The Stratford till plain is composed of silty clay. Surficial geology includes Tavistock Till as shown on attached **Figure 3**.

CMT Engineering Inc. completed geotechnical investigations for each bridge under four (4) separate covers:

- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 6, Structure B109132 Wellington Road 109 Arthur, Ontario County of Wellington
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 5, Structure C109123 Wellington Road 109 Arthur, Ontario County of Wellington

- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 4, Structure B109133 Wellington Road 109 Arthur, Ontario County of Wellington
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 10, Structure B109134 Wellington Road 109 Arthur, Ontario County of Wellington

Between the four (4) Geotechnical reports eight (8) boreholes were completed two (2) for each report / bridge site. WSP has review all four (4) reports in support of the hydrogeological assessment. Based on the boreholes geology at the site consisted of the following:

- Asphalt encountered in all boreholes with thickness from 0.125 m to 0.48 m;
- Fill (Granular, Concrete, Silty Sand) encountered in all boreholes, with an average thickness of 1.7 m and depths ranging from 0.84 m to 4.34 m;
- Topsoil encountered in six (6) boreholes, with an average thickness of 0.94 m and depths ranging from 1.98 m to 3.81 m; Note one borehole had a 0.3 m thick fill unit below the topsoil and one borehole had topsoil and fill alternating in thin layers;
- Sandy Silt Till encountered in two (2) boreholes, with an average thickness of 6.56 m and depths at 9.75 m;
- Silt and Clay encountered in six (6) boreholes, with an average thickness of 4.36 m and depths ranging from 4.57 m to 9.75 m;
- Silt and Clay Till encountered in four (4) boreholes, with an average thickness of 3.96 m and depths ranging from 8.23 m to 11.28 m;
- Gravel encountered in one (1) borehole, with a thickness of 0.61 m and at a depth of 11.28 m;
- Silt encountered in one (1) borehole, with a thickness of 0.61 m and at a depth of 11.28 m;

A summary of the borehole logs is provided in attached **Table 6** and the complete geotechnical reports, including the borehole logs, are provided in **Appendix C**.

2.8 HYDROGEOLOGY

None of the boreholes were completed as monitoring wells. The zone of wet to saturated was estimated for each of the boreholes as per the following **Table 7**.

Table 7: Estimated Zone of Wet to Saturated Zones

Location	Borehole	Ground Surface Elevation (masl)	Estimated Zone of Wet to Saturated Zones		Bottom of Borehole Elevation (masl)
			From (masl)	To (masl)	
B109132	BH1	452.76	452.2	449.42	443.01
B109132	BH2	452.69	451.51	449.64	442.94
C109123	BH1	457.87	-	-	446.59
C109123	BH2	457.86	447.19	446.58	446.58
B109133	BH1	461.92	452.78	452.17	452.17
B109133	BH2	461.9	455.19	454.28	452.15
B109133	BH2	461.9	453.01	452.15	452.15
B109134	BH1	465	457.31	456.77	456.77
B109134	BH2	464.97	-	-	456.74

Two year storm surface water levels for the Conestoga River for each bridge are provided on the design drawings, as summarized in **Table 8** below.

Table 8: Surface Water Elevations

Location	Surface Water Elevation (mASL)	
	September 2017	2 years
B109132	447.50	448.91
C109123	451.05	452.59
B109133	457.58	459.43
B109134	461.20	462.95

CMT Engineering Inc. (2021) also completed grain size analysis on eight (8) soils samples from boreholes across the site and at various depths. WSP calculated hydraulic conductivities of the units based on the grain size analysis via the Puckett et. al. method (Bradbury and Muldoon, 1990) for finer-grained samples, as follows:

$$K = (4.36 \times 10^{-5}) \times e^{-0.1975 \times \%Clay}$$

Where:

- K = hydraulic conductivity (m/s) (metres per second); and
- % Clay = percent of the total sample finer than 0.002 mm by weight.

Based on grain size analyses hydraulic conductivities are provided in **Table 9** below.

Table 9: Hydraulic Conductivity – Grain Size Analysis

Location	Borehole	Sample Depth (m)	Sample Description	Clay Percentage (%<0.002 mm)	Hydraulic Conductivity (m/s)	Dewatering Calculations
B109132	BH1	3.66-4.57	Sandy Silt	14	2.75E-06	worst case
B109132	BH2	9.14-9.75	Sandy Silt	17	1.52E-06	
B109132	average				2.13E-06	best case
C109123	BH1	2.29-2.9	Silt and Clay	40	1.62E-08	best case
C109123	BH2	10.67-11.28	Gravel	4	1.98E-05	
C109123	average				9.90E-06	worst case
B109133	BH1	3.66-4.57	Clay and Silt	51	1.84E-09	best case
B109133	BH2	0.25-0.6	Sand and Gravel	3	2.41E-05	
B109133	BH2	8.89-9.14	Silt	11	4.97E-06	
B109133	average				9.69E-06	worst case (used for B109134 as well)

Location	Borehole	Sample Depth (m)	Sample Description	Clay Percentage (%<0.002 mm)	Hydraulic Conductivity (m/s)	Dewatering Calculations
B109134	BH1	3.05-3.66	Silt and Clay	39	1.97E-08	best case

Hydraulic conductivities used for the dewatering calculations are also noted in the above table.

3 DEWATERING ASSESSMENT

Potential construction dewatering rates was assessed for the proposed new bridges. Select general arrangement design drawings are provided in **Appendix A**.

Construction dewatering rates have been calculated using the methodology presented in the Construction Industry Research and Information Association (CIRIA) (Somerville ,1986) and Powers et al. (2007). For the overhead structure the method of Powers et al. (2007) was used which is for dewatering of a large cylindrical excavation into an unconfined aquifer. Even though the actual excavation will be likely be rectangular in shape, this equation will provide a reasonably accurate calculation of construction dewatering rates if the area (and radius) of the circle excavation is the same as the actual area covered by the planned excavation in a square shape. The following assumptions were made for all the dewatering calculations:

The following assumptions were made for all the dewatering calculations:

- Excavations will be into an unconfined aquifer with uniform hydraulic properties;
- Groundwater is recharged at a distance beyond the calculated zone of influence;
- Excavation dimensions used in these calculations are based on assumed excavation dimensions as interpreted from construction design drawings and typical working conditions;
- The depth to groundwater is based on 2 year surface water elevation worst case and the September 2017 surface water elevation for best case or the estimated zone of wet to saturated zone, which ever is higher;
- The bottom of excavation is interpreted from construction design drawings plus 0.5m;
- The bottom of aquifer is based on the boreholes;
- The best case calculated dewatering rate is based on the most applicable hydraulic conductivity from grain size analysis based on relevant soil samples; and
- The worst case calculated dewatering rate is based on the most applicable maximum calculated hydraulic conductivity from grain size analysis based on relevant soil samples.

A zone of influence (ZOI) represents the area where groundwater levels may be temporarily affected by dewatering activities as a result of groundwater withdrawal. For Somerville (1986) the ZOI is dependent on the hydraulic conductivity, the type of aquifer and the amount by which the water level is to be lowered. Dewatering results and the respective ZOIs are summarized below in **Table 14**, and the attached **Table 10, 11, 12 and 13** provides the detailed dewatering calculations. **Figure 6** show the calculated worst case zone of influences with 2:1 Factor of Safety.

Table 14: Dewatering Calculations Summary

Source #	Source Name	Best Case Calculated Dewatering Rate	Worst Case Calculated Dewatering Rate	Worst Case with 2:1 Factor of Safety Calculated Dewatering Rate	Calculated Worst Case with 2:1 Factor of Safety Zone of Influence
		(L/day)	(L/day)	(L/day)	(m)
1	B109132 West Abutment	17,002	48,544	97,088	45
2	B109132 East Abutment	17,056	48,656	97,311	45

Source #	Source Name	Best Case Calculated Dewatering Rate	Worst Case Calculated Dewatering Rate	Worst Case with 2:1 Factor of Safety Calculated Dewatering Rate	Calculated Worst Case with 2:1 Factor of Safety Zone of Influence
		(L/day)	(L/day)	(L/day)	(m)
3	C109123 West Abutment	874	51,312	102,623	34
4	C109123 East Abutment	869	51,144	102,288	34
5	B109133 West Abutment	346	66,662	133,323	41
6	B109133 East Abutment	346	66,662	133,323	41
7	B109134 West Abutment	970	53,831	107,663	37
8	B109134 East Abutment	970	53,831	107,663	37
Site Total		38,433	398,250	796,500	

3.1 STORM WATER

Rain and snow that accumulates in the excavation will need to be handled during construction. To predict the effects of storm water, a simple estimate was calculated based on the geometry of the planned excavation and a 25 mm and 50 mm precipitation event in 24 hours. It is estimated that a maximum of 9,800 L/day of water would require handling for a 25 mm precipitation event and 19,600 L/day would require handling for a 50 mm precipitation event the proposed construction based on all eight (8) dewatering sources (all lengths and widths were estimated based on design drawings). It is recommended that this capacity be included for the handling of large precipitation events in order to keep the excavation area relatively dry and stable. The following **Table 15** provides a summary of individual storm water excavation volume estimates.

Table 15: Storm Water Volume Estimates

Source #	Source Name	Excavation Length (m)	Excavation Width (m)	Precipitation	Storm Water Volume	Precipitation	Storm Water Volume
				(mm/day)	(L/day)	(mm/day)	(L/day)
1	B109132 West Abutment	17.8	7.7	25	3,427	50	6,853
2	B109132 East Abutment	17.9	7.7	25	3,446	50	6,892
3	C109123 West Abutment	13.8	3.5	25	1,208	50	2,415
4	C109123 East Abutment	13.7	3.5	25	1,199	50	2,398

Source #	Source Name	Excavation Length (m)	Excavation Width (m)	Precipitation	Storm Water Volume	Precipitation	Storm Water Volume
				(mm/day)	(L/day)	(mm/day)	(L/day)
5	B109133 West Abutment	13.6	3.5	25	1,190	50	2,380
6	B109133 East Abutment	13.6	3.5	25	1,190	50	2,380
7	B109134 West Abutment	14.0	3.5	25	1,225	50	2,450
8	B109134 East Abutment	14.0	3.5	25	1,225	50	2,450
Site Totals					14,109		28,217

Based on the calculated construction groundwater dewatering rates a water taking Environmental Activity and Sector Registry (EASR) is recommended for the entire 4 bridge project.

As per O. Reg. 63/16 Part III 7. (5) Subsection (1) does not apply in respect of the taking of ground water in relation to one or more dewatered work areas within a construction site if,

(a) with respect to an area of influence that does not overlap with another area of influence, the taking on any single day from that area of influence is more than 400,000 litres of ground water per day; or

(b) with respect to an area of influence that overlaps with one or more other areas of influence, the combined volume of ground water taken from the overlapping areas of influence on any single day is more than 400,000 litres of ground water per day. O. Reg. 300/21, s. 9 (4).

Therefore **one EASR can be obtained for the entire project** provided no more than 400,000L/day is dewatered. The 4 bridge ZOIs (including both the east and west abutments) do not overlap as shown on attached **Figure 6**.

The EASR must be obtained prior to the start of construction dewatering to accommodate all construction groundwater dewatering anticipated to be required for this project. Storm water discharge quality would also be subject to the monitoring requirements of the EASR. An environmental monitoring and mitigation plan to be implemented during construction activities, including all dewatering operations, is provided in **Section 5**.

3.2 DEWATERING METHODS AND DISCHARGE LOCATIONS

The task of determining dewatering methods and discharge management is the responsibility of the Contractor. As indicated; however, an environmental management plan will be established and implemented, as per **Section 5** of this report, in order to ensure that surrounding properties and municipal infrastructure is protected. The discharge report as per Ontario Regulation 63/16 is addressed in **Section 5**.

4 IMPACT ON RECEPTORS

4.1 GEOTECHNICAL CONSIDERATIONS

The geotechnical investigation conclusions and recommendations are provided in the CMT Engineering Inc. (2021) reports, provided in attached **Appendix C. A dewatering settlement analysis must be completed if a water taking EASR is requested.**

4.2 TEMPORARY CONSTRUCTION IMPACTS

Temporary construction dewatering is anticipated to be required at the excavations. Once these items are constructed, construction dewatering will no longer be required, and groundwater levels will return to pre-construction conditions.

4.2.1 NATURAL ENVIRONMENT IMPACTS

No natural environment impacts are anticipated as the dewatering is anticipated to be temporary and provided the recommended Monitoring, Mitigation and Discharge Plan is adhered to.

4.2.2 PRIVATE WELL USER IMPACTS

No impact is anticipated for nearby private water well users, as the dewatering is anticipated to be minor and temporary.

4.2.3 SOURCE WATER PROTECTION IMPACTS

No Source Water Protection impacts are anticipated at the site as dewatering is anticipated to be temporary and no source water protection areas are located in the vicinity of the site.

4.2.4 CONTAMINANT MOVEMENT IMPACTS

No adverse contaminant movement is anticipated to be a result of this dewatering as the dewatering rates are anticipated to be temporary. However, the monitoring, mitigation and discharge plan outlined in **Section 5** should be implemented during the construction period.

4.3 BEST PRACTISES

During any phase of the construction activities, due care should be exercised to avoid fuel, lubricant and fluid spills, including concrete wash water and dewatering discharge water in contact with curing concrete. Spill and contamination prevention practices should be implemented to avoid potential environmental hazards and clean-ups. Where practical, activities such as refueling should not be undertaken in areas with high susceptibility to groundwater contamination, as well as within 30 m of surface watercourses.

5 MONITORING, MITIGATION AND DISCHARGE PLAN

The following environmental monitoring, mitigation and discharge measures will need to be conducted during construction for both groundwater and stormwater:

- 1 If the taking of water is intended to continue for more than 365 days, the person proposing to engage in the activity has given written notice that includes the information set out below to the following:
 - a the upper-tier and lower-tier municipalities or the single-tier municipality, as the case may be, within whose area of jurisdiction the proposed water taking is located, and
 - b any conservation authority within whose area of jurisdiction the proposed water taking is located.
 - i The name of the person proposing to engage in the activity.
 - ii The dates on which the activity is to occur.
 - iii An identification of the method of transfer or discharge referred to in paragraph 4 of subsection (2) that is to be implemented.
 - iv If the method of transfer or discharge referred to in paragraph 3 is discharge to land, the location of the discharge. O. Reg. 300/21, s. 10.
- 2 Work within or immediately adjacent to any body of water or regulated area, including construction dewatering, sediment and erosion controls, will occur in accordance too any applicable permits as administered by applicable regulatory agencies, including the Ontario Ministry of the Environment, Conservation and Parks.
- 3 Construction dewatering rates (active pumping only) will be documented on a daily basis on all days when pumping of water or any type of dewatering occurs, at all sources, during all works, through co-operation with the site Contract Administrator. Construction dewatering rates through active pumping will be measured using a flow metre. Daily dewatering rates will be provided to the Contract Administrator on a monthly basis and reported annually to the MECP by March 31st. **Dewatering discharge rates cannot exceed 400,000 L/day.**
- 4 **A dewatering discharge sample must be collected prior to discharge at each source** to confirm compliance to the applicable water quality criteria described below. **Additional discharge samples must be collected if a change in visible water quality is observed** (sheen, odour, color).
- 5 Construction period dewatering discharge water, including groundwater seepage collected through passive drainage, will be managed and released as follows:
 - a It is expected that the construction dewatering discharge will be treated on-site to meet PWQO (1999) including sufficient removal of suspended sediment, and be released to the Conestoga River, 30 m from the watercourse;
 - b If the construction dewatering discharge does not mee PWQO it is expected to meet O. Reg. 153/04 (as amended) Table 2 criteria, including sufficient removal of suspended sediment, and the water will be released to ground surface, that is not within an area identified as WHPA-A, to re-infiltrate in such a manner to avoid excessive erosion scouring;
 - i As per O.Reg. 63/16 Section 8 (5) (4) If the recommended method of discharge is discharge to surface land not enclosed in a building or discharge to a storm sewer the following must be completed **by a qualified person retained by the contractor**:
 - (1) a statement that, in the opinion of the person who prepared the discharge report, the discharge of the ground water and storm water will not cause an adverse effect to the environment;
 - (2) an identification of any treatment and control measures required to minimize erosion, flooding, scouring and sedimentation from occurring as a result of the discharge; and

- (3) an identification of any treatment and control measures required to address the quality of the discharge to ensure that the discharge will not cause an adverse effect to the environment.
- c Should the water not meet the criteria, it will be contained and taken off-site to a MECP licensed facility for treatment and disposal.
- 6 In co-operation with the site Contract Administrator, the clarity, presence of sheen, odour and/or precipitate, and turbidity will be recorded at least twice daily for the dewatering discharge at each source. Visual observations will be reported to the Contract Administrator on a monthly basis. With respect to any groundwater or storm water, or both, that is discharged to land, there shall be no visible petroleum hydrocarbon film or sheen present.
- 7 With respect to any groundwater or storm water, or both, that is discharged to land that is within 30 m of a water body, turbidity of the discharge shall not exceed eight Nephelometric Turbidity Units above the background levels of the nearest water body.
- 8 Any groundwater/surface water interference complaints or incidents will be promptly investigated. An alternative water supply will be provided to any water user in the area whose water supply has been adversely affected by construction activities (dewatering, chemical spills, sediment release, rock breaking and pile driving). Nearby residents will be provided with a responsible contact, to which any complaints may be reported, throughout the construction period.
- 9 Erosion and Sediment Control (ESC) best practices will be applied during the construction, clean-up, and restoration, to prevent sediment-laden runoff from entering any surface water course and/or designated environmentally sensitive area. **A comprehensive ESC Plan will be developed and presented for review and approval prior to the start of construction.** Any erosion, flooding, scouring, sediment and total suspended solids control measures identified in the discharge report shall be used, operated and maintained in a manner that satisfies the recommendations of the manufacturer of the control measures or as directed in the discharge report if no such recommendations exist. All control measures referred to above and all materials collected or trapped by those measures shall be recovered and disposed of when the person is no longer engaging in the activity.
- 10 Vehicle refueling and maintenance will not take place within 30 m of a watercourse, unless done in a specially designed area, and manner, to contain potential leaks or spills.
- 11 Any spills or incidents will be promptly reported and immediately investigated as necessary to protect surrounding water users and natural receptors. **An environmental spills response plan must be established prior to beginning work and shall be promptly implemented as required.**
- 12 If the taking of water is no longer needed, within 30 days after the day the person has ceased to engage in the activity, they shall give notice to the MECP that the water taking is complete by filing that information in the MECP's electronic system. O.Reg. 300/21, s.10.
- 13 A person who engages in the water taking activity shall ensure that each of the following records with respect to the taking of groundwater, storm water or both is created and retained for a period of five years from the day it is required to be created:
- a The dates on which the person engaged in the activity.
 - b For each day on which groundwater, storm water or both was taken, the average rate at which it was taken from each dewatered work area in litres per second.
 - c The volume of groundwater, storm water or both taken from each dewatered work area each day in litres.
 - d A record of the following information with respect to each complaint:
 - i The date and time the complaint was received.
 - ii A copy of the complaint, if it is a written complaint.
 - iii A summary of the complaint, if it is not a written complaint.

- iv A summary of measures taken, if any, to address the complaint.
- e A record of any precipitation on the construction site.
- f A copy of any information or documents that demonstrate written notice was provided in accordance with the protocol set out in a water taking report.
- g A copy of the records related to the monitoring plans referred to in paragraphs 3 and 9 of subsection 9.1 (2).
 - i 9.1(2) 3. A water monitoring plan shall be implemented in accordance with the plan set out in the water taking report, if the applicable circumstances arise.
 - ii 9.1(2) 9. A monitoring plan for the discharge shall be implemented in accordance with the plan set out in the discharge report, if the applicable circumstances arise.

5.1 PROPOSED CONTINGENCY PLAN

If an adverse impact is observed through the monitoring program, a spill occurs, a complaint is received, or if the MECP determines that unacceptable interference is occurring, the following response would need to be initiated:

- 14 All appropriate stakeholders will be notified as required, including the construction manager responsible for onsite activities, the MECP Spills Hotline (1-800-268-6060) and Grand River Conservation Authority;
- 15 Mitigation measures will be initiated to prevent further damage or inconvenience, in consultation with property owners and regulatory agencies, as applicable;
- 16 Water taking/construction may be stopped until the problem is fixed, as circumstances allow;
- 17 If it is determined that the construction work is causing increased level of suspended sediment in treated dewatering discharge water, or site runoff, above the upset limit of eight Nephelometric Turbidity Units, and / or resulting in turbidity levels in downstream surface water which are noticeably higher than background turbidity conditions, the contractor should modify dewatering methodology to correct the problem as necessary. This may be accomplished by adding additional treatments (adding filter bags, sediment traps, Enviro-tanks, etc.) or modifying the discharge methodology (i.e. lower pumping rate, move filter bag location, etc.);
- 18 If water quality of dewatering discharge water is observed to have an unusual appearance or odor, indicative of an adverse impact, dewatering discharge shall be stopped if circumstances allow, the water will be tested to determine the nature of the impact. Appropriate water treatment will be added as necessary, or water will be contained to haul to a suitable off-site and MECP-licensed facility where the water can be treated and discharged;
- 19 During the work program, should any incidents occur resulting in damages to adjacent natural environments, private properties, structures, or infrastructure beyond the construction limits, the damages will be cleaned up / repaired / compensated to the satisfaction of the property owner and / or regulatory agencies as applicable; and
- 20 If it is found that construction activities are causing an adverse impact to a private water well user, or if a complaint is received:
 - a The complaint will be inspected within 24 hours;
 - b Regulatory agencies will be notified (MECP); and
 - c A temporary water supply will be provided to the resident, until either the water supply or quality returns to pre-construction conditions, or it is determined that the issue is not related to construction.

In the event that the adverse water quality or quantity conditions persist beyond three months, a permanent mitigation plan will be developed in co-operation with the property owner, with input from regulatory agencies as required.

6 STANDARD LIMITATIONS

This Report was prepared for the Client, County of Wellington, in accordance with the professional services agreement, solely for their exclusive use to provide an assessment of current environmental conditions in association with the Site. The intended recipient is solely responsible for the disclosure of any information contained in this report. The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report. This limitations statement is considered an integral part of this report.

The Report summarizes WSP's review of available data in accordance with the principal components of the stated regulations, standards and guidelines and the scope, terms and conditions of the contract or proposal to which the Assignment was conducted. No other warranties are either expressed or implied with respect to the professional services provided under the terms of the contract or proposal and represented in this Report. Conditions may exist which were not detected given the nature of the inquiry WSP was retained to undertake with respect to the Site. Additional environmental studies and actions may be recommended.

The Report is based on data and information collected at the time of this Assessment, as stated in the Report. Site use or conditions change and the information and conclusions in the Report may no longer apply following the date of this Report. If any conditions become apparent that differ significantly from that presented in this Report, we request that we be notified to reassess the conclusions and recommendations provided herein. WSP disclaims any obligation to update this Report for conditions that may be identified after the date of this Report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

In evaluating the Site, WSP has relied in good faith on information provided by others, as noted in the Report. WSP has assumed that the information provided is correct and WSP assumes no responsibility for the accuracy, completeness or workmanship of any such information.

The Report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions are based on the Site conditions observed by WSP at the time the work was performed and may include information obtained at specific testing and/or sampling locations. It is recognized that overall conditions can only be extrapolated to an undefined limited area around these testing and sampling locations. The conditions that WSP interprets to exist between testing and sampling points may differ from those that actually exist. The accuracy of any extrapolation and interpretation beyond the sampling locations will depend on natural conditions, the history of Site development and changes through construction and other activities. In addition, analysis has been carried out for the identified chemical and physical parameters only, and it should not be inferred that other chemical species or physical conditions are not present. WSP cannot warrant against undiscovered environmental liabilities or adverse impacts off-Site.

The conclusions presented in this Report are based on Work undertaken by trained professional and technical staff and the reasonable and professional interpretation of the information considered. Conclusions presented in this report should not be construed as legal advice. WSP makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in the Report, including, but not limited to, ownership of any property, or the application of any law to the findings of the Assessment.

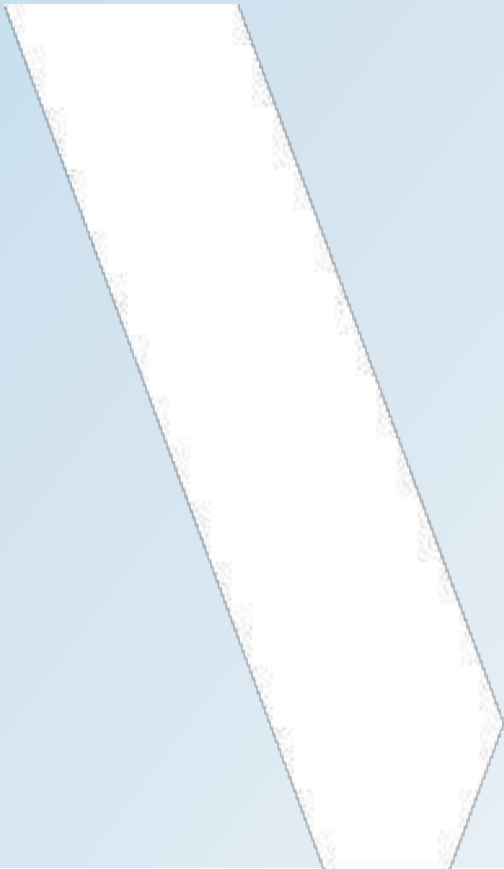
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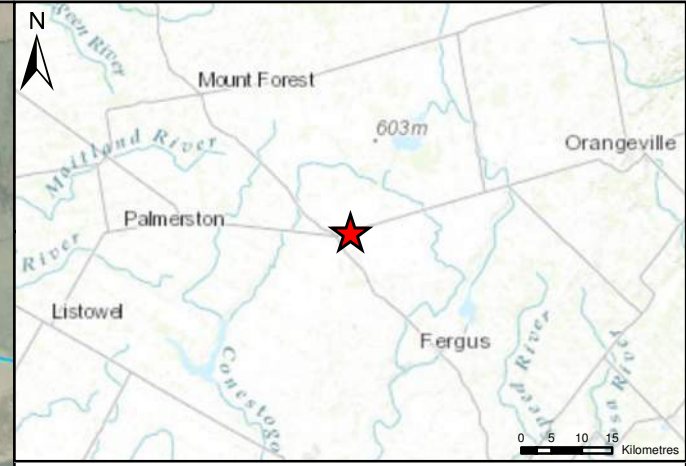
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REFERENCES

- Bradbury, K.R. and M.A. Muldoon (1990). Hydraulic Conductivity Determinations in Unlithified Glacial and Fluvial Materials. In: ground Water and Vadose Zone Monitoring.
- Chapman, L.J. and Putnam, D.F. (1984). The Physiography of Southern Ontario, Ontario Geological Survey Special Volume 2.
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 6, Structure B109132 Wellington Road 109 Arthur, Ontario County of Wellington
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 5, Structure C109123 Wellington Road 109 Arthur, Ontario County of Wellington
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 4, Structure B109133 Wellington Road 109 Arthur, Ontario County of Wellington
- CMT Engineering Inc. (2021) Geotechnical Investigation Reconstruction of Conestogo River Bridge No. 10, Structure B109134 Wellington Road 109 Arthur, Ontario County of Wellington
- ERIS Database Report (2021). Wellington Road 109 – 4 Bridges Wellington Road 109 Arthur ON.
- Government of Canada (2021). Canadian Climate Normals 1981-2010 Station Data Fergus Shand Dam:
https://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?searchType=stnProx&txtRadius=25&selCity=&selPark=&optProxType=custom&txtCentralLatDeg=43&txtCentralLatMin=49&txtCentralLatSec=53&txtCentralLongDeg=80&txtCentralLongMin=30&txtCentralLongSec=46&txtLatDecDeg=&txtLongDecDeg=&stnID=4760&dispBack=0
- GRA (2001). Technical Background Report for the Grand River Fisheries Management Plan Draft Report Prepared for Fisheries and Oceans Canada.
- Lake Erie Region Source Protection Committee, 2022. Grand River Source Protection Area Approved Assessment Report. URL: <https://www.sourcewater.ca/en/source-protection-areas/Grand-River-Assessment-Report.aspx>
- Ontario Ministry of Environment, Conservation and Parks (2022). MOECC Approval Types: <http://www.gisapplication.lrc.gov.on.ca/AccessEnvironment/IndexAccEnv.html?viewer=AccessEnvironment.AE&locale=en-US>
- Ontario Ministry of Environment, Conservation and Parks (2022). Map: Permits to take water: <https://www.ontario.ca/environment-and-energy/map-permits-take-water>
- Ontario Ministry of Environment, Conservation and Parks (2021). Map: Well records: <https://www.ontario.ca/environment-and-energy/map-well-records>
- Ontario Ministry of Environment, Conservation and Parks (2022). Map: Provincial Groundwater Monitoring Network: <https://www.ontario.ca/environment-and-energy/map-provincial-groundwater-monitoring-network>
- Ontario Ministry of Environment, Conservation and Parks (2022). Map: Provincial (Stream) Water Quality Monitoring Network: <https://www.ontario.ca/environment-and-energy/map-provincial-stream-water-quality-monitoring-network>
- Ontario Ministry of Environment and Energy (1994, Reprinted 1999). Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ontario Ministry of Environment and Energy.
- Powers, Corwin, Schmall, and Kaeck. (2007). Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition. John Wiley and Sons, Inc. Hoboken, New Jersey.
- Somerville (1986). Control of Groundwater for Temporary Works. Construction Industry Research and Information Association Volume 113.
- Source Water Protection Threats (2021). URL: <https://threats.swpip.ca/Threats/Search>

FIGURES





LEGEND:

- ★ SITE LOCATION
- CULVERT CROSSINGS
- STUDY AREA
- WATERCOURSES

TITLE: **SITE LOCATION**

PROJECT: HYDROGEOLOGICAL INVESTIGATION
WELLINGTON ROAD 109 BETWEEN
HIGHWAY 6 AND SIDEROAD 7
ARTHUR, ONTARIO

CLIENT: WELLINGTON COUNTY

	PROJECT NO.:	REVIEWED BY:
	17M-01271-02	PH
	DATE:	FIGURE:
	NOVEMBER 2021	1





LEGEND:

- CULVERT CROSSINGS
- STUDY
- WATERCOURSES
- TOPOGRAPHIC CONTOURS
- WOODED
- WATERBODIES
- PROVINCIALY SIGNIFICANT WETLANDS

THERMAL REGIME

- WARM
- UNKNOWN

TITLE:
NATURAL FEATURES AND TOPOGRAPHY

PROJECT: HYDROGEOLOGICAL INVESTIGATION
WELLINGTON ROAD 109 BETWEEN
HIGHWAY 6 AND SIDEROAD 7
ARTHUR, ONTARIO

CLIENT:
WELLINGTON COUNTY

	PROJECT NO.:	REVIEWED BY:
	17M-01271-02	PH
	DATE:	FIGURE:
	NOVEMBER 2021	2





LEGEND:

- CULVERT CROSSINGS
 - STUDY AREA
 - WATERCOURSES
 - TOPOGRAPHIC CONTOURS
- QUATERNARY GEOLOGY**
- TAVISTOCK TILL

TITLE:		
QUATERNARY GEOLOGY		
PROJECT: HYDROGEOLOGICAL INVESTIGATION WELLINGTON ROAD 109 BETWEEN HIGHWAY 6 AND SIDEROAD 7 ARTHUR, ONTARIO		
CLIENT: WELLINGTON COUNTY		
	PROJECT NO.: 17M-01271-02	REVIEWED BY: PH
	DATE: NOVEMBER 2021	FIGURE: 3





LEGEND:

- CULVERT CROSSINGS
- STUDY
- ▲ PERMIT TO TAKE WATER
- ▲ ENVIRONMENTAL ACTIVITY AND SECTOR REGISTRATIONS (EASR)

MECP WATER WELL RECORDS

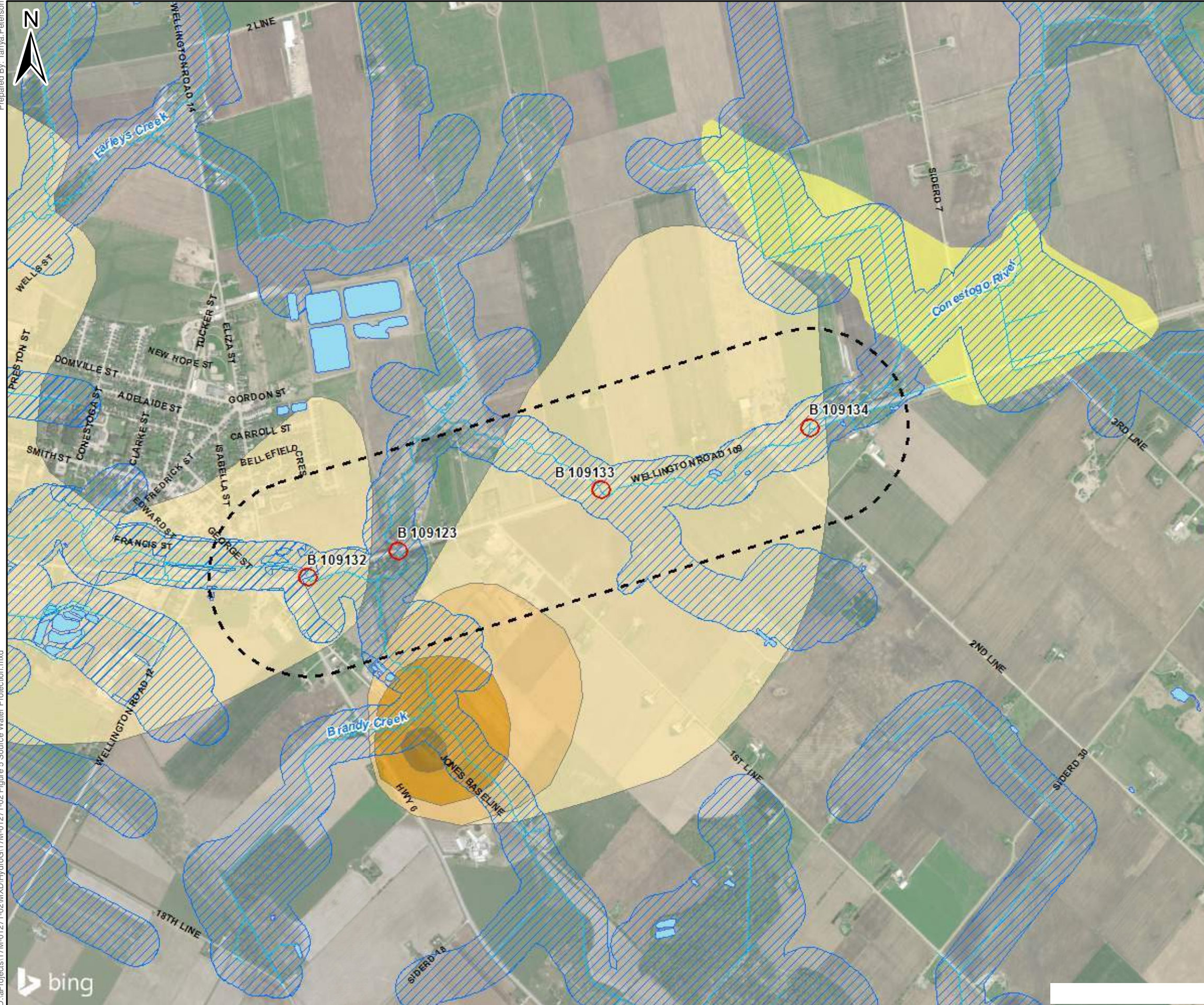
- ⊕ WATER SUPPLY
- ⊕ MONITORING
- ⊕ ABANDONED
- ⊕ OBSERVATION WELLS
- ⊕ UNKNOWN USE
- WATERCOURSES
- WATERBODIES
- PROVINCIALLY SIGNIFICANT

TITLE: **MECP WATER WELL RECORDS**

PROJECT: HYDROGEOLOGICAL INVESTIGATION
WELLINGTON ROAD 109 BETWEEN
HIGHWAY 6 AND SIDEROAD 7
ARTHUR, ONTARIO

CLIENT: WELLINGTON COUNTY

	PROJECT NO.: 17M-01271-02	REVIEWED BY: PH
	DATE: NOVEMBER 2021	FIGURE: 4



- LEGEND:
- CULVERT CROSSINGS
 - STUDY AREA
 - WATERCOURSES
 - WATERBODIES
 - WHPA A
 - WHPA B
 - WHPA C
 - WHPA D
 - INTAKE PROTECTION ZONE 3
 - SIGNIFICANT GROUNDWATER RECHARGE AREA

TITLE:			SOURCE WATER PROTECTION		
PROJECT:			HYDROGEOLOGICAL INVESTIGATION WELLINGTON ROAD 109 BETWEEN HIGHWAY 6 AND SIDEROAD 7 ARTHUR, ONTARIO		
CLIENT:			WELLINGTON COUNTY		
	PROJECT NO.:	17M-01271-02	REVIEWED BY:	PH	
	DATE:	NOVEMBER 2021	FIGURE:	5	



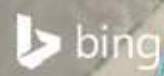
- LEGEND:
- CULVERT CROSSINGS
 - WATERCOURSES
 - WATERBODIES
 - ZONE OF INFLUENCE

TITLE:
**WORST CASE WITH 2:1 FACTOR OF SAFETY
 ZONES OF INFLUENCE**

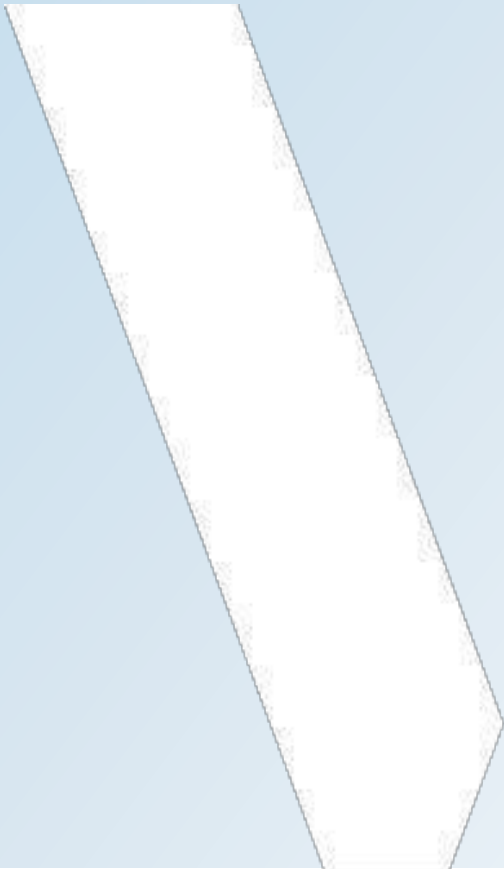
PROJECT: HYDROGEOLOGICAL INVESTIGATION
 WELLINGTON ROAD 109 BETWEEN
 HIGHWAY 6 AND SIDEROAD 7
 ARTHUR, ONTARIO

CLIENT:
 WELLINGTON COUNTY

	PROJECT NO.: 17M-01271-02	REVIEWED BY: PH
	DATE: NOVEMBER 2022	FIGURE: 6



TABLES



Well ID	Date Completed	Well Use	Well Depth (m)	Well Type	Depth to Bedrock (m)	Static Groundwater Level (mbgs)	Groundwater Depth (mbgs)
6700002	28-Jun-50	Municipal Water Supply	93.0	Bedrock	48.5	9.1	86.9
6701957	13-Aug-52	Domestic and Livestock Water Supply	150.9	Bedrock	82.0	23.8	149.7
6701958	17-Aug-50	Domestic Water Supply	30.8	Overburden		10.4	30.8
6701959	21-Apr-56	Domestic Water Supply	86.3	Bedrock	67.1	8.5	61.0
6701960	10-May-56	Domestic Water Supply	73.8	Bedrock	72.5	16.5	73.8
6702882	15-Oct-52	Commercial Water Supply	65.8	Bedrock	61.0	12.2	65.8
6702883	24-Oct-56	Domestic Water Supply	74.4	Bedrock	69.5	21.3	74.4
6702902	30-Jan-64	Domestic and Livestock Water Supply	67.7	Overburden		18.3	54.9
6702999	25-May-57	Domestic and Livestock Water Supply	82.6	Bedrock	82.3	6.1	82.6
6703000	9-Mar-65	Domestic and Livestock Water Supply	98.8	Bedrock	73.8	12.2	96.0
6703001	21-May-63	Domestic and Livestock Water Supply	86.6	Bedrock	74.1	13.1	83.8
6703002	24-Jun-51	Domestic and Livestock Water Supply	91.1	Bedrock	68.0	7.3	90.8
6703003	9-Feb-62	Domestic and Livestock Water Supply	99.1	Bedrock	54.9	8.5	91.4
6703273	9-Jul-68	Domestic Water Supply	66.1	Overburden		20.7	66.1
6703367	2-Jun-69	Water Supply	78.3	Bedrock	68.6	14.6	75.6
6703483	1-Dec-69	Domestic Water Supply	65.5	Bedrock	59.7	6.7	64.0
6704343	7-Sep-72	Domestic Water Supply	68.0	Overburden		15.5	67.1
6705119	17-Jun-74	Domestic Water Supply	54.9	Overburden		11.6	54.9
6705263	16-Aug-74	Domestic and Livestock Water Supply	75.0	Bedrock	67.1	9.1	75.0
6705781	1-Oct-75	Commercial Water Supply	62.5	Overburden		14.9	61.9
6705948	12-Dec-75	Domestic and Livestock Water Supply	88.7	Bedrock	74.4	11.6	80.2
6706459	6-Jul-77	Domestic Water Supply	56.7	Overburden		10.1	56.7
6706605	3-Dec-77	Domestic Water Supply	63.4	Overburden		17.7	27.4
6706945	23-Aug-78	Domestic Water Supply	109.7	Overburden		18.0	97.5
6708240	30-May-85	Domestic and Livestock Water Supply	77.7	Bedrock	63.7	9.1	74.7
6708594	28-Nov-86	Domestic Water Supply	66.4	Overburden		17.7	63.4
6708747	16-Apr-87	Domestic Water Supply	64.0	Overburden		8.5	57.9
6708870	8-Jul-87	Domestic Water Supply	64.0	Bedrock	57.3	4.6	64.0
6709272	15-Jun-88	Livestock Water Supply	71.3	Bedrock	65.8	7.3	71.3
6709487	4-Oct-88	Domestic Water Supply	13.4	Overburden			5.2
6709740	4-May-89	Domestic Water Supply	65.8	Overburden		15.8	62.8
6710271	25-Apr-90	Domestic Water Supply	87.5	Bedrock	72.5	11.9	87.5
6712213	9-Apr-97	Domestic Water Supply	67.1	Bedrock	53.3	7.0	47.5
6712214	10-Apr-97	Abandoned	34.1	Overburden			
6712367	2-Oct-97	Domestic Water Supply	59.7	Overburden		13.7	57.9
6712920	26-Dec-98	Domestic Water Supply	59.1	Overburden		24.4	59.1
6712922	11-Dec-98	Commercial Water Supply	46.6	Overburden		8.2	17.1
6713103	4-Oct-99	Domestic Water Supply	78.0	Bedrock	71.9	8.8	75.6
6715657	30-Jan-06	Abandoned					
6715824	26-Jun-06	Monitoring	4.9	Overburden			
6715886	30-Aug-06	Abandoned					
6715955	5-Sep-06	Domestic Water Supply	65.8	Overburden		21.0	64.0
6716013	2-Oct-06	Domestic Water Supply	216.0	Overburden		20.4	200.0
7042081	30-Mar-06	Monitoring	4.0	Overburden			
7044990	7-Feb-07	Domestic Water Supply	24.4	Overburden		13.7	22.6
7044991	12-Jan-07	Abandoned	103.6			8.5	
7052875	13-Nov-07	Abandoned					
7052876	13-Nov-07	Abandoned					
7123321	4-May-09	Monitoring	5.4				
7123322	4-May-09	Monitoring	4.8				
7123323	4-May-09	Monitoring	3.6				
7123324	4-May-09	Monitoring	4.2				
7149905	20-May-10	Abandoned					
7158779	3-May-10	Abandoned					
7161021	9-Mar-11	Monitoring	4.8				
7161022	9-Mar-11	Monitoring	5.1				
7161023	9-Mar-11	Monitoring	6.0				
7163571	17-May-11	Unknown					
7163864	11-May-11	Monitoring	4.6				4.6
7171480	20-Oct-11	Unknown					
7183961	21-Jun-12	Abandoned					
7187029	9-Jul-12	Unknown				23.8	
7187196	22-Aug-12	Abandoned					
7210891	9-Oct-13	Monitoring	4.6				
7210892	9-Oct-13	Monitoring	4.6				
7210893	9-Oct-13	Monitoring	4.6				
7210895	9-Oct-13	Monitoring	4.6				
7220861	13-May-14	Monitoring	6.1				
7228721	17-Jun-14	Unknown					
7263086	25-Apr-16	Unknown					
7263957	29-Apr-16	Unknown					
7276127	23-Jun-16	Unknown					
7276934	9-Nov-16	Monitoring	4.3				
7276935	9-Nov-16	Monitoring	4.3				
7281679	24-Jan-17	Monitoring	4.6				2.4
7281837	25-Jan-17	Monitoring	4.6				
7331056	10-Jan-19	Monitoring	6.0				
7331057	10-Jan-19	Monitoring	10.6				
7331058	10-Jan-19	Monitoring	6.0				
7331059	10-Jan-19	Monitoring	6.6				
7331060	10-Jan-19	Monitoring	7.6				
7360349	29-Apr-20	Monitoring	6.1				
7360352	29-Apr-20	Monitoring	6.1				
7363656	24-Jul-20	Abandoned					

Table 5: ERIIS Properties
Wellington Road 109 Schedule C Municipal Class Environmental Assessment

ERIS ID	Address	ERIS Records	Description
6	7580 First Line	1 GEN 2 PES	Inorganic Waste
22	Arthur	2 CA	Municipal Sewage
23	321 Smith St	1 SPL	4 m3 Wastewater to watercourse (1998)
24	321 Smith St	26 SPL	3 Wastewater/sewage to watercourse (1988); 3 900L Sewage to ground/watercourse (1988); 2 2000L sewage to ground/watercourse (1988); 2 1800L sewage to watercourse/ground (1988); 15750L sewage to watercourse (1988); 11000L sewage to watercourse (1989); 2 sewage to watercourse (1989); 5000L sewage to ground (1989); 150000L sewage to watercourse (1989); 10m3 wastewater to watercourse (1990); 4 sewage/wastewater to watercourse (1990); non-disinfected effluent to watercourse (1991); poor quality effluent to watercourse (1992); sewage to watercourse (1992); 4,5m3 sewage to watercourse (1992); sewage to watercourse (2001)
34	8194 County Road 109	2 SCT	Manufacturing
49	8006 Wellington Rd 109	13 DTNK 12 FST 1 FSTH 1 GEN 5 RST	4 gasoline tanks and 1 diesel tank and Light Fuels
60	7643 Hwy 6	3 GEN 3 RST	Light Fuels
61	Lot 23 Con B	2 FSTH 6 GEN 1 PRT	Waste Oil & Lubricants, Diesel tank
62	Hwy 6 & 9 Corners	1 FSTH 2 PRT 1 RST	4 gasoline tanks
69	7634 Hwy 6	1 CA 1 ECA	Waste Management System
73	231 Eliza St	3 GEN	Pathological wastes, photoprocessing wastes
74	George St (Hwy 6) Bridge	1 CA 7 SPL	Municipal Sewage , 454L diesel (1995); 15kh chicken (1998); 200kg chicken (1989); 200L gasoline (1991); gasoline (1991); methane (2007); 10L gas (2008)
75	Wellington County Rd 109 & Hwy 6	1 HINC	natural gas (2007)
93	141 Eliza St	1 GEN	Inorganic laboratory chemicals, light fuels, organic laboratory chemicals and waste compressed gases
97	7994 Wellington RD 109	1 FST 1 SPL	0.5L gasoline (2020)
99	131 Catherine St	1 FSTH 3 PRT 1 RST	3 gasoline tanks and 1 diesel tank
101	7999 Wellington Rd 109	1 PINC 1 SPL	natural gas (2017)
104	7995 Wellington Rd 109	1 SPL	motor oil (2019)
110	270 George St	1 PINC	pipeline damage (2021)

Table 6: Borehole Logs Summary
Wellington Road 109 Schedule C Municipal Class Environmental Assessment

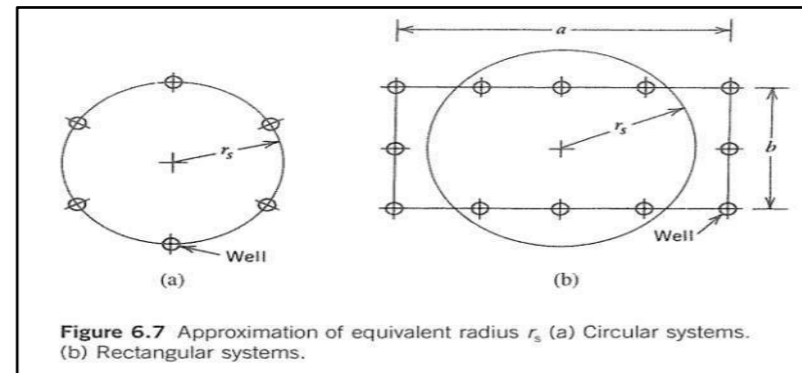
Location	Borehole	Completion Date	Ground Surface (masl)	Asphalt	Fill (Granular, Concrete, Silty Sand)			Topsoil			Sandy Silt Till			Silt and Clay			Silt and Clay Till			Gravel			Silt		
				Depth / thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)	Depth (m)	Elevation Depth (masl)	Thickness (m)
B109132	BH1	9-Aug-21	452.76	0.125	2.29	450.47	2.165	3.34	449.42	1.05	9.75	443.01	6.41												
B109132	BH2 ⁽¹⁾	9-Aug-21	452.69	0.33	1.18	451.51	0.85	3.05	449.64	1.87	9.75	442.94	6.7												
C109123	BH1	9-Aug-21	457.87	0.2	2.29	455.58	2.09							6.58	451.29	4.29	11.28	446.59	4.7						
C109123	BH2 ⁽²⁾	10-Aug-21	457.86	0.175	4.34	453.52	4.165	3.81	454.05	-0.53				4.57	453.29	0.76	10.67	447.19	6.1	11.28	446.58	0.61			
B109133	BH1	10-Aug-21	461.92	0.125	0.84	461.08	0.715	2.39	459.53	1.55				9.75	452.17	7.36									
B109133	BH2	11-Aug-21	461.90	0.33	2.29	459.61	1.96							8.89	453.01	6.6							9.75	452.15	0.86
B109134	BH1	11-Aug-21	465.00	0.48	1.04	463.96	0.56	1.98	463.02	0.94				5.33	459.67	3.35	8.23	456.77	2.9						
B109134	BH2	11-Aug-21	464.97	0.43	1.52	463.45	1.09	2.29	462.68	0.77				6.1	458.87	3.81	8.23	456.74	2.13						

Notes
 (1) silty sand fill below topsoil 3.05 to 3.33
 (2) alternating fill and topsoil units

Radius of Influence Calculation:

$$R_o = [1750(H - h_w)\sqrt{K}] \text{ (Somerville, 1986)}$$

Equation Schematic Diagrams (Powers et al., 2007):

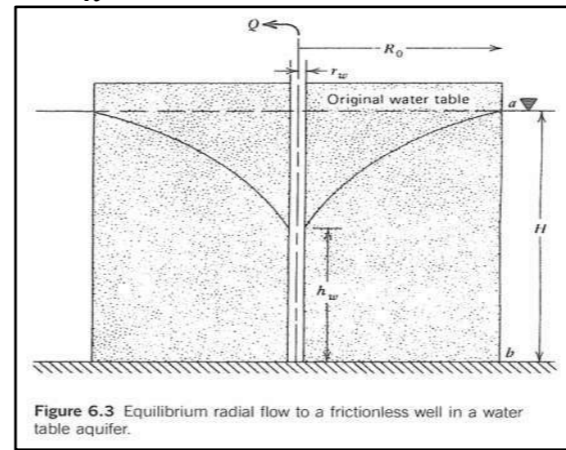


Radius of Large Well Calculation:

$$r_s = \frac{a+b}{\pi} \text{ (Powers et al., 2007)}$$

Dewatering Rate Calculation:

$$Q_w = \left[\frac{K(H^2 - h_w^2)}{5.31 \times 10^{-6} \ln(R_o + r_s)/r_s} \right] \text{ (Powers et al., 2007)}$$



Equation Variables	Variables Definition	Variables Units	Dewatering Parameters		Notes
			B109132 West Abutment	B109132 East Abutment	
Inputs All Scenarios					
Constant	Constant		5.31E-06	5.31E-06	Powers et al. (2007)
a	Excavation Length	m	17.8	17.9	Approximated based on design drawings
b	Excavation Width	m	7.7	7.7	Approximated based on design drawings
	Ground Surface	m AMSL	450.0	450.0	Approximated based on design drawings
	Excavation Depth	m BGS	4.2	4.2	Approximated based on design drawings plus 0.5m
	Excavation Base Elevation	m AMSL	445.8	445.8	Approximated based on design drawings plus 0.5m
	Aquifer Depth	m BGS	7.1	7.1	Based on boreholes
	Aquifer Base Elevation	m AMSL	442.9	442.9	Based on boreholes
h_w	Height of drawdown above aquifer base	m	2.9	2.9	Calculated
r_s	Radius of circle equivalent to area of the open trench	m	8.1	8.1	Calculated
Inputs Best Case Scenario					
K	Hydraulic Conductivity	m/s	2.13E-06	2.13E-06	Based on grain size analysis average
	Groundwater Depth	m BGS	2.50	2.50	Based on surface water level Sept 2017
	Groundwater Elevation	m AMSL	447.50	447.50	Based on surface water level Sept 2017
H	Height of groundwater above aquifer base	m	4.6	4.6	Calculated
$H-h_w$	Groundwater drawdown	m	1.7	1.7	Calculated
Inputs Worst Case Scenario					
K	Hydraulic Conductivity	m/s	2.75E-06	2.75E-06	Based on grain size analysis maximum
	Groundwater Depth	m BGS	-2.20	-2.20	Based on estimated zone of wet to saturated zones
	Groundwater Elevation	m AMSL	452.20	452.20	Based on estimated zone of wet to saturated zones
H	Height of groundwater above aquifer base	m	9.3	9.3	Calculated
$H-h_w$	Groundwater drawdown	m	6.4	6.4	Calculated
Outputs Best Case Scenario					
R_o	Radius of Influence	m	4	4	Calculated
$R_o + r_s$	Zone of Influence	m	12	12	Calculated
Q	Dewatering Rate	L/min	12	12	Calculated
Q	Dewatering Rate	L/day	17,002	17,056	Calculated
Outputs Worst Case Scenario					
R_o	Radius of Influence	m	19	19	Calculated
$R_o + r_s$	Zone of Influence	m	27	27	Calculated
Q	Dewatering Rate	L/min	34	34	Calculated
Q	Dewatering Rate	L/day	48,544	48,656	Calculated
Outputs Worst Case with 2:1 Factor of Safety Scenario					
R_o	Radius of Influence	m	37	37	Calculated
$R_o + r_s$	Zone of Influence	m	45	45	Calculated
Q	Dewatering Rate	L/min	67	68	Calculated
Q	Dewatering Rate	L/day	97,088	97,311	Calculated

Assumptions for Construction Dewatering:

Construction dewatering rates are calculated as per Powers et al. (2007) and Somerville (1986), based on groundwater inflow to a large diameter circular excavation, with equivalent area as per the roughly square excavation shape, in an unconfined aquifer, as required for this project.

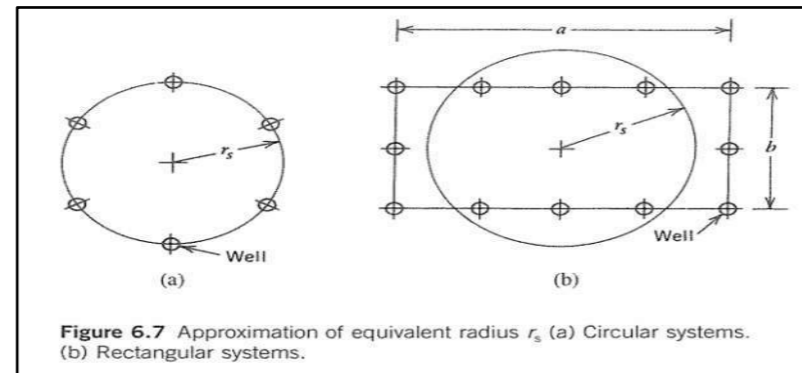
References:

Powers, Corwin, Schmall, and Kaeck., 2007. Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition. John Wiley and Sons, Inc. Hoboken, New Jersey.
Somerville, 1986. Control of Groundwater for Temporary Works. Construction Industry Research and Information Association Volume 113.

Radius of Influence Calculation:

$$R_o = [1750(H - h_w)\sqrt{K}] \text{ (Somerville, 1986)}$$

Equation Schematic Diagrams (Powers et al., 2007):

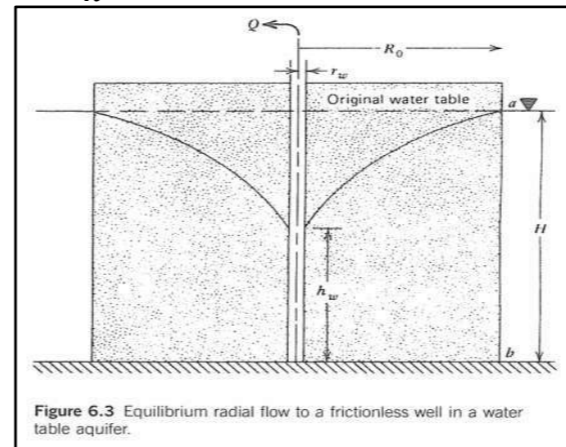


Radius of Large Well Calculation:

$$r_s = \frac{a+b}{\pi} \text{ (Powers et al., 2007)}$$

Dewatering Rate Calculation:

$$Q_w = \left[\frac{K(H^2 - h_w^2)}{5.31 \times 10^{-6} \ln(R_o + r_s)/r_s} \right] \text{ (Powers et al., 2007)}$$



Equation Variables	Variables Definition	Variables Units	Dewatering Parameters		Notes
			B109123 West Abutment	B109123 East Abutment	
Inputs All Scenarios					
Constant	Constant		5.31E-06	5.31E-06	Powers et al. (2007)
a	Excavation Length	m	13.8	13.7	Approximated based on design drawings
b	Excavation Width	m	3.5	3.5	Approximated based on design drawings
	Ground Surface	m AMSL	454.0	454.0	Approximated based on design drawings
	Excavation Depth	m BGS	4.0	4.0	Approximated based on design drawings plus 0.5m
	Excavation Base Elevation	m AMSL	450.0	450.0	Approximated based on design drawings plus 0.5m
	Aquifer Depth	m BGS	7.4	7.4	Based on boreholes
	Aquifer Base Elevation	m AMSL	446.6	446.6	Based on boreholes
h _w	Height of drawdown above aquifer base	m	3.4	3.4	Calculated
r _s	Radius of circle equivalent to area of the open trench	m	5.5	5.5	Calculated
Inputs Best Case Scenario					
K	Hydraulic Conductivity	m/s	1.62E-08	1.62E-08	Based on grain size analysis average
	Groundwater Depth	m BGS	2.95	2.95	Based on surface water level Sept 2017
	Groundwater Elevation	m AMSL	451.05	451.05	Based on surface water level Sept 2017
H	Height of groundwater above aquifer base	m	4.5	4.5	Calculated
H-h _w	Groundwater drawdown	m	1.1	1.1	Calculated
Inputs Worst Case Scenario					
K	Hydraulic Conductivity	m/s	9.90E-06	9.90E-06	Based on grain size analysis maximum
	Groundwater Depth	m BGS	1.41	1.41	Based on surface water 2 year
	Groundwater Elevation	m AMSL	452.59	452.59	Based on surface water 2 year
H	Height of groundwater above aquifer base	m	6.0	6.0	Calculated
H-h _w	Groundwater drawdown	m	2.6	2.6	Calculated
Outputs Best Case Scenario					
R _o	Radius of Influence	m	0	0	Calculated
R _o + r _s	Zone of Influence	m	6	6	Calculated
Q	Dewatering Rate	L/min	1	1	Calculated
Q	Dewatering Rate	L/day	874	869	Calculated
Outputs Worst Case Scenario					
R _o	Radius of Influence	m	14	14	Calculated
R _o + r _s	Zone of Influence	m	20	20	Calculated
Q	Dewatering Rate	L/min	36	36	Calculated
Q	Dewatering Rate	L/day	51,312	51,144	Calculated
Outputs Worst Case with 2:1 Factor of Safety Scenario					
R _o	Radius of Influence	m	29	29	Calculated
R _o + r _s	Zone of Influence	m	34	34	Calculated
Q	Dewatering Rate	L/min	71	71	Calculated
Q	Dewatering Rate	L/day	102,623	102,288	Calculated

Assumptions for Construction Dewatering:

Construction dewatering rates are calculated as per Powers et al. (2007) and Somerville (1986), based on groundwater inflow to a large diameter circular excavation, with equivalent area as per the roughly square excavation shape, in an unconfined aquifer, as required for this project.

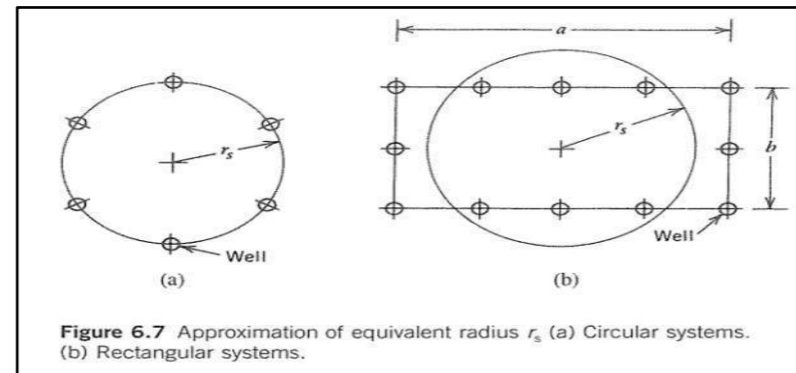
References:

Powers, Corwin, Schmall, and Kaeck., 2007. Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition. John Wiley and Sons, Inc. Hoboken, New Jersey.
Somerville, 1986. Control of Groundwater for Temporary Works. Construction Industry Research and Information Association Volume 113.

Radius of Influence Calculation:

$$R_o = [1750(H - h_w)\sqrt{K}] \text{ (Somerville, 1986)}$$

Equation Schematic Diagrams (Powers et al., 2007):

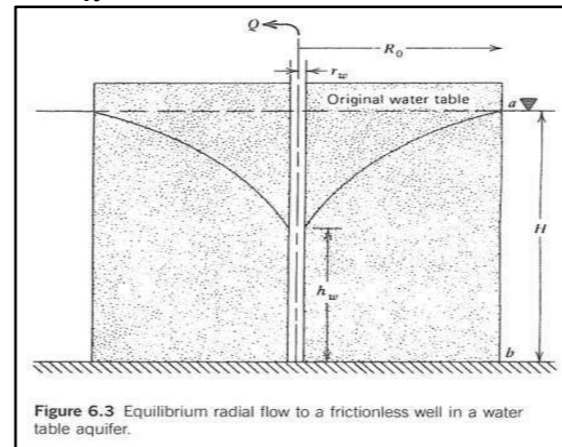


Radius of Large Well Calculation:

$$r_s = \frac{a+b}{\pi} \text{ (Powers et al., 2007)}$$

Dewatering Rate Calculation:

$$Q_w = \left[\frac{K(H^2 - h_w^2)}{5.31 \times 10^{-6} \ln(R_o + r_s)/r_s} \right] \text{ (Powers et al., 2007)}$$



Equation Variables	Variables Definition	Variables Units	Dewatering Parameters		Notes
			B109133 West Abutment	B109133 East Abutment	
Inputs All Scenarios					
Constant	Constant		5.31E-06	5.31E-06	Powers et al. (2007)
a	Excavation Length	m	13.6	13.6	Approximated based on design drawings
b	Excavation Width	m	3.5	3.5	Approximated based on design drawings
	Ground Surface	m AMSL	459.7	459.7	Approximated based on design drawings
	Excavation Depth	m BGS	3.5	3.5	Approximated based on design drawings plus 0.5m
	Excavation Base Elevation	m AMSL	456.2	456.2	Approximated based on design drawings plus 0.5m
	Aquifer Depth	m BGS	7.6	7.6	Based on boreholes
	Aquifer Base Elevation	m AMSL	452.2	452.2	Based on boreholes
h_w	Height of drawdown above aquifer base	m	4.1	4.1	Calculated
r_s	Radius of circle equivalent to area of the open trench	m	5.4	5.4	Calculated
Inputs Best Case Scenario					
K	Hydraulic Conductivity	m/s	1.84E-09	1.84E-09	Based on grain size analysis average
	Groundwater Depth	m BGS	2.13	2.13	Based on surface water level Sept 2017
	Groundwater Elevation	m AMSL	457.58	457.58	Based on surface water level Sept 2017
H	Height of groundwater above aquifer base	m	5.4	5.4	Calculated
$H-h_w$	Groundwater drawdown	m	1.4	1.4	Calculated
Inputs Worst Case Scenario					
K	Hydraulic Conductivity	m/s	9.69E-06	9.69E-06	Based on grain size analysis maximum
	Groundwater Depth	m BGS	0.27	0.27	Based on surface water 2 year
	Groundwater Elevation	m AMSL	459.43	459.43	Based on surface water 2 year
H	Height of groundwater above aquifer base	m	7.3	7.3	Calculated
$H-h_w$	Groundwater drawdown	m	3.2	3.2	Calculated
Outputs Best Case Scenario					
R_o	Radius of Influence	m	0	0	Calculated
$R_o + r_s$	Zone of Influence	m	6	6	Calculated
Q	Dewatering Rate	L/min	0	0	Calculated
Q	Dewatering Rate	L/day	346	346	Calculated
Outputs Worst Case Scenario					
R_o	Radius of Influence	m	18	18	Calculated
$R_o + r_s$	Zone of Influence	m	23	23	Calculated
Q	Dewatering Rate	L/min	46	46	Calculated
Q	Dewatering Rate	L/day	66,662	66,662	Calculated
Outputs Worst Case with 2:1 Factor of Safety Scenario					
R_o	Radius of Influence	m	35	35	Calculated
$R_o + r_s$	Zone of Influence	m	41	41	Calculated
Q	Dewatering Rate	L/min	93	93	Calculated
Q	Dewatering Rate	L/day	133,323	133,323	Calculated

Assumptions for Construction Dewatering:

Construction dewatering rates are calculated as per Powers et al. (2007) and Somerville (1986), based on groundwater inflow to a large diameter circular excavation, with equivalent area as per the roughly square excavation shape, in an unconfined aquifer, as required for this project.

References:

Powers, Corwin, Schmall, and Kaeck., 2007. Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition. John Wiley and Sons, Inc. Hoboken, New Jersey.
Somerville, 1986. Control of Groundwater for Temporary Works. Construction Industry Research and Information Association Volume 113.

Radius of Influence Calculation:

$$R_o = [1750(H - h_w)\sqrt{K}] \text{ (Somerville, 1986)}$$

Equation Schematic Diagrams (Powers et al., 2007):

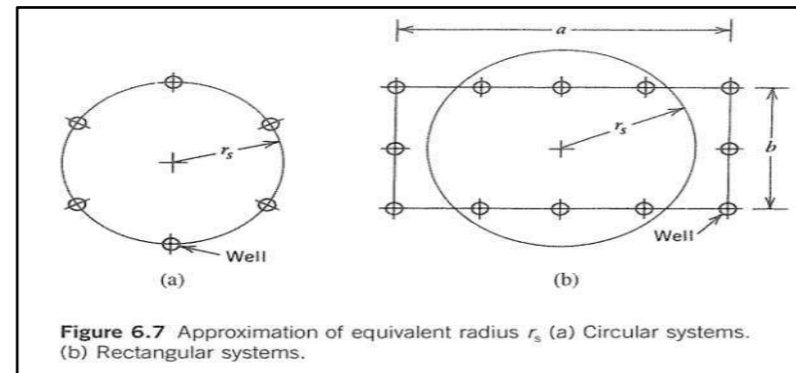


Figure 6.7 Approximation of equivalent radius r_s (a) Circular systems. (b) Rectangular systems.

Radius of Large Well Calculation:

$$r_s = \frac{a+b}{\pi} \text{ (Powers et al., 2007)}$$

Dewatering Rate Calculation:

$$Q_w = \left[\frac{K(H^2 - h_w^2)}{5.31 \times 10^{-6} \ln(R_o + r_s)/r_s} \right] \text{ (Powers et al., 2007)}$$

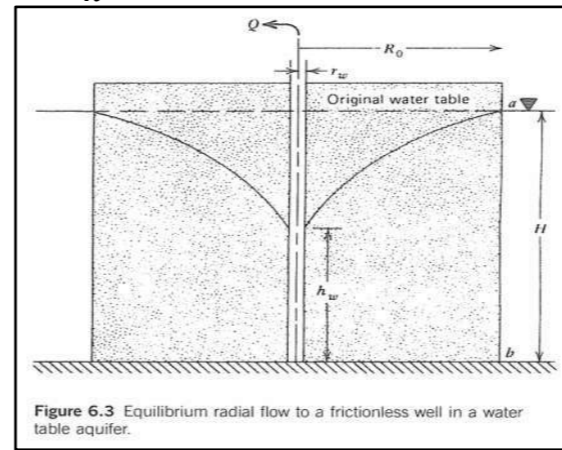


Figure 6.3 Equilibrium radial flow to a frictionless well in a water table aquifer.

Equation Variables	Variables Definition	Variables Units	Dewatering Parameters		Notes
			B109134 West Abutment	B109134 East Abutment	
Inputs All Scenarios					
Constant	Constant		5.31E-06	5.31E-06	Powers et al. (2007)
a	Excavation Length	m	14.0	14.0	Approximated based on design drawings
b	Excavation Width	m	3.5	3.5	Approximated based on design drawings
	Ground Surface	m AMSL	463.6	463.6	Approximated based on design drawings
	Excavation Depth	m BGS	3.5	3.5	Approximated based on design drawings plus 0.5m
	Excavation Base Elevation	m AMSL	460.1	460.1	Approximated based on design drawings plus 0.5m
	Aquifer Depth	m BGS	6.9	6.9	Based on boreholes
	Aquifer Base Elevation	m AMSL	456.7	456.7	Based on boreholes
h_w	Height of drawdown above aquifer base	m	3.4	3.4	Calculated
r_s	Radius of circle equivalent to area of the open trench	m	5.6	5.6	Calculated
Inputs Best Case Scenario					
K	Hydraulic Conductivity	m/s	1.97E-08	1.97E-08	Based on grain size analysis average
	Groundwater Depth	m BGS	2.40	2.40	Based on surface water level Sept 2017
	Groundwater Elevation	m AMSL	461.20	461.20	Based on surface water level Sept 2017
H	Height of groundwater above aquifer base	m	4.5	4.5	Calculated
$H-h_w$	Groundwater drawdown	m	1.1	1.1	Calculated
Inputs Worst Case Scenario					
K	Hydraulic Conductivity	m/s	9.69E-06	9.69E-06	Based on grain size analysis average B10933
	Groundwater Depth	m BGS	0.65	0.65	Based on surface water 2 year
	Groundwater Elevation	m AMSL	462.95	462.95	Based on surface water 2 year
H	Height of groundwater above aquifer base	m	6.2	6.2	Calculated
$H-h_w$	Groundwater drawdown	m	2.8	2.8	Calculated
Outputs Best Case Scenario					
R_o	Radius of Influence	m	0	0	Calculated
$R_o + r_s$	Zone of Influence	m	6	6	Calculated
Q	Dewatering Rate	L/min	1	1	Calculated
Q	Dewatering Rate	L/day	970	970	Calculated
Outputs Worst Case Scenario					
R_o	Radius of Influence	m	16	16	Calculated
$R_o + r_s$	Zone of Influence	m	21	21	Calculated
Q	Dewatering Rate	L/min	37	37	Calculated
Q	Dewatering Rate	L/day	53,831	53,831	Calculated
Outputs Worst Case with 2:1 Factor of Safety Scenario					
R_o	Radius of Influence	m	31	31	Calculated
$R_o + r_s$	Zone of Influence	m	37	37	Calculated
Q	Dewatering Rate	L/min	75	75	Calculated
Q	Dewatering Rate	L/day	107,663	107,663	Calculated

Assumptions for Construction Dewatering:

Construction dewatering rates are calculated as per Powers et al. (2007) and Somerville (1986), based on groundwater inflow to a large diameter circular excavation, with equivalent area as per the roughly square excavation shape, in an unconfined aquifer, as required for this project.

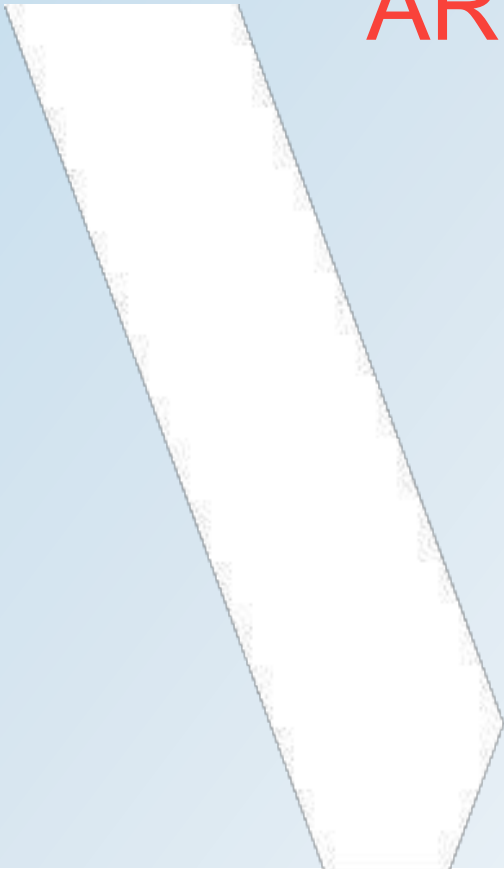
References:

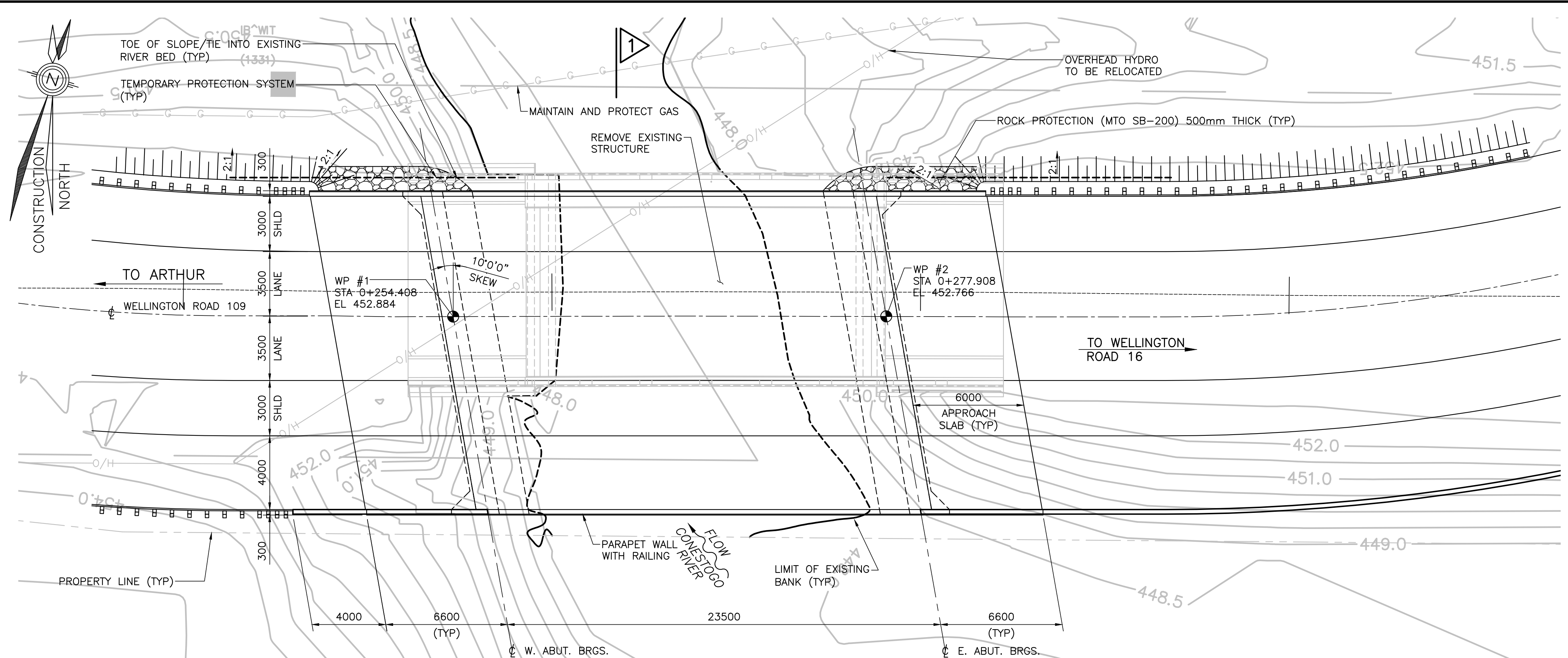
Powers, Corwin, Schmall, and Kaeck., 2007. Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition. John Wiley and Sons, Inc. Hoboken, New Jersey.
Somerville, 1986. Control of Groundwater for Temporary Works. Construction Industry Research and Information Association Volume 113.

APPENDIX

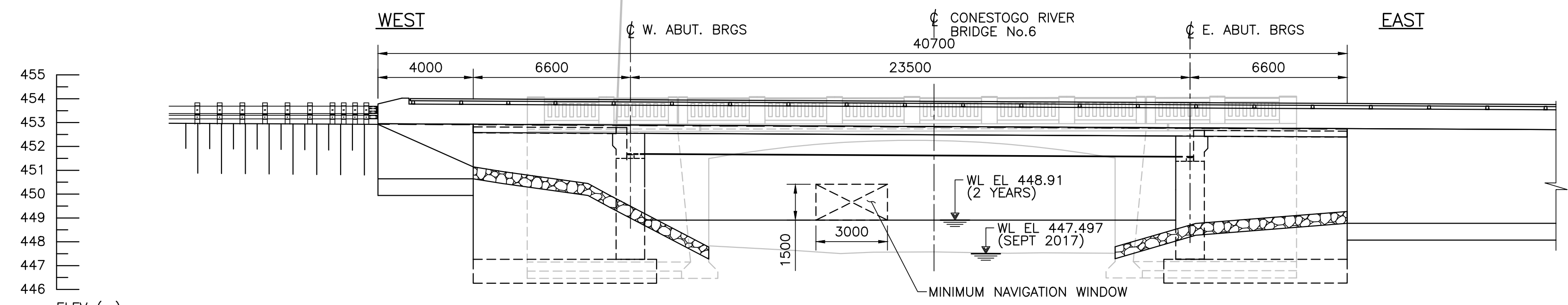
A

GENERAL
ARRANGEMENTS

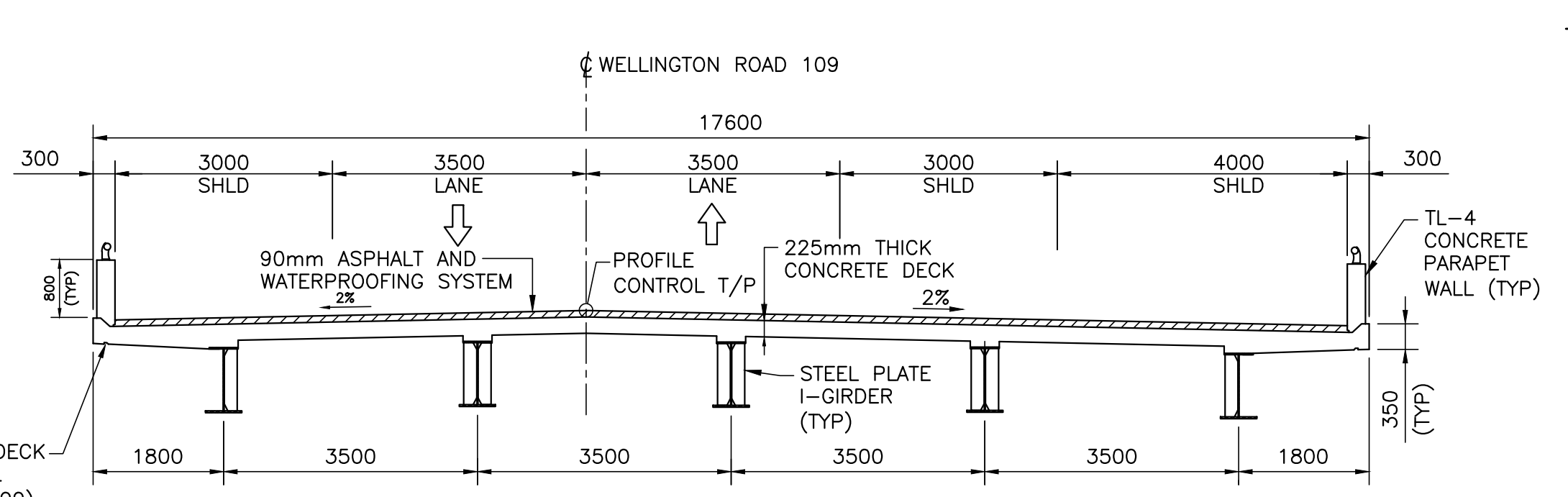




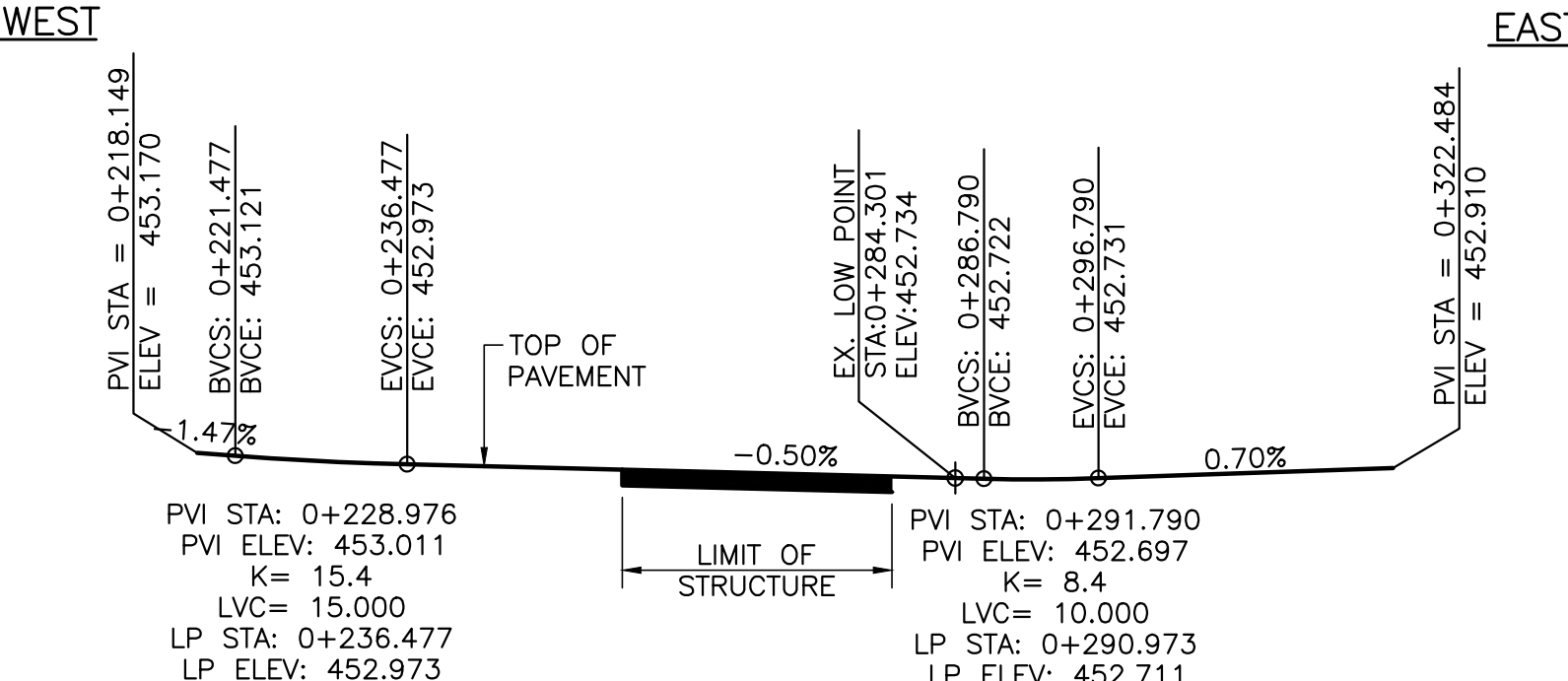
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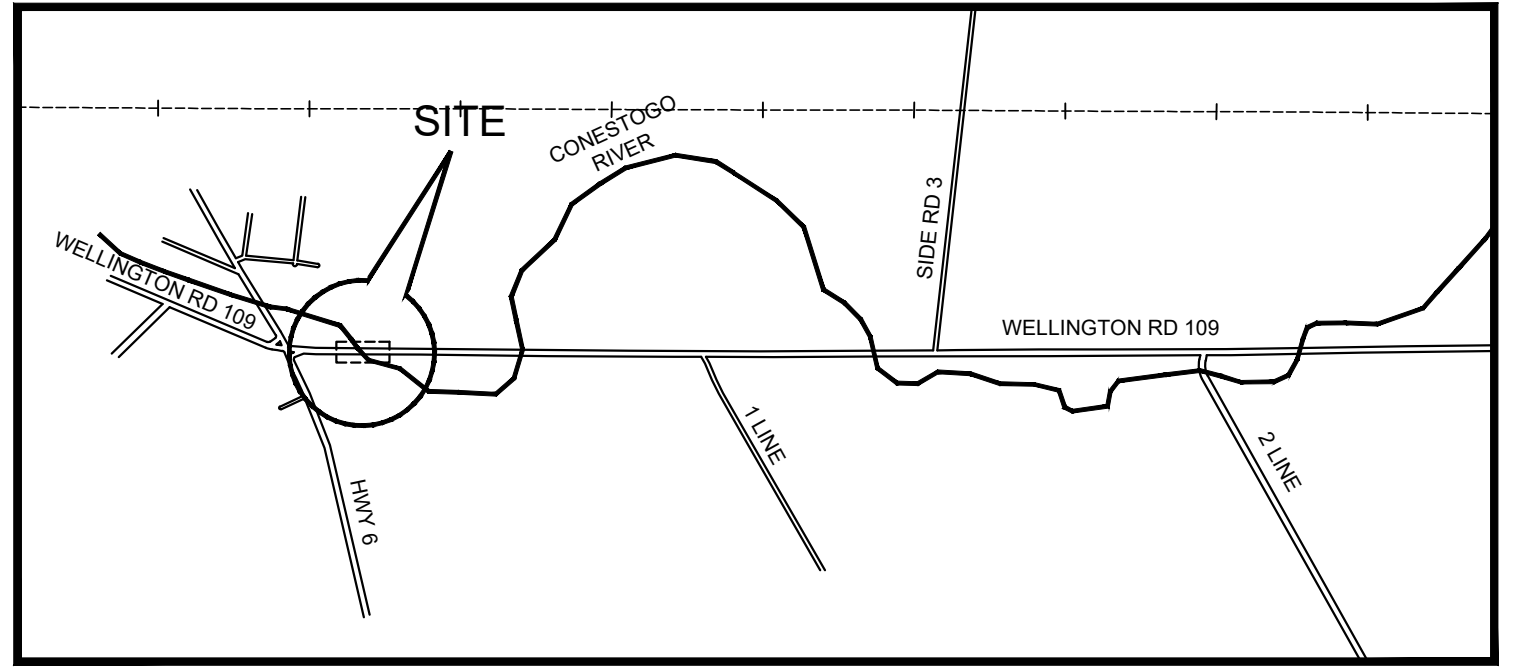
ELEVATION
1:150



SECTION
1:75



PROFILE OF COUNTY RD 109
N.T.S.



KEY PLAN
N.T.S.

GENERAL NOTES:

DESIGN CODE:
CANADIAN HIGHWAY BRIDGE DESIGN CODE, CHBDC 2019 CAN/CSA S6-19
LIVE LOAD: CL-625-ONT

CLASS OF CONCRETE:
CLASS C-1 PER CSA 23.1

CLEAR COVER TO REINFORCING STEEL:
DECK
TOP 70 ± 20 mm
BOTTOM 40 ± 10 mm
REMAINDER, UNLESS OTHERWISE NOTED 70 ± 20 mm

- REINFORCING STEEL:**
1. REINFORCING STEEL SHALL BE GRADE 400W.
 2. UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B.
 3. STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500MPa, UNLESS OTHERWISE SPECIFIED.
 4. BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.
 5. GLASS FIBRE REINFORCED POLYMER REINFORCING BARS SHALL BE GRADE I, GRADE II OR GRADE III AS SPECIFIED IN THE CONTRACT DRAWINGS. THE NOMINAL DIAMETER, TENSILE MODULUS OF ELASTICITY AND GUARANTEED MINIMUM TENSILE STRENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
 6. BAR MARKS WITH THE PREFIX G DENOTE GRADE III GLASS FIBRE REINFORCED POLYMER BARS (E=60GPa).
 7. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS12-1, UNLESS INDICATED OTHERWISE.

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 7. OPSS 1005 (AGGREGATES FOR WATERBODIES) SHALL BE USED FOR ANY ROCK PROTECTION REQUIRED BELOW THE BANKFULL CHANNEL OF THE WATERCOURSE.

LIST OF ABBREVIATIONS:
T/P - DENOTES TOP OF PAVEMENT
WL - DENOTES WATER LEVEL
WP - DENOTES WORKING POINT

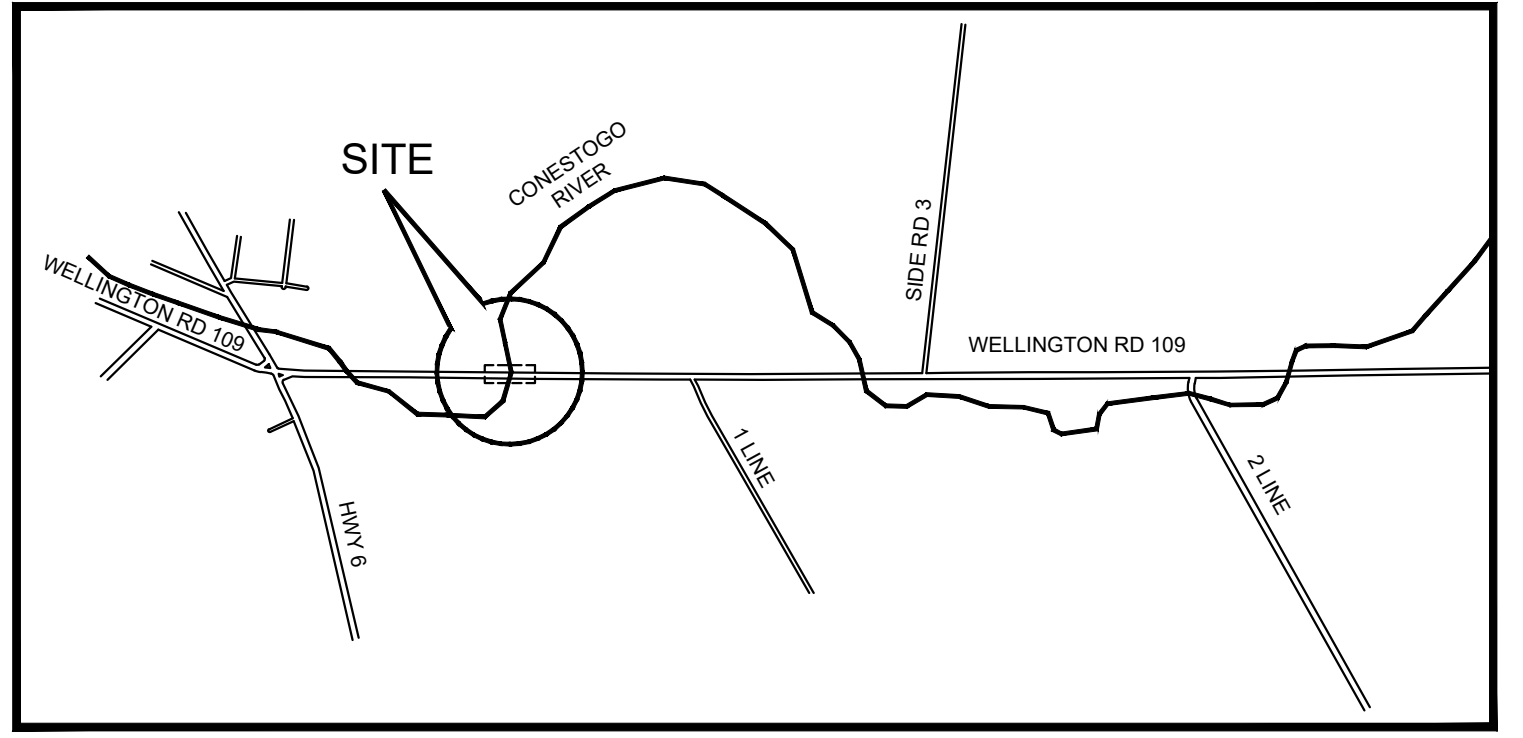
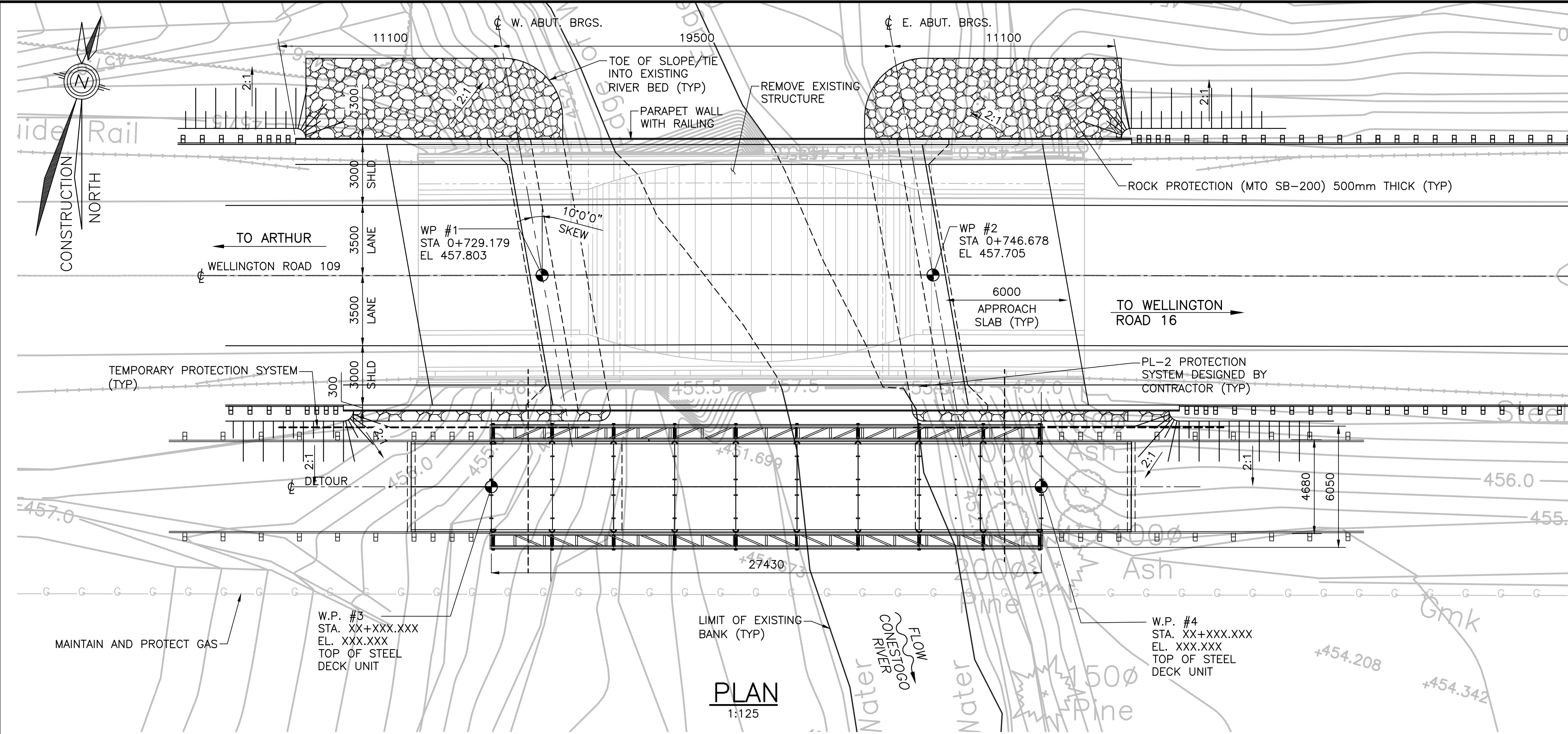
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DATE PLOTTED: 11/6/2022 10:52:33 AM BY: R6P518AR

* FABRICATION AND ERECTION TOLERANCES FOR GIRDERS MAY REQUIRE THAT THIS DIMENSION VARY SO THAT THE DECK FASCIA LINES UP WITH THE FASCIA ON THE WINGWALLS.

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NO.		DESCRIPTION	DATE	INITIAL	FIELD BK.	PAGE	PROJECT
		REVISIONS					

		COUNTY OF WELLINGTON CONESTOGO RIVER BRIDGE No.6 STRUCTURE No. B109132		PROJECT NO. DRAWING NO.
		GENERAL ARRANGEMENT		1



GENERAL NOTES:

DESIGN CODE:
CANADIAN HIGHWAY BRIDGE DESIGN CODE, CHBDC 2019 CAN/CSA S6-19
LIVE LOAD: CL-625-ONT

CLASS OF CONCRETE:
CLASS C-1 PER CSA 23.1

CLEAR COVER TO REINFORCING STEEL:

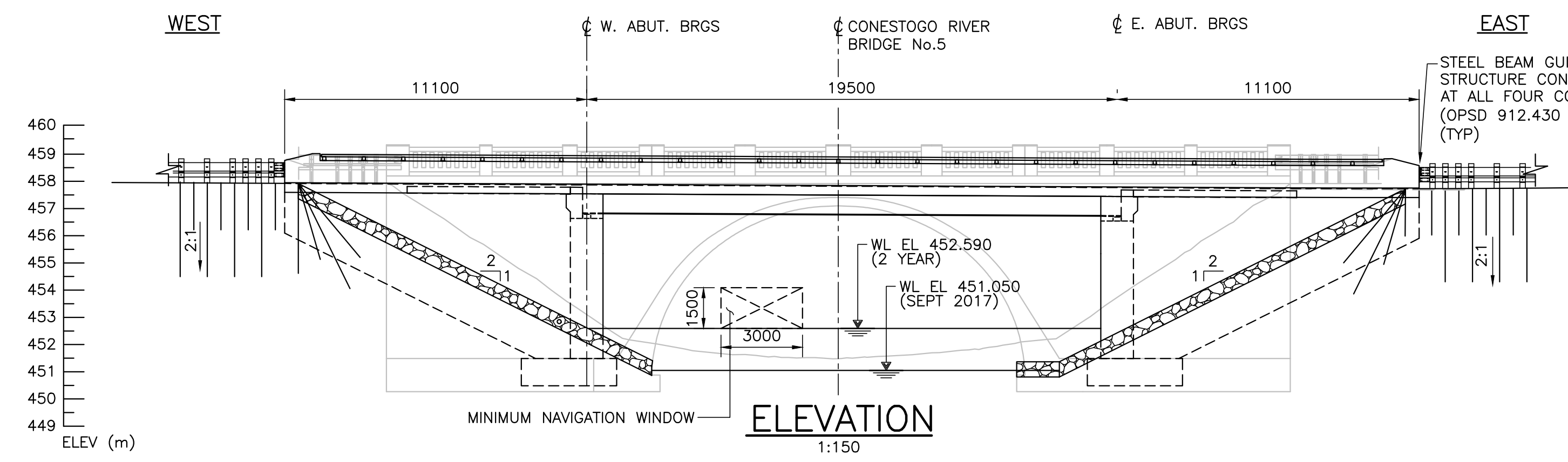
DECK TOP	70 ± 20 mm
DECK BOTTOM	40 ± 10 mm
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LIST OF ABBREVIATIONS:

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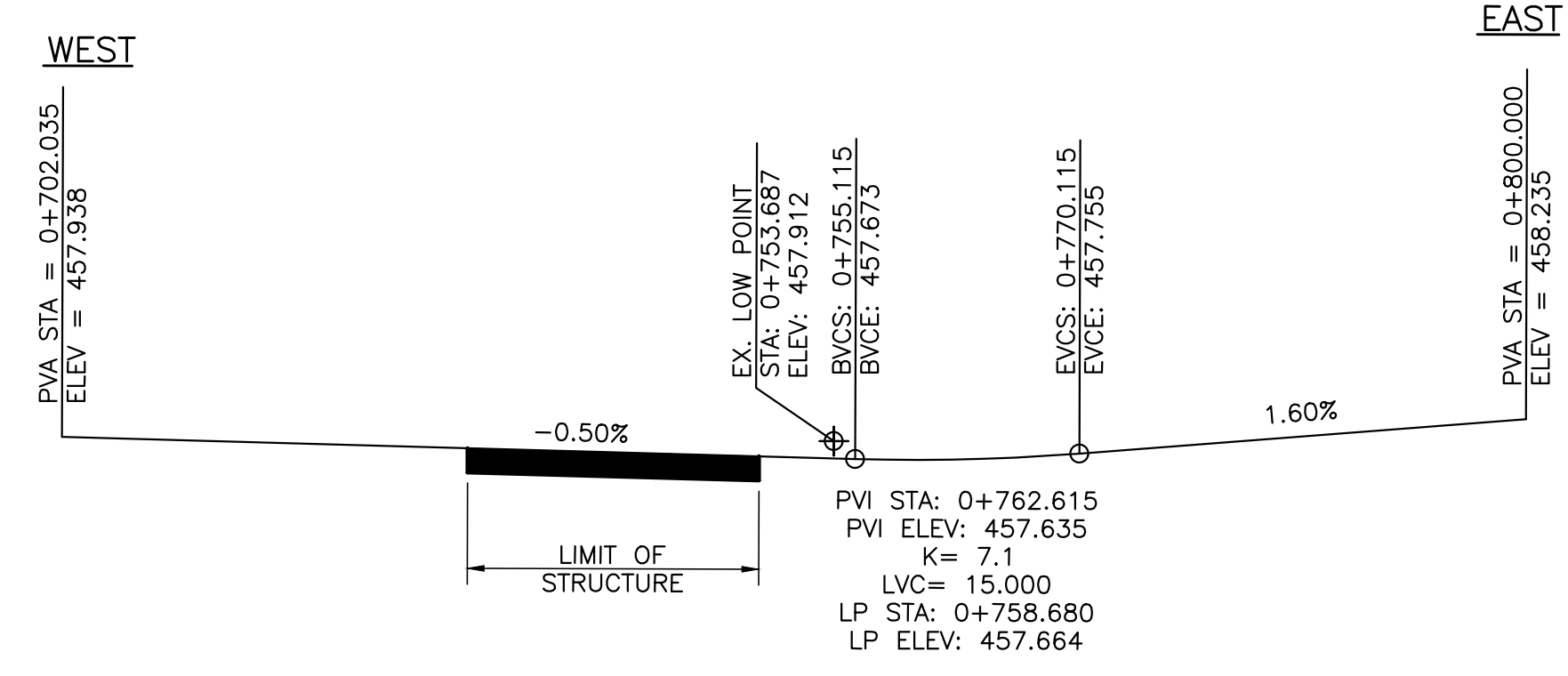
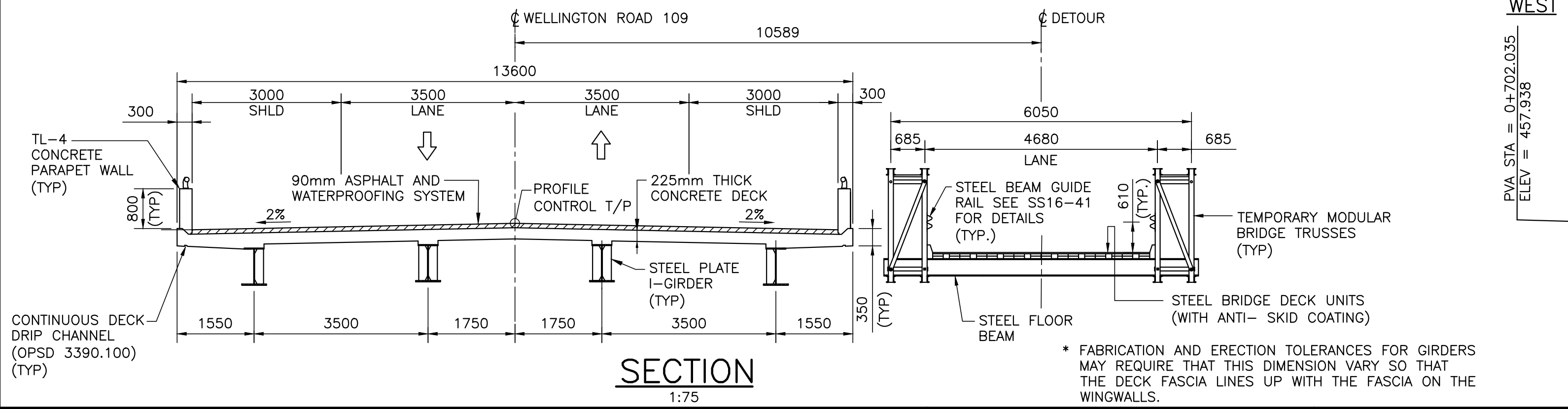


APPLICABLE STANDARD DRAWINGS:

- OPSD - 0219.130 HEAVY-DUTY SILT FENCE BARRIER
- OPSD - 0219.180 STRAW BALE FLOW CHECK DAM
- OPSD - 0219.240 DEWATERING TRAP
- OPSD - 0219.260 TURBIDITY CURTAIN
- OPSD - 0219.261 TURBIDITY CURTAIN, SEAM DETAIL
- OPSD - 0912.430 GUIDE RAIL SYSTEM, STEEL BEAM STRUCTURE CONNECTION
- OPSD - 3101.150 WALLS, ABUTMENT, BACKFILL MINIMUM GRANULAR REQUIREMENT
- OPSD - 3102.100 WALLS, ABUTMENT, BACKFILL DRAIN
- OPSD - 3190.100 WALLS, RETAINING AND ABUTMENT WALL DRAIN
- OPSD - 3370.100 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD
- OPSD - 3390.100 DECK DRIP CHANNEL
- OPSD - 3419.100 BARRIERS AND RAILINGS STEEL GUIDE RAIL AND CHANNEL ANCHORAGE
- OPSD - 3950.100 CONCRETE EXPANSION AND CONSTRUCTION JOINT ON STRUCTURE

LIST OF DRAWINGS:

- 1 GENERAL ARRANGEMENT



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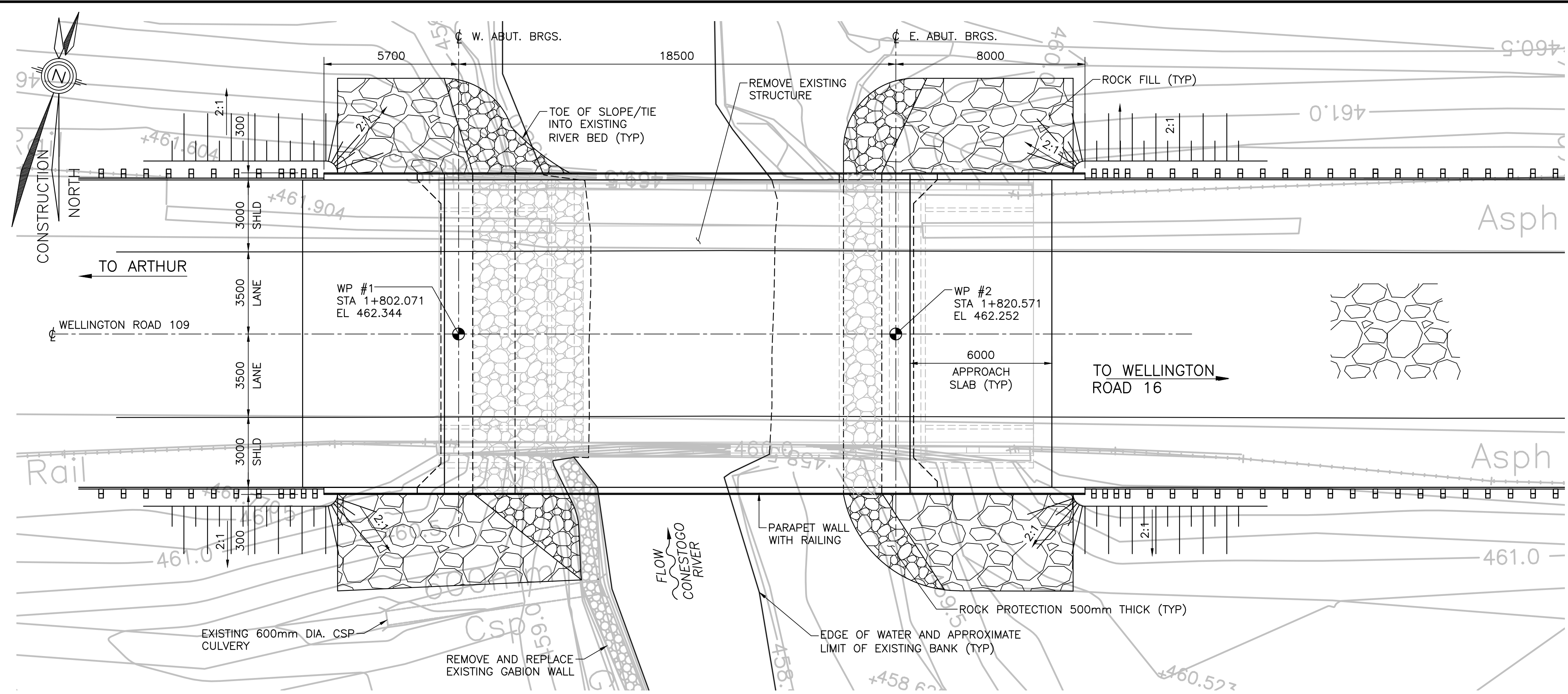
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NO.	DESCRIPTION	DATE	INITIAL	FIELD BK.	PAGE	PROJECT
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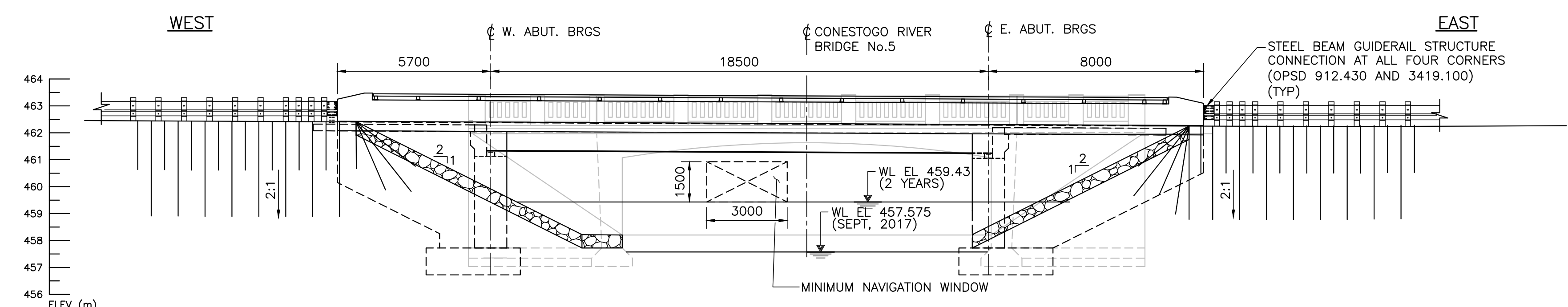
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CONESTOGO RIVER BRIDGE No.5		DRAWING NO.
STRUCTURE No. C109123		1
GENERAL ARRANGEMENT		



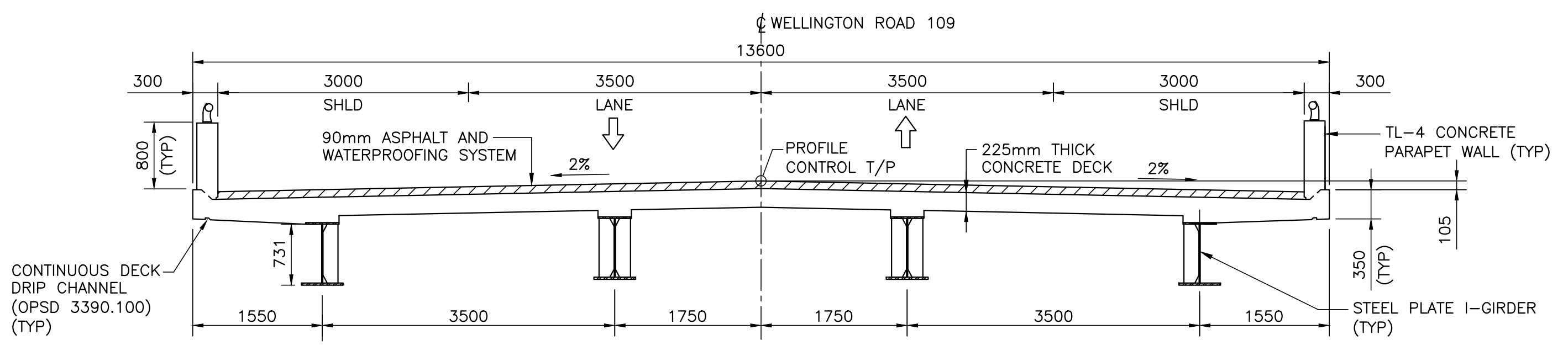
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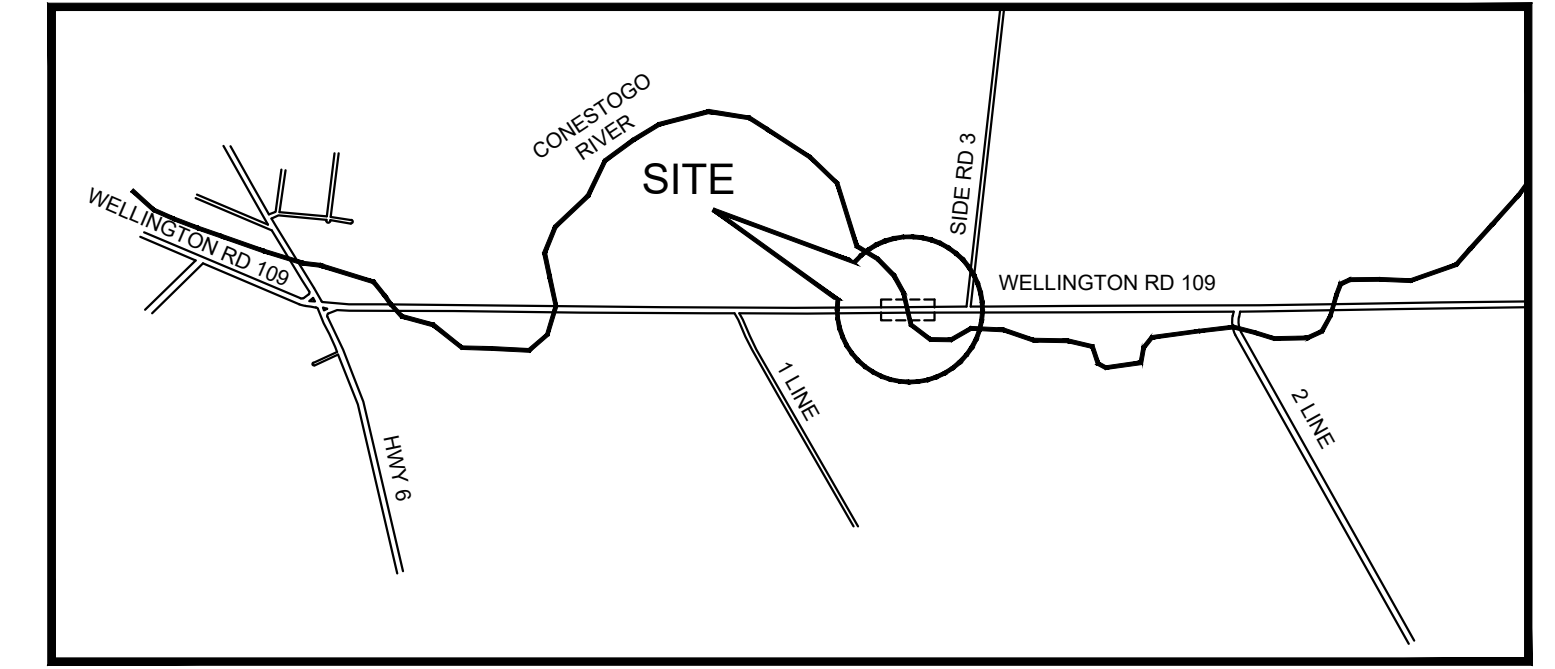
PLAN
1:125



ELEVATION
1:125



SECTION
1:50



KEY PLAN
N.T.S.

GENERAL NOTES:

DESIGN CODE:
CANADIAN HIGHWAY BRIDGE DESIGN CODE, CHBDC 2019 CAN/CSA S6-19
LIVE LOAD: CL-625-ONT

CLASS OF CONCRETE:
CLASS C-1 PER CSA 23.1

CLEAR COVER TO REINFORCING STEEL:
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BOTTOM 40 ± 10 mm
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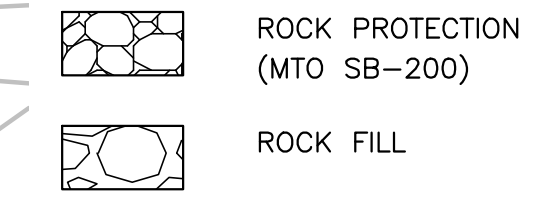
CONSTRUCTION NOTES:

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LIST OF ABBREVIATIONS:

T/P - DENOTES TOP OF PAVEMENT
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LEGENDS:

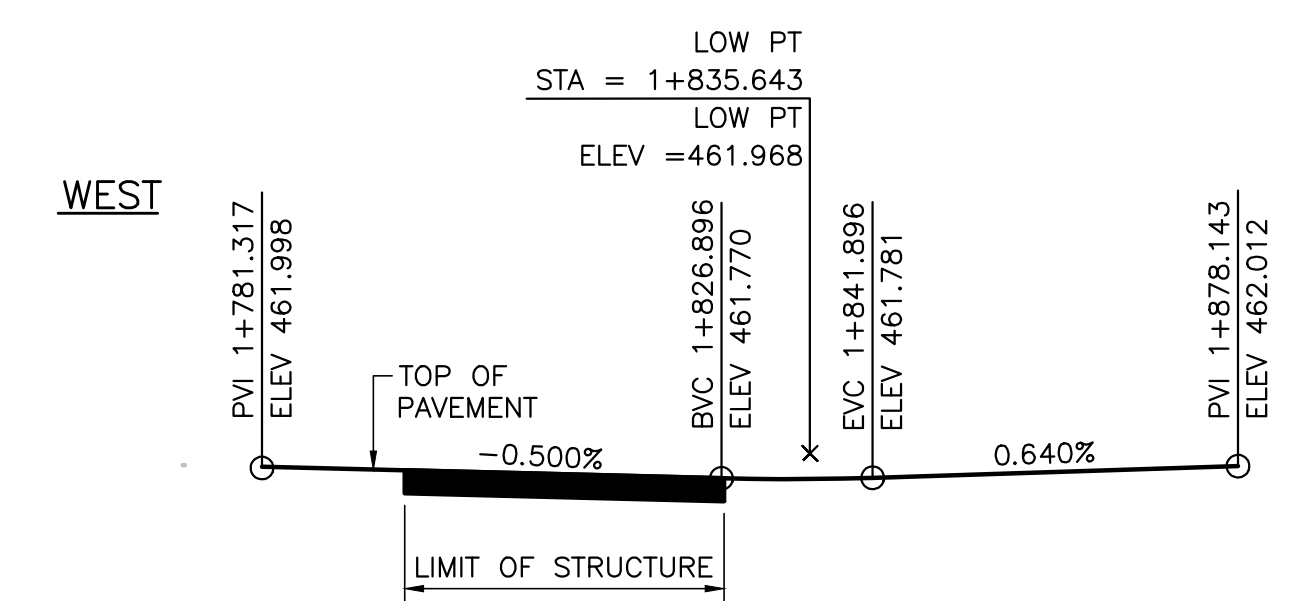


APPLICABLE STANDARD DRAWINGS:

- OPSD - 0219.130 HEAVY-DUTY SILT FENCE BARRIER
- OPSD - 0219.180 STRAW BALE FLOW CHECK DAM
- OPSD - 0219.240 DEWATERING TRAP
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- OPSD - 3390.100 DECK DRIP CHANNEL
- OPSD - 3419.100 BARRIERS AND RAILINGS STEEL GUIDE RAIL AND CHANNEL ANCHORAGE
- OPSD - 3950.100 CONCRETE EXPANSION AND CONSTRUCTION JOINT ON STRUCTURE

LIST OF DRAWINGS:

- 1 GENERAL ARRANGEMENT



PROFILE OF COUNTY RD 109
N.T.S.

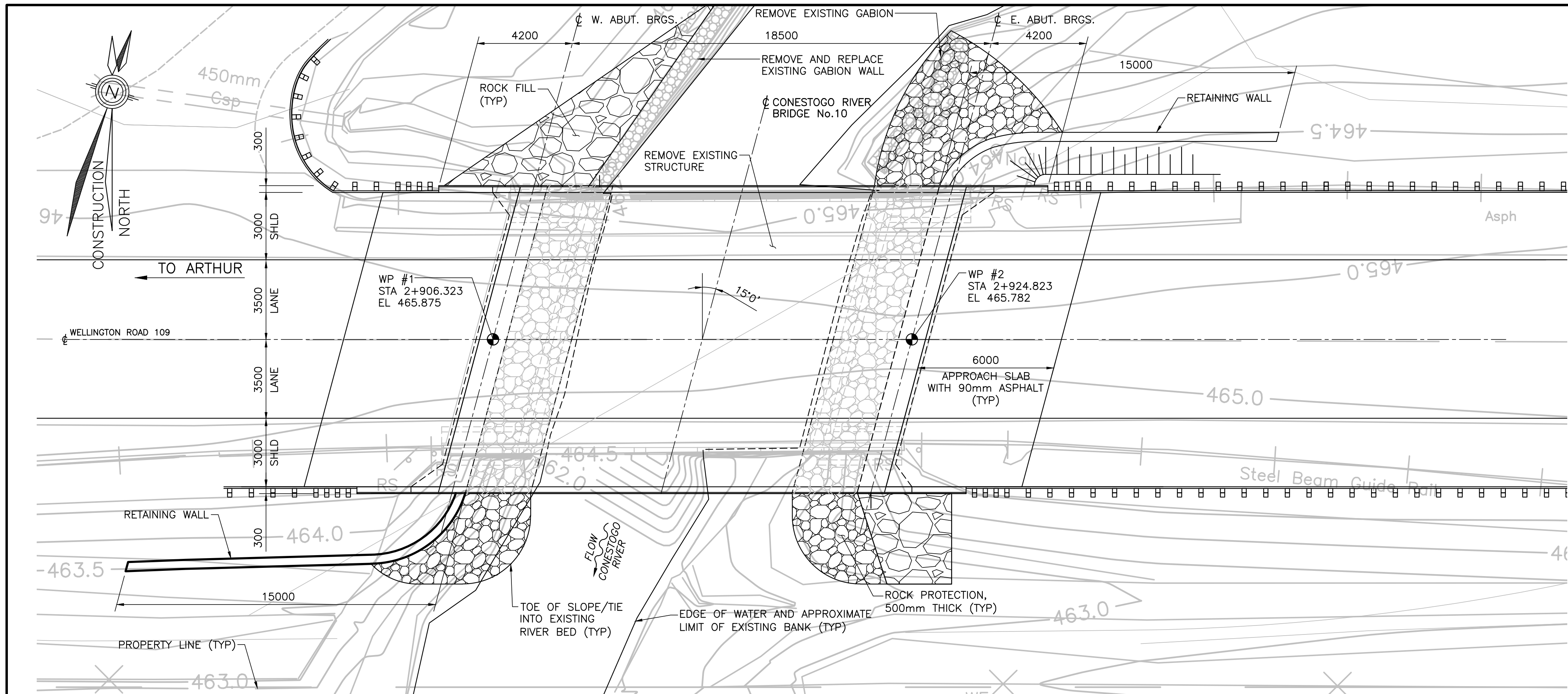
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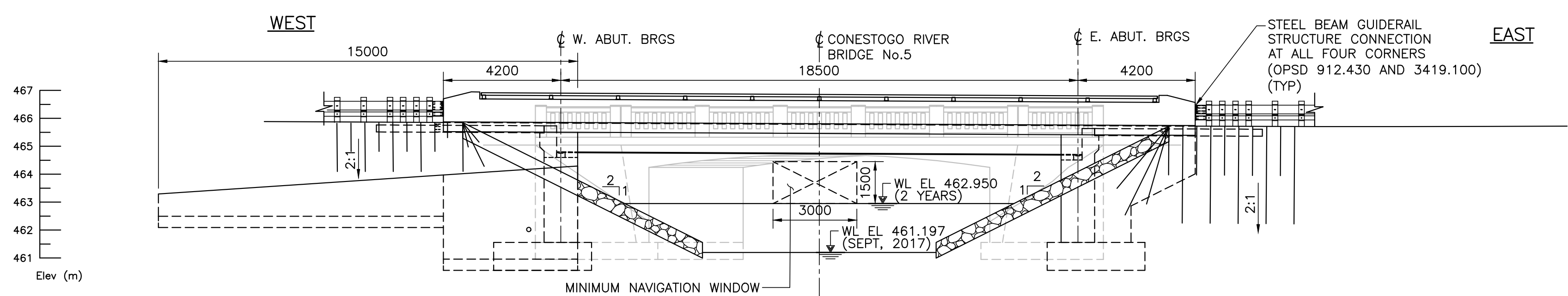
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REVISIONS							

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STRUCTURE No. B109133		1
GENERAL ARRANGEMENT		

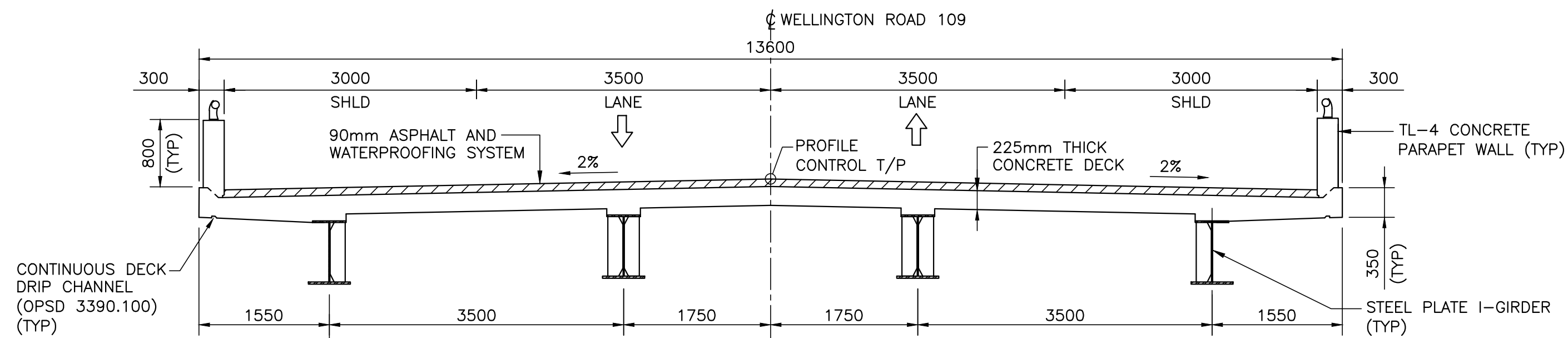
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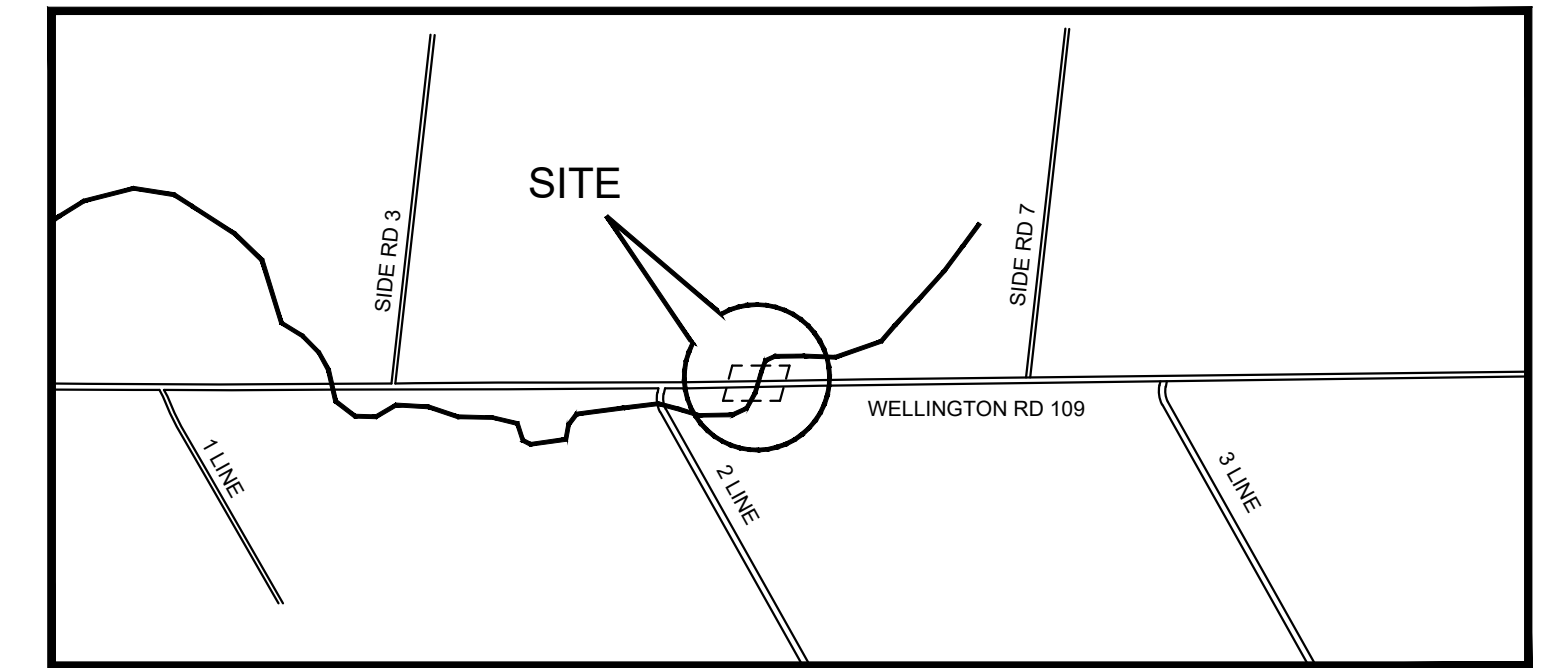
PLAN
1:100



ELEVATION
1:125



SECTION
1:50



KEY PLAN
N.T.S.

GENERAL NOTES:

DESIGN CODE:

CANADIAN HIGHWAY BRIDGE DESIGN CODE, CHBDC 2019 CAN/CSA S6-19
LIVE LOAD: CL-625-ONT

CLASS OF CONCRETE:

CLASS C-1 PER CSA 23.1

CLEAR COVER TO REINFORCING STEEL:

DECK	
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BOTTOM	40 ± 10 mm
REMAINDER, UNLESS OTHERWISE NOTED	70 ± 20 mm

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CONSTRUCTION NOTES:

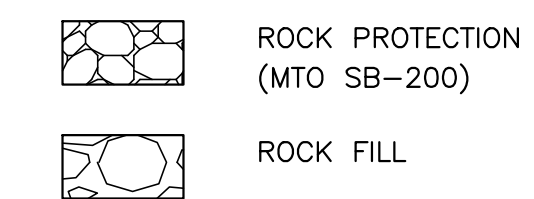
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LEGENDS:

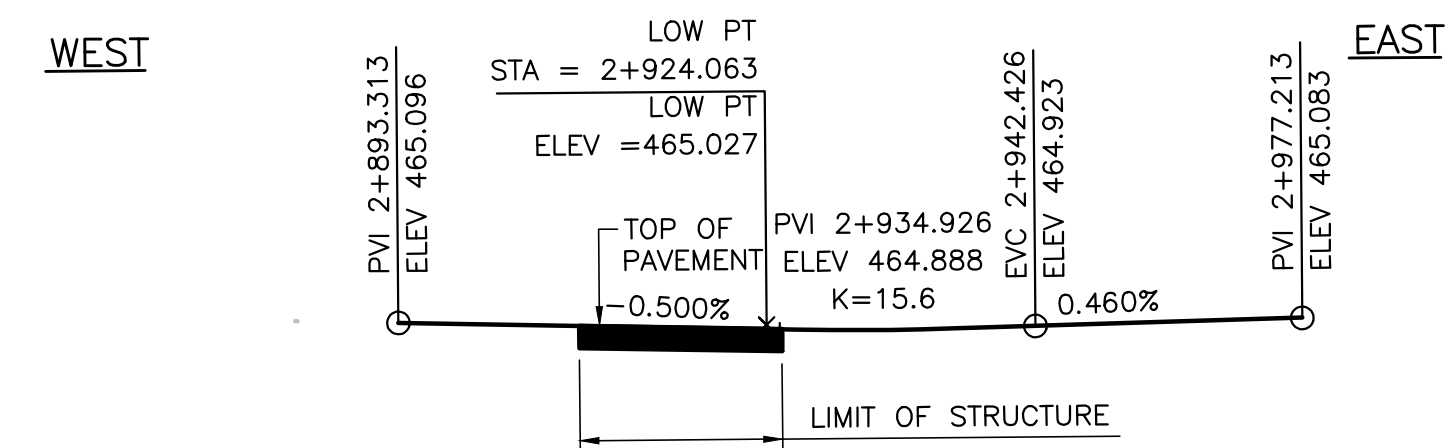


APPLICABLE STANDARD DRAWINGS:

- | | |
|-----------------|--|
| OPSD - 0219.130 | HEAVY-DUTY SILT FENCE BARRIER |
| OPSD - 0219.180 | STRAW BALE FLOW CHECK DAM |
| OPSD - 0219.240 | DEWATERING TRAP |
| OPSD - 0219.260 | TURBIDITY CURTAIN |
| OPSD - 0219.261 | TURBIDITY CURTAIN, SEAM DETAIL |
| OPSD - 0912.430 | GUIDE RAIL SYSTEM, STEEL BEAM STRUCTURE CONNECTION |
| OPSD - 3101.150 | WALLS, ABUTMENT, BACKFILL MINIMUM GRANULAR REQUIREMENT |
| OPSD - 3102.100 | WALLS, ABUTMENT, BACKFILL DRAIN |
| OPSD - 3190.100 | WALLS, RETAINING AND ABUTMENT WALL DRAIN |
| OPSD - 3370.100 | DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD |
| OPSD - 3390.100 | DECK DRIP CHANNEL |
| OPSD - 3419.100 | BARRIERS AND RAILINGS STEEL GUIDE RAIL AND CHANNEL ANCHORAGE |
| OPSD - 3950.100 | CONCRETE EXPANSION AND CONSTRUCTION JOINT ON STRUCTURE |

LIST OF DRAWINGS:

1. GENERAL ARRANGEMENT



PROFILE OF COUNTY RD 109
N.T.S.

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MODIFIED: 11/17/2022 4:22:45 PM BY: R6P/SJAK
DATE PLOTTED: 11/9/2022 10:55:53 AM BY: R6P/SJAK

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NO.		DESCRIPTION		DATE	INITIAL	FIELD BK.		PAGE		PROJECT	
REVISIONS											



COUNTY OF WELLINGTON
CONESTOGO RIVER BRIDGE No.10
STRUCTURE No. B109134

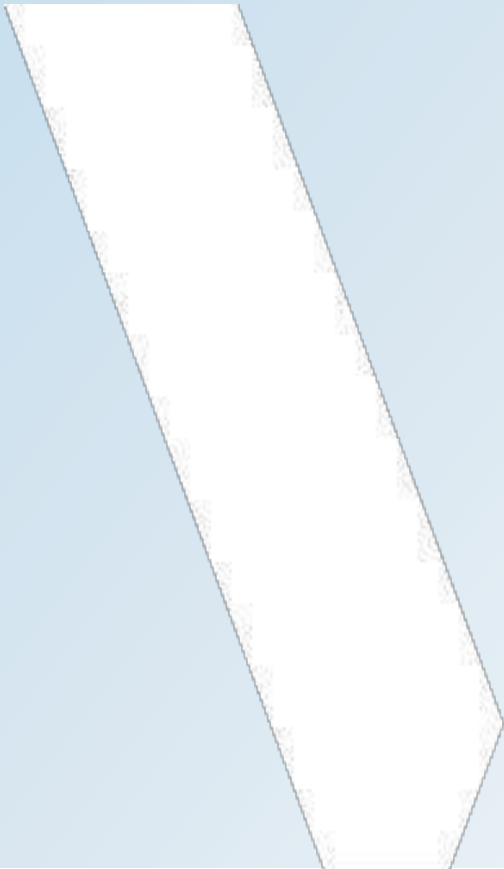
PROJECT NO.
DRAWING NO.
1

GENERAL ARRANGEMENT

APPENDIX

B

ERIS REPORT





DATABASE REPORT

Project Property: *Wellington Road 109 - 4 Bridges
Wellington Road 109
Arthur ON*

Project No: *17M-01271-02-470*

Report Type: *Quote - Custom-Build Your Own Report*

Order No: *21111900102*

Requested by: *WSP Canada Inc.*

Date Completed: *November 24, 2021*

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Executive Summary

Property Information:

Project Property: Wellington Road 109 - 4 Bridges
Wellington Road 109 Arthur ON

Project No: 17M-01271-02-470

Order Information:

Order No: 21111900102
Date Requested: November 19, 2021
Requested by: WSP Canada Inc.
Report Type: Quote - Custom-Build Your Own Report

Historical/Products:

Executive Summary: Report Summary

<i>Database</i>	<i>Name</i>	<i>Searched</i>	<i>Project Property</i>	<i>Boundary to 0.50km</i>	<i>Total</i>
ÅAGR	<i>Abandoned Aggregate Inventory</i>	Y	0	0	0
ÅGR	<i>Aggregate Inventory</i>	Y	0	0	0
ÅMIS	<i>Abandoned Mine Information System</i>	Y	0	0	0
ÅNDR	<i>Anderson's Waste Disposal Sites</i>	Y	0	0	0
ÅST	<i>Aboveground Storage Tanks</i>	Y	0	0	0
ÅUWR	<i>Automobile Wrecking & Supplies</i>	Y	0	0	0
BORE	<i>Borehole</i>	Y	0	6	6
ÇA	<i>Certificates of Approval</i>	Y	0	4	4
ÇDRY	<i>Dry Cleaning Facilities</i>	Y	0	0	0
ÇFOT	<i>Commercial Fuel Oil Tanks</i>	Y	0	0	0
ÇHEM	<i>Chemical Manufacturers and Distributors</i>	Y	0	0	0
ÇHM	<i>Chemical Register</i>	Y	0	0	0
ÇNG	<i>Compressed Natural Gas Stations</i>	Y	0	0	0
ÇCOAL	<i>Inventory of Coal Gasification Plants and Coal Tar Sites</i>	Y	0	0	0
ÇCONV	<i>Compliance and Convictions</i>	Y	0	0	0
ÇCPU	<i>Certificates of Property Use</i>	Y	0	0	0
DRL	<i>Drill Hole Database</i>	Y	0	0	0
ĐTNK	<i>Delisted Fuel Tanks</i>	Y	0	13	13
ÉASR	<i>Environmental Activity and Sector Registry</i>	Y	0	0	0
ÉBR	<i>Environmental Registry</i>	Y	0	0	0
ÉCA	<i>Environmental Compliance Approval</i>	Y	0	1	1
ÉEM	<i>Environmental Effects Monitoring</i>	Y	0	0	0
ÉHS	<i>ERIS Historical Searches</i>	Y	0	5	5
ÉIIS	<i>Environmental Issues Inventory System</i>	Y	0	0	0
ÉMHE	<i>Emergency Management Historical Event</i>	Y	0	0	0
ÉPAR	<i>Environmental Penalty Annual Report</i>	Y	0	0	0
ÉXP	<i>List of Expired Fuels Safety Facilities</i>	Y	0	0	0
ĤCON	<i>Federal Convictions</i>	Y	0	0	0
ĤCS	<i>Contaminated Sites on Federal Land</i>	Y	0	0	0
ĤOFT	<i>Fisheries & Oceans Fuel Tanks</i>	Y	0	0	0
ĤRST	<i>Federal Identification Registry for Storage Tank Systems (FIRSTS)</i>	Y	0	0	0
FST	<i>Fuel Storage Tank</i>	Y	0	13	13
FSTH	<i>Fuel Storage Tank - Historic</i>	Y	0	5	5
ĠEN	<i>Ontario Regulation 347 Waste Generators Summary</i>	Y	0	15	15
ĠHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	Y	0	0	0
HINC	<i>TSSA Historic Incidents</i>	Y	0	1	1

<i>Database</i>	<i>Name</i>	<i>Searched</i>	<i>Project Property</i>	<i>Boundary to 0.50km</i>	<i>Total</i>
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	0	0
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	2	2
PINC	Pipeline Incidents	Y	0	2	2
PRT	Private and Retail Fuel Storage Tanks	Y	0	6	6
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	10	10
SCT	Scott's Manufacturing Directory	Y	0	2	2
SPL	Ontario Spills	Y	0	37	37
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	0	87	87
Total:			0	209	209

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
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No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
<u>1</u>	WWIS		8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON Well ID: 7052875	NW/218.9	-3.22	<u>48</u>
<u>2</u>	WWIS		8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON Well ID: 7052876	NW/242.3	-7.08	<u>50</u>
<u>3</u>	WWIS		lot 2 con 1 ON Well ID: 6709487	W/38.9	2.03	<u>52</u>
<u>4</u>	WWIS		lot 3 con 1 ON Well ID: 6703000	NW/278.5	-6.45	<u>55</u>
<u>5</u>	WWIS		lot 36 con 1 ON Well ID: 6705781	WSW/39.1	2.03	<u>59</u>
<u>6</u>	PES	2131240 ONTARIO LTD	7580 W. GARAFRAXA 1ST LINE RR 3 ARTHUR ON N0G 1A0	WSW/103.5	3.08	<u>63</u>
<u>6</u>	PES	2131240 ONTARIO LTD	7580 W. GARAFRAXA 1ST LINE RR 3 ARTHUR ON N0G 1A0	WSW/103.5	3.08	<u>63</u>
<u>6</u>	EHS		7580 1 Line Wellington North ON N0G1A0	WSW/103.5	3.08	<u>64</u>
<u>6</u>	GEN	ARTHUR HOME HARDWARE BUILDING CENTRE	7580 FIRST LINE ARTHUR ON N0G 1A0	WSW/103.5	3.08	<u>64</u>
<u>7</u>	WWIS		7580 1ST LINE ARTHUR ON Well ID: 7276934	WSW/81.3	2.61	<u>64</u>
<u>8</u>	WWIS		7580 1ST LINE ARTHUR ON Well ID: 7276935	WSW/84.7	2.61	<u>67</u>
<u>9</u>	WWIS		FIRE #7572 lot 36 con 1 ON	SW/197.8	3.03	<u>71</u>

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 6715955			
10	WWIS		lot 36 con 2 ON Well ID: 6712920	SSE/403.1	5.07	75
11	WWIS		7580 FIRST LINE ARTHUR ON Well ID: 7281837	WSW/140.4	3.03	80
12	WWIS		lot 4 con 1 ON Well ID: 6703001	ENE/57.8	-0.27	82
13	WWIS		FIRE # 7556 lot 25 con 1 ARTHUR ON Well ID: 6716013	SSW/421.7	2.98	87
14	WWIS		lot 3 con 1 ON Well ID: 6702999	NNE/428.0	1.03	92
15	WWIS		lot 4 con 1 ON Well ID: 6705948	ENE/107.8	0.71	96
16	WWIS		lot 2 con 1 ON Well ID: 6705119	W/80.8	-0.25	101
17	WWIS		8096 HWY. 109 lot 36 con 1 ARTHUR ON Well ID: 7263957	WSW/173.6	0.73	104
18	WWIS		lot 37 con 1 ON Well ID: 6706459	WSW/15.0	-1.13	106
19	WWIS		lot 2 con 1 ON Well ID: 6708240	W/82.8	-2.79	111
20	WWIS		lot 35 con 2 ON Well ID: 6709272	E/69.0	0.52	115
21	BORE		ON	WSW/181.7	-3.92	119
22	CA	ARTHUR VILLAGE 8-2313-88 CONT. #2	SEWAGE TREATM. EXP.8-2214-89 ARTHUR VILL. ON	W/289.1	-7.03	120

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
22	CA	ARTHUR VILLAGE 8-2313-88 CONT. 2	SEWAGE TREAT. EXPANSION ARTHUR VILL. ON	W/289.1	-7.03	120
23	SPL	ONTARIO CLEAN WATER AGENCY	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	W/139.7	-10.84	121
24	SPL	MOE	WELL ST. PUMPING ST'N. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	121
24	SPL	MOE	WELLS ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	122
24	SPL	MOE	BELLTHREAD PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	122
24	SPL	MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	123
24	SPL	MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	123
24	SPL	MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	124
24	SPL	MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	124
24	SPL	MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	125
24	SPL	MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	125
24	SPL	MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	126

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
24	SPL	MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	126
24	SPL	MOE	WELLS STREET PUMPING STATION TO CONESTOGA R. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	127
24	SPL	MINISTRY OF THE ENVIRONMENT	GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	127
24	SPL	MINISTRY OF THE ENVIRONMENT	GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	128
24	SPL	MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	128
24	SPL	MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	129
24	SPL	MOE	CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	129
24	SPL	MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	130
24	SPL	MOE	CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	130
24	SPL	MOE	CONOSTOGO LAKE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	131
24	SPL	MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	131

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
24	SPL	MINISTRY OF THE ENVIRONMENT	CONESTOGO RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR TWP. ON	W/139.7	-10.84	132
24	SPL	MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	W/139.7	-10.84	132
24	SPL	MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	W/139.7	-10.84	133
24	SPL	MINISTRY OF THE ENVIRONMENT	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	W/139.7	-10.84	133
24	SPL	ONTARIO CLEAN WATER AGENCY	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET WELLINGTON NORTH TOWNSHIP ON	W/139.7	-10.84	134
25	BORE		ON	W/214.0	-8.92	134
26	WWIS		211 ELIZA ST ARTHUR ON Well ID: 7331059	W/220.5	-6.18	136
27	WWIS		lot 2 con 1 ON Well ID: 6704343	W/72.5	-10.97	139
28	WWIS		lot 34 con 2 ON Well ID: 6710271	E/35.2	0.59	143
29	WWIS		lot 35 con 2 ON Well ID: 6713103	E/55.8	0.59	147
30	WWIS		lot 37 con 1 ON Well ID: 6708870	WSW/66.7	-4.97	152
31	WWIS		lot 37 con 1 ON Well ID: 6703483	WSW/30.3	-2.08	155

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
32	WWIS		lot 35 con 2 ON Well ID: 6702902	E/68.6	-1.51	159
33	WWIS		lot 5 con 1 ON Well ID: 6703002	ENE/209.7	2.40	163
34	SCT	Copernicus Educational Products Inc.	8194 County Rd 109 RR 3 Arthur ON	ENE/6.0	0.88	166
34	SCT	Copernicus Educational Product	8194 County Road 109 RR 3 Arthur ON N0G 1A0	ENE/6.0	0.88	166
35	WWIS		lot 34 con 2 ON Well ID: 6708747	E/165.7	0.63	167
36	WWIS		JONES BASELINE RR#1 lot 33 con 1 ARTHUR ON Well ID: 7044991	WSW/490.0	-13.78	170
37	WWIS		211 ELIZA ST ARTHUR ON Well ID: 7331058	W/347.9	0.03	172
38	WWIS		109 WELLINGTON RD ARTHUR ON Well ID: 7158779	WSW/4.4	-8.97	175
39	WWIS		211 ELIZA ST ARTHUR ON Well ID: 7331060	W/20.3	-8.97	178
40	WWIS		ON Well ID: 7171480	WSW/55.6	-15.01	181
41	WWIS		JONES BASELINE lot 33 con 1 ARTHUR ON Well ID: 7044990	WSW/454.9	1.10	182
42	WWIS		lot 36 con 1 ON Well ID: 6706605	WSW/303.9	2.08	187
43	WWIS		lot 37 con 1 ON Well ID: 6703273	WSW/185.3	-2.61	191

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
44	WWIS		lot 37 con 1 ON Well ID: 6708594	WSW/303.9	2.11	195
45	WWIS		lot 37 con 1 ON Well ID: 6712213	WSW/49.1	-15.17	198
45	WWIS		lot 37 con 1 ON Well ID: 6712214	WSW/49.1	-15.17	203
46	WWIS		lot 37 con 1 ON Well ID: 6702883	WSW/123.0	-8.66	205
47	WWIS		lot 37 con 1 ON Well ID: 6702882	WSW/55.4	-12.53	208
48	WWIS		211 ELISA ST lot 1 con 1 ARTHUR ON Well ID: 7263086	W/294.4	-1.72	211
49	RST	PIONEER PETROLIUM INC	8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	W/96.4	-14.25	213
49	RST	PIONEER PETROLIUM INC	8006 WELLINGTON ROAD 109 FERGUS ON N0G 1A0	W/96.4	-14.25	213
49	FSTH	PIONEER PETROLEUMS MANAGEMENT INC**	8006 WELLINGTON RD 109 LOT 1 CON 1, HWY 6&9 ARTHUR ON	W/96.4	-14.25	214
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	214
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON N0G 1A0	W/96.4	-14.25	215
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	215
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	216

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	217
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	217
49	DTNK	PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	W/96.4	-14.25	218
49	FST	PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	218
49	FST	PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	219
49	FST	PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	220
49	FST	PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	220
49	FST	PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	221
49	RST	LL SNACK EXPRESS	8006 WELLINGTON ROAD 109 ARTHUR ON NOG1A0	W/96.4	-14.25	221
49	RST	PIONEER ENERGY LP	8006 WELLINGTON ROAD 109 ARTHUR ON NOG1A0	W/96.4	-14.25	222
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	222
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	222
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA	W/96.4	-14.25	222

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
			ON			
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	222
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	222
49	DTNK	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	222
49	RST	PIONEER SNACK EXPRESS	8006 WELLINGTON RD 109 ARTHUR ON NOG1A0	W/96.4	-14.25	222
49	FST		8006 WELLINGTON RD 109 ARTHUR ON NOG 1A0	W/96.4	-14.25	223
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	223
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	224
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	224
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	225
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	225
49	FST	PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR NOG 1A0 ON CA ON	W/96.4	-14.25	226

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
49	GEN	Parkland Corporation	8006 Wellington County Road 109 Arthur ON N0G 1A0	W/96.4	-14.25	226
50	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7210892	WSW/94.1	-11.64	227
51	WWIS		ON Well ID: 7276127	WSW/101.0	-8.88	230
52	WWIS		lot 22 con B ON Well ID: 6701957	WSW/387.0	4.34	231
53	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7161023	WSW/118.4	-8.88	234
54	WWIS		lot 6 con 1 ON Well ID: 6703003	ENE/253.9	0.93	237
55	WWIS		ON Well ID: 7228721	W/125.5	-14.12	240
56	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7161022	WSW/119.7	-8.97	241
57	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7210891	WSW/121.0	-10.91	244
58	WWIS		7641 HIGHWAY 6 lot 37 con 1 ARTHUR ON Well ID: 7183961	WSW/134.0	-7.31	247
59	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7161021	WSW/132.4	-8.97	250
60	RST	ESSO	7643 6 HWY ARTHUR ON N0G1A0	WSW/133.5	-8.97	253
60	RST	ESSO ARTHUR	7643 6 HWY ARTHUR ON N0G 1A0	WSW/133.5	-8.97	253

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
60	EHS		7643 HIGHWAY 6 Arthur ON	WSW/133.5	-8.97	253
60	EHS		7643 Highway 6 Arthur ON	WSW/133.5	-8.97	253
60	RST	ESSO ARTHUR	7643 6 HWY ARTHUR ON N0G1A0	WSW/133.5	-8.97	254
60	GEN	Parkland Industries Ltd.	7643 Highway 6 Arthur ON N0G1A0	WSW/133.5	-8.97	254
60	GEN	Parkland Industries Limited	7643 Highway 6 Arthur ON N0G1A0	WSW/133.5	-8.97	254
60	GEN	Parkland Industries Ltd.	7643 Highway 6 Arthur ON N0G1A0	WSW/133.5	-8.97	254
61	PRT	INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	WSW/180.1	-2.97	255
61	GEN	INTER-COUNTY MILK TRANSPORT LTD.	LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	WSW/180.1	-2.97	255
61	GEN	INTER-COUNTY MILK TRANSPORT LTD	LOT 23, CONC B PEEL TWP ON N0G 1A0	WSW/180.1	-2.97	255
61	GEN	INTER-COUNTY MILK TRANSPORT LTD. 21-260	LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	WSW/180.1	-2.97	255
61	GEN	INTER-COUNTY MILK TRANSPORT LIMITED	LOT 23, CONCESSION B PEEL TOWNSHIP ON	WSW/180.1	-2.97	256
61	GEN	INTER-COUNTY MILK TRANSPORT INC.	LOT 23, CONCESSION B R.R.#1 ARTHUR ON N0G 1A0	WSW/180.1	-2.97	256
61	FSTH	INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	WSW/180.1	-2.97	256

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
61	FSTH	INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	WSW/180.1	-2.97	257
61	GEN	INTER-COUNTY MILK TRANSPORT INC.	LOT 23, CONCESSION B R.R.#1 ARTHUR ON	WSW/180.1	-2.97	257
62	PRT	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRA	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR ON	WSW/143.7	-6.76	257
62	PRT	GULLWING PETROLEUMS INC	HWY 6 & 9 CORNERS ARTHUR ON	WSW/143.7	-6.76	257
62	RST	CANGO PETROLEUMS	HWY 6 ARTHUR ON NOG 1A0	WSW/143.7	-6.76	257
62	FSTH	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR ON	WSW/143.7	-6.76	258
63	WWIS		211 ELIZA ST. EAST ARTHUR ON Well ID: 6715886	W/282.5	-3.97	258
64	WWIS		lot 23 con B ON Well ID: 6706945	WSW/232.5	0.50	260
65	WWIS		ON Well ID: 6712922	W/141.8	-14.03	265
66	WWIS		lot 23 con B ON Well ID: 6709740	WSW/255.7	1.73	269
67	WWIS		7643 HWY 6 ARUTHUR ON Well ID: 7210895	WSW/144.7	-8.97	272
68	WWIS		7643 HWY 6 ARTHUR ON Well ID: 7210893	WSW/144.7	-8.97	275
69	CA	Fleming Fast Freight Inc.	7634 Highway 6 Wellington North ON	WSW/227.9	0.67	278

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
69	ECA	Fleming Fast Freight Inc.	7634 Hwy 6 Wellington North ON N1M 2A5	WSW/227.9	0.67	278
70	WWIS		COUNTY RD 109 ARTHUR ON <i>Well ID: 6715657</i>	W/156.8	-14.13	279
71	EHS		7634 Highway 6 Arthur ON N0G 1A0	WSW/200.6	-0.53	280
72	WWIS		ON <i>Well ID: 7149905</i>	W/268.5	-5.02	281
73	GEN	Dr Andrew Kim	231 Eliza Street Arthur ON N0G1A0	W/440.8	-1.97	283
73	GEN	Arthur Dental	231 Eliza Street Arthur ON N0G1A0	W/440.8	-1.97	283
73	GEN	Arthur Dental	231 Eliza Street Arthur ON N0G1A0	W/440.8	-1.97	284
74	CA	ARTHUR VILLAGE	GEORGE ST. (HWY #6) BRIDGE ARTHUR VILL. ON	WSW/170.2	-7.88	284
74	SPL	TRANSPORT TRUCK	HWY 9 & HWY 6 MOTOR VEHICLE (OPERATING FLUID) ARTHUR VILLAGE ON	WSW/170.2	-7.88	284
74	SPL	MAPLE LODGE FARMS	INTERSECTION OF HWY 6 AND HWY 9 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	WSW/170.2	-7.88	285
74	SPL	MAPLE LODGE FARMS	INTERSECTION OF HWY. #9 AND HWY #6 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	WSW/170.2	-7.88	285
74	SPL	CANGO PETROLEUMS LTD.	CANGO GAS STATION AT THE CORNER OF HWY. 6 & HWY. 9 SERVICE STATION ARTHUR VILL. ON	WSW/170.2	-7.88	286

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
74	SPL	UNKNOWN	CORNER OF HWY. 6 & 9 ARTHUR VILL. ON	WSW/170.2	-7.88	286
74	SPL		The Corner of Highway 6 and 109 Wellington Rd., Arthur Wellington North ON	WSW/170.2	-7.88	287
74	SPL	Pioneer Petroleum<UNOFFICIAL>	Hwy 6 & Hwy 109 Wellington North ON	WSW/170.2	-7.88	287
75	HINC		INTERSECTION OF WELLINGTON COUNTY ROAD 109 & HIGHWAY 6 ARTHUR ON	WSW/170.5	-7.88	288
76	WWIS		7636 HWY 6 ARTHUR ON Well ID: 7123321	WSW/243.3	0.67	288
77	WWIS		7636 HWY 6 ARTHUR ON Well ID: 7123324	WSW/283.6	2.31	291
78	WWIS		lot 34 con 3 ON Well ID: 6705263	E/293.8	3.03	293
79	WWIS		lot 23 con B ON Well ID: 6701959	WSW/187.0	-6.28	298
80	WWIS		7636 HWY 6 ARTHUR ON Well ID: 7123323	WSW/270.6	2.03	301
81	WWIS		41 ELIZA ST ARTHUR ON Well ID: 7042081	W/318.2	-3.97	303
82	EHS		7644 Hwy 6 Arthur ON Arthur ON NOG 1A0	WSW/195.0	-4.38	307
83	WWIS		7999 WORINGTON RD 109 ARTHUR ON Well ID: 6715824	WSW/188.9	-7.88	307
84	WWIS		7636 HWY 6 ARTHUR ON	WSW/267.8	2.03	309

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 7123322			
85	WWIS		211 ELIZA ST ARTHUR ON Well ID: 7331057	W/290.2	-6.74	312
86	WWIS		211 ELIZA ST ARTHUR ON Well ID: 7331056	W/291.6	-5.89	316
87	WWIS		7598 HIGHWAY 6 lot 22 con B ON Well ID: 7187029	WSW/486.1	5.03	319
88	WWIS		7994 WELLINGTON RD 109 ARTHUR ON Well ID: 7281679	W/228.6	-13.08	321
89	WWIS		lot 23 con B ON Well ID: 6712367	WSW/218.3	-3.84	324
90	WWIS		7994 WELLINGTON RD ARTHUR ON Well ID: 7145549	W/215.3	-11.69	328
91	WWIS		7994 WELLINGTON ROAD ARTHUR ON Well ID: 7163864	WSW/213.5	-11.69	338
92	WWIS		7994 WELLINGTON RD 109 ON EAST SIDE OF HWY 6 ARTHUR ON Well ID: 7220861	W/235.5	-15.97	342
93	GEN	Upper Grand District School Board	Arthur Public School 141 Eliza Street Arthur ON	W/333.4	-4.27	344
94	WWIS		lot 23 con A ON Well ID: 6703367	WSW/308.0	2.31	345
95	WWIS		7995 WELLINGTON RD 109 lot 23 con B ARTHUR ON Well ID: 7187196	WSW/243.8	-6.25	349
96	BORE		ON	W/279.4	-12.95	351
97	FST		7994 WELLINGTON ROAD 109 ARTHUR ON N0G 1A0	W/258.6	-16.25	352

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
97	SPL	United Petroleum Transport	7994 Wellington Rd 109, Arthur Wellington North ON	W/258.6	-16.25	353
98	BORE		ON	W/286.2	-12.95	353
99	PRT	CK'S CHICKEN CHICKEN RESTAURANTS LTD	131 CATHERINE ST ARTHUR ON	W/261.5	-11.96	354
99	PRT	CK'S CHICKEN RESTAURANT LIMITED PETRO CANADA	131 CATHERINE ST ARTHUR ON	W/261.5	-11.96	354
99	PRT	1121113 ONTARIO INC ROYAL T GAS BAR	131 CATHERINE ST ARTHUR ON	W/261.5	-11.96	354
99	RST	PETRO CANADA	131 CATHERINE W ARTHUR ON NOG1A0	W/261.5	-11.96	354
99	FSTH	TRICIA CELIK	131 CATHERINE ST ARTHUR ON	W/261.5	-11.96	355
100	WWIS		ON Well ID: 7163571	W/275.9	-16.23	355
101	SPL	Union Gas Limited	7999 Wellington Road 109, Arthur Wellington North ON	WSW/270.9	-8.97	356
101	PINC	PIPELINE HIT 2"	7999 WELLINGTON RD 109,,ARTHUR, ON,,CA ON	WSW/270.9	-8.97	357
102	BORE		ON	W/299.6	-12.89	357
103	BORE		ON	W/304.7	-12.89	358
104	SPL	s.21<UNOFFICIAL>	7995 Wellington Road 109 Wellington North ON	WSW/295.1	-6.25	359

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
105	WWIS		244 ISABELLA lot 29 con 1 ARTHUR ON <i>Well ID:</i> 7363656	W/482.4	-2.97	359
105	WWIS		244 ISABELLA lot 29 con 1 ARTHUR ON <i>Well ID:</i> 7360349	W/482.4	-2.97	361
106	WWIS		242 ISABELLA lot 29 con 1 ARTHUR ON <i>Well ID:</i> 7360352	W/481.8	-2.97	364
107	WWIS		242 ISABELLA lot 29 con 1 ARTHUR ON <i>Well ID:</i> 7360351	W/488.9	-2.97	367
108	WWIS		242 ISABELLA lot 29 con 1 ARTHUR ON <i>Well ID:</i> 7360350	W/496.7	-2.97	370
109	WWIS		ON <i>Well ID:</i> 6700002	W/402.4	-8.83	373
110	PINC	ENBRIDGE GAS INC	270 GEORGE ST.,ARTHUR,ON,N0G 1A0, CA ON	W/479.8	-3.97	380
111	WWIS		lot 23 con B ON <i>Well ID:</i> 6701960	WSW/485.4	3.73	380
112	WWIS		lot 23 con B ON <i>Well ID:</i> 6701958	W/417.6	-6.25	383

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2018 has found that there are 6 BORE site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	ON	181.7	<u>21</u>
	ON	214.0	<u>25</u>
	ON	279.4	<u>96</u>
	ON	286.2	<u>98</u>
	ON	299.6	<u>102</u>
	ON	304.7	<u>103</u>

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 4 CA site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
ARTHUR VILLAGE 8-2313-88 CONT. 2	SEWAGE TREAT. EXPANSION ARTHUR VILL. ON	289.1	<u>22</u>
ARTHUR VILLAGE 8-2313-88 CONT. #2	SEWAGE TREATM. EXP.8-2214-89 ARTHUR VILL. ON	289.1	<u>22</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Fleming Fast Freight Inc.	7634 Highway 6 Wellington North ON	227.9	69
ARTHUR VILLAGE	GEORGE ST. (HWY #6) BRIDGE ARTHUR VILL. ON	170.2	74

DTNK - Delisted Fuel Tanks

A search of the DTNK database, dated May 31, 2021 has found that there are 13 DTNK site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON	96.4	49
PIONEER ENERGY MANAGEMENT INC.	8006 WELLINGTON RD 109 ARTHUR ON N0G 1A0	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011- Aug 31, 2021 has found that there are 1 ECA site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Fleming Fast Freight Inc.	7634 Hwy 6 Wellington North ON N1M 2A5	227.9	69

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Jun 30, 2021 has found that there are 5 EHS site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	7580 1 Line Wellington North ON N0G1A0	103.5	6

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	7643 Highway 6 Arthur ON	133.5	60
	7643 HIGHWAY 6 Arthur ON	133.5	60
	7634 Highway 6 Arthur ON N0G 1A0	200.6	71
	7644 Hwy 6 Arthur ON Arthur ON N0G 1A0	195.0	82

FST - Fuel Storage Tank

A search of the FST database, dated May 31, 2021 has found that there are 13 FST site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PARKLAND CORPORATION	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
	8006 WELLINGTON RD 109 ARTHUR ON N0G 1A0	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
PIONEER ENERGY MANAGEMENT INC	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	96.4	49
	7994 WELLINGTON ROAD 109 ARTHUR ON N0G 1A0	258.6	97

FSTH - Fuel Storage Tank - Historic

A search of the FSTH database, dated Pre-Jan 2010* has found that there are 5 FSTH site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PIONEER PETROLEUMS MANAGEMENT INC**	8006 WELLINGTON RD 109 LOT 1 CON 1, HWY 6&9 ARTHUR ON	96.4	49
INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	180.1	61

Site	Address	Distance (m)	Map Key
INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	180.1	61
CANGO INC**	HWY 6 & 9 CORNERS ARTHUR ON	143.7	62
TRICIA CELIK	131 CATHERINE ST ARTHUR ON	261.5	99

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Apr 30, 2021 has found that there are 15 GEN site(s) within approximately 0.50 kilometers of the project property.

Site	Address	Distance (m)	Map Key
ARTHUR HOME HARDWARE BUILDING CENTRE	7580 FIRST LINE ARTHUR ON N0G 1A0	103.5	6
Parkland Corporation	8006 Wellington County Road 109 Arthur ON N0G 1A0	96.4	49
Parkland Industries Ltd.	7643 Highway 6 Arthur ON N0G1A0	133.5	60
Parkland Industries Ltd.	7643 Highway 6 Arthur ON N0G1A0	133.5	60
Parkland Industries Limited	7643 Highway 6 Arthur ON N0G1A0	133.5	60
INTER-COUNTY MILK TRANSPORT LTD	LOT 23, CONC B PEEL TWP ON N0G 1A0	180.1	61
INTER-COUNTY MILK TRANSPORT LTD. 21-260	LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	180.1	61

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
INTER-COUNTY MILK TRANSPORT LIMITED	LOT 23, CONCESSION B PEEL TOWNSHIP ON	180.1	<u>61</u>
INTER-COUNTY MILK TRANSPORT INC.	LOT 23, CONCESSION B R.R.#1 ARTHUR ON N0G 1A0	180.1	<u>61</u>
INTER-COUNTY MILK TRANSPORT INC.	LOT 23, CONCESSION B R.R.#1 ARTHUR ON	180.1	<u>61</u>
INTER-COUNTY MILK TRANSPORT LTD.	LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	180.1	<u>61</u>
Dr Andrew Kim	231 Eliza Street Arthur ON N0G1A0	440.8	<u>73</u>
Arthur Dental	231 Eliza Street Arthur ON N0G1A0	440.8	<u>73</u>
Arthur Dental	231 Eliza Street Arthur ON N0G1A0	440.8	<u>73</u>
Upper Grand District School Board	Arthur Public School 141 Eliza Street Arthur ON	333.4	<u>93</u>

HINC - TSSA Historic Incidents

A search of the HINC database, dated 2006-June 2009* has found that there are 1 HINC site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	INTERSECTION OF WELLINGTON COUNTY ROAD 109 & HIGHWAY 6 ARTHUR ON	170.5	<u>75</u>

PES - Pesticide Register

A search of the PES database, dated Oct 2011- Aug 31, 2021 has found that there are 2 PES site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
2131240 ONTARIO LTD	7580 W. GARAFRAXA 1ST LINE RR 3 ARTHUR ON N0G 1A0	103.5	<u>6</u>
2131240 ONTARIO LTD	7580 W. GARAFRAXA 1ST LINE RR 3 ARTHUR ON N0G 1A0	103.5	<u>6</u>

PINC - Pipeline Incidents

A search of the PINC database, dated May 31, 2021 has found that there are 2 PINC site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
PIPELINE HIT 2"	7999 WELLINGTON RD 109,,ARTHUR,ON,, CA ON	270.9	<u>101</u>
ENBRIDGE GAS INC	270 GEORGE ST,,ARTHUR,ON,N0G 1A0,CA ON	479.8	<u>110</u>

PRT - Private and Retail Fuel Storage Tanks

A search of the PRT database, dated 1989-1996* has found that there are 6 PRT site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP ON	180.1	<u>61</u>
PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRA	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR ON	143.7	<u>62</u>
GULLWING PETROLEUMS INC	HWY 6 & 9 CORNERS ARTHUR ON	143.7	<u>62</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
1121113 ONTARIO INC ROYAL T GAS BAR	131 CATHERINE ST ARTHUR ON	261.5	99
CK'S CHICKEN RESTAURANT LIMITED PETRO CANADA	131 CATHERINE ST ARTHUR ON	261.5	99
CK'S CHICKEN CHICKEN RESTAURANTS LTD	131 CATHERINE ST ARTHUR ON	261.5	99

RST - Retail Fuel Storage Tanks

A search of the RST database, dated 1999-Sep 30, 2021 has found that there are 10 RST site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
LL SNACK EXPRESS	8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	96.4	49
PIONEER ENERGY LP	8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	96.4	49
PIONEER SNACK EXPRESS	8006 WELLINGTON RD 109 ARTHUR ON N0G1A0	96.4	49
PIONEER PETROLIUM INC	8006 WELLINGTON ROAD 109 FERGUS ON N0G 1A0	96.4	49
PIONEER PETROLIUM INC	8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	96.4	49
ESSO ARTHUR	7643 6 HWY ARTHUR ON N0G 1A0	133.5	60
ESSO ARTHUR	7643 6 HWY ARTHUR ON N0G1A0	133.5	60

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
ESSO	7643 6 HWY ARTHUR ON N0G1A0	133.5	60
CANGO PETROLEUMS	HWY 6 ARTHUR ON N0G 1A0	143.7	62
PETRO CANADA	131 CATHERINE W ARTHUR ON N0G1A0	261.5	99

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 2 SCT site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Copernicus Educational Product	8194 County Road 109 RR 3 Arthur ON N0G 1A0	6.0	34
Copernicus Educational Products Inc.	8194 County Rd 109 RR 3 Arthur ON	6.0	34

SPL - Ontario Spills

A search of the SPL database, dated 1988-Aug 2020 has found that there are 37 SPL site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
ONTARIO CLEAN WATER AGENCY	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	139.7	23
MOE	WELL ST. PUMPING ST'N. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	WELLS ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
MOE	BELLTHREAD PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	WELLS STREET PUMPING STATION TO CONESTOGA R. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
MINISTRY OF THE ENVIRONMENT	GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONOSTOGO LAKE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MOE	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	CONESTOGO RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR TWP. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	139.7	24
MINISTRY OF THE ENVIRONMENT	ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	139.7	24

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
MINISTRY OF THE ENVIRONMENT	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	139.7	<u>24</u>
ONTARIO CLEAN WATER AGENCY	CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET WELLINGTON NORTH TOWNSHIP ON	139.7	<u>24</u>
TRANSPORT TRUCK	HWY 9 & HWY 6 MOTOR VEHICLE (OPERATING FLUID) ARTHUR VILLAGE ON	170.2	<u>74</u>
MAPLE LODGE FARMS	INTERSECTION OF HWY 6 AND HWY 9 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	170.2	<u>74</u>
MAPLE LODGE FARMS	INTERSECTION OF HWY. #9 AND HWY #6 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	170.2	<u>74</u>
CANGO PETROLEUMS LTD.	CANGO GAS STATION AT THE CORNER OF HWY. 6 & HWY. 9 SERVICE STATION ARTHUR VILL. ON	170.2	<u>74</u>
UNKNOWN	CORNER OF HWY. 6 & 9 ARTHUR VILL. ON	170.2	<u>74</u>
	The Corner of Highway 6 and 109 Wellington Rd., Arthur Wellington North ON	170.2	<u>74</u>
Pioneer Petroleum<UNOFFICIAL>	Hwy 6 & Hwy 109 Wellington North ON	170.2	<u>74</u>
United Petroleum Transport	7994 Wellington Rd 109, Arthur Wellington North ON	258.6	<u>97</u>
Union Gas Limited	7999 Wellington Road 109, Arthur Wellington North ON	270.9	<u>101</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
s.21<UNOFFICIAL>	7995 Wellington Road 109 Wellington North ON	295.1	104

WWIS - Water Well Information System

A search of the WWIS database, dated Apr 30, 2021 has found that there are 87 WWIS site(s) within approximately 0.50 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON <i>Well ID: 7052875</i>	218.9	1
	8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON <i>Well ID: 7052876</i>	242.3	2
	lot 2 con 1 ON <i>Well ID: 6709487</i>	38.9	3
	lot 3 con 1 ON <i>Well ID: 6703000</i>	278.5	4
	lot 36 con 1 ON <i>Well ID: 6705781</i>	39.1	5
	7580 1ST LINE ARTHUR ON <i>Well ID: 7276934</i>	81.3	7
	7580 1ST LINE ARTHUR ON <i>Well ID: 7276935</i>	84.7	8
	FIRE #7572 lot 36 con 1 ON <i>Well ID: 6715955</i>	197.8	9
	lot 36 con 2 ON	403.1	10

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 6712920		
	7580 FIRST LINE ARTHUR ON	140.4	<u>11</u>
	<i>Well ID:</i> 7281837		
	lot 4 con 1 ON	57.8	<u>12</u>
	<i>Well ID:</i> 6703001		
	FIRE # 7556 lot 25 con 1 ARTHUR ON	421.7	<u>13</u>
	<i>Well ID:</i> 6716013		
	lot 3 con 1 ON	428.0	<u>14</u>
	<i>Well ID:</i> 6702999		
	lot 4 con 1 ON	107.8	<u>15</u>
	<i>Well ID:</i> 6705948		
	lot 2 con 1 ON	80.8	<u>16</u>
	<i>Well ID:</i> 6705119		
	8096 HWY. 109 lot 36 con 1 ARTHUR ON	173.6	<u>17</u>
	<i>Well ID:</i> 7263957		
	lot 37 con 1 ON	15.0	<u>18</u>
	<i>Well ID:</i> 6706459		
	lot 2 con 1 ON	82.8	<u>19</u>
	<i>Well ID:</i> 6708240		
	lot 35 con 2 ON	69.0	<u>20</u>
	<i>Well ID:</i> 6709272		
	211 ELIZA ST ARTHUR ON	220.5	<u>26</u>
	<i>Well ID:</i> 7331059		

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 2 con 1 ON <i>Well ID:</i> 6704343	72.5	<u>27</u>
	lot 34 con 2 ON <i>Well ID:</i> 6710271	35.2	<u>28</u>
	lot 35 con 2 ON <i>Well ID:</i> 6713103	55.8	<u>29</u>
	lot 37 con 1 ON <i>Well ID:</i> 6708870	66.7	<u>30</u>
	lot 37 con 1 ON <i>Well ID:</i> 6703483	30.3	<u>31</u>
	lot 35 con 2 ON <i>Well ID:</i> 6702902	68.6	<u>32</u>
	lot 5 con 1 ON <i>Well ID:</i> 6703002	209.7	<u>33</u>
	lot 34 con 2 ON <i>Well ID:</i> 6708747	165.7	<u>35</u>
	JONES BASELINE RR#1 lot 33 con 1 ARTHUR ON <i>Well ID:</i> 7044991	490.0	<u>36</u>
	211 ELIZA ST ARTHUR ON <i>Well ID:</i> 7331058	347.9	<u>37</u>
	109 WELLINGTON RD ARTHUR ON <i>Well ID:</i> 7158779	4.4	<u>38</u>
	211 ELIZA ST ARTHUR ON	20.3	<u>39</u>

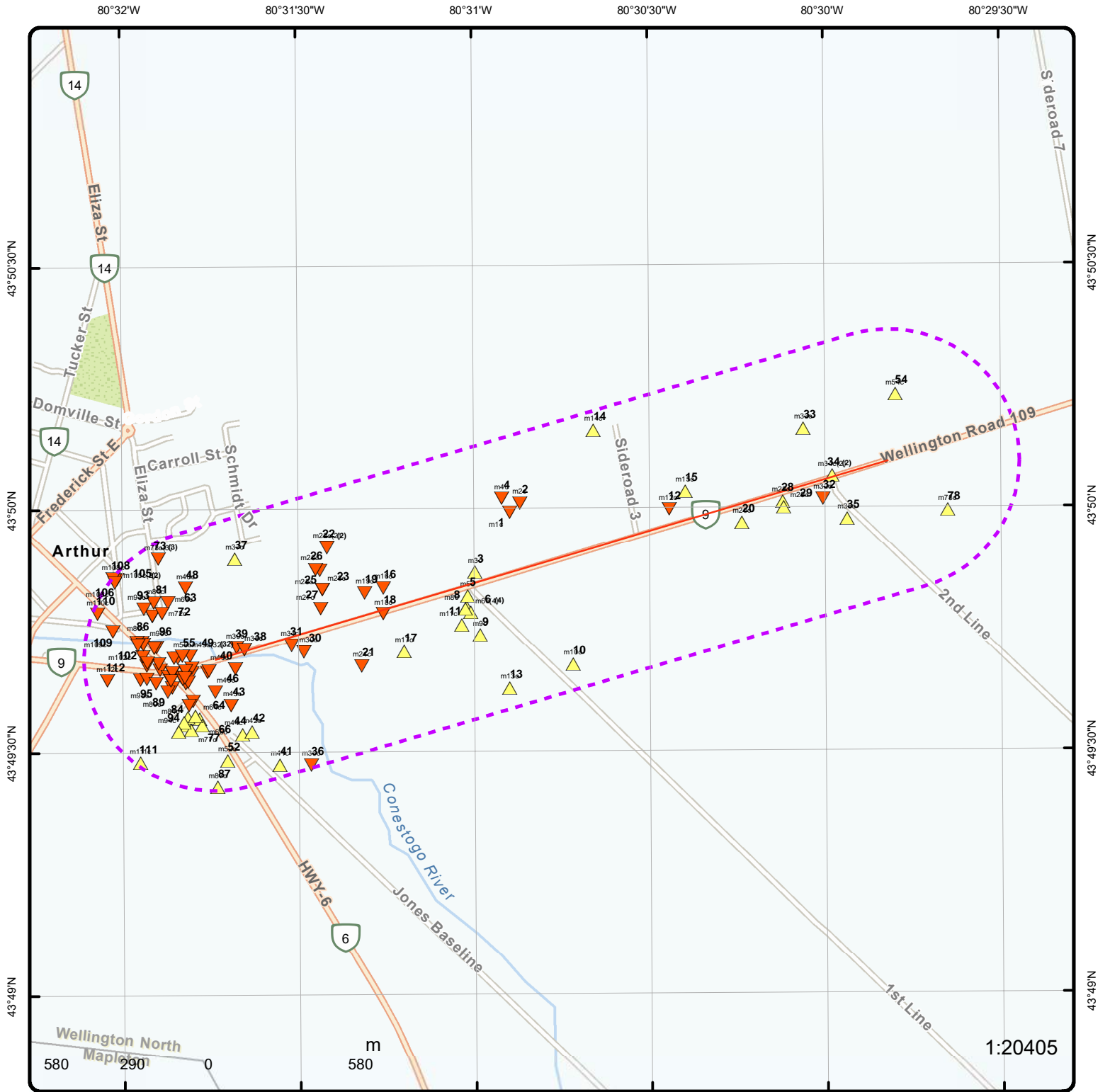
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 7331060		
	ON	55.6	<u>40</u>
	<i>Well ID:</i> 7171480		
	JONES BASELINE lot 33 con 1 ARTHUR ON	454.9	<u>41</u>
	<i>Well ID:</i> 7044990		
	lot 36 con 1 ON	303.9	<u>42</u>
	<i>Well ID:</i> 6706605		
	lot 37 con 1 ON	185.3	<u>43</u>
	<i>Well ID:</i> 6703273		
	lot 37 con 1 ON	303.9	<u>44</u>
	<i>Well ID:</i> 6708594		
	lot 37 con 1 ON	49.1	<u>45</u>
	<i>Well ID:</i> 6712213		
	lot 37 con 1 ON	49.1	<u>45</u>
	<i>Well ID:</i> 6712214		
	lot 37 con 1 ON	123.0	<u>46</u>
	<i>Well ID:</i> 6702883		
	lot 37 con 1 ON	55.4	<u>47</u>
	<i>Well ID:</i> 6702882		
	211 ELISA ST lot 1 con 1 ARTHUR ON	294.4	<u>48</u>
	<i>Well ID:</i> 7263086		
	7643 HWY 6 ARTHUR ON	94.1	<u>50</u>
	<i>Well ID:</i> 7210892		

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	ON <i>Well ID: 7276127</i>	101.0	<u>51</u>
	lot 22 con B ON <i>Well ID: 6701957</i>	387.0	<u>52</u>
	7643 HWY 6 ARTHUR ON <i>Well ID: 7161023</i>	118.4	<u>53</u>
	lot 6 con 1 ON <i>Well ID: 6703003</i>	253.9	<u>54</u>
	ON <i>Well ID: 7228721</i>	125.5	<u>55</u>
	7643 HWY 6 ARTHUR ON <i>Well ID: 7161022</i>	119.7	<u>56</u>
	7643 HWY 6 ARTHUR ON <i>Well ID: 7210891</i>	121.0	<u>57</u>
	7641 HIGHWAY 6 lot 37 con 1 ARTHUR ON <i>Well ID: 7183961</i>	134.0	<u>58</u>
	7643 HWY 6 ARTHUR ON <i>Well ID: 7161021</i>	132.4	<u>59</u>
	211 ELIZA ST. EAST ARTHUR ON <i>Well ID: 6715886</i>	282.5	<u>63</u>
	lot 23 con B ON <i>Well ID: 6706945</i>	232.5	<u>64</u>
	ON	141.8	<u>65</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 6712922		
	lot 23 con B ON	255.7	<u>66</u>
	<i>Well ID:</i> 6709740		
	7643 HWY 6 ARTHUR ON	144.7	<u>67</u>
	<i>Well ID:</i> 7210895		
	7643 HWY 6 ARTHUR ON	144.7	<u>68</u>
	<i>Well ID:</i> 7210893		
	COUNTY RD 109 ARTHUR ON	156.8	<u>70</u>
	<i>Well ID:</i> 6715657		
	ON	268.5	<u>72</u>
	<i>Well ID:</i> 7149905		
	7636 HWY 6 ARTHUR ON	243.3	<u>76</u>
	<i>Well ID:</i> 7123321		
	7636 HWY 6 ARTHUR ON	283.6	<u>77</u>
	<i>Well ID:</i> 7123324		
	lot 34 con 3 ON	293.8	<u>78</u>
	<i>Well ID:</i> 6705263		
	lot 23 con B ON	187.0	<u>79</u>
	<i>Well ID:</i> 6701959		
	7636 HWY 6 ARTHUR ON	270.6	<u>80</u>
	<i>Well ID:</i> 7123323		
	41 ELIZA ST ARTHUR ON	318.2	<u>81</u>
	<i>Well ID:</i> 7042081		

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	7999 WORINGTON RD 109 ARTHUR ON <i>Well ID: 6715824</i>	188.9	<u>83</u>
	7636 HWY 6 ARTHUR ON <i>Well ID: 7123322</i>	267.8	<u>84</u>
	211 ELIZA ST ARTHUR ON <i>Well ID: 7331057</i>	290.2	<u>85</u>
	211 ELIZA ST ARTHUR ON <i>Well ID: 7331056</i>	291.6	<u>86</u>
	7598 HIGHWAY 6 lot 22 con B ON <i>Well ID: 7187029</i>	486.1	<u>87</u>
	7994 WELLINGTON RD 109 ARTHUR ON <i>Well ID: 7281679</i>	228.6	<u>88</u>
	lot 23 con B ON <i>Well ID: 6712367</i>	218.3	<u>89</u>
	7994 WELLINGTON RD ARTHUR ON <i>Well ID: 7145549</i>	215.3	<u>90</u>
	7994 WELLINGTON ROAD ARTHUR ON <i>Well ID: 7163864</i>	213.5	<u>91</u>
	7994 WELLINGTON RD 109 ON EAST SIDE OF HWY 6 ARTHUR ON <i>Well ID: 7220861</i>	235.5	<u>92</u>
	lot 23 con A ON <i>Well ID: 6703367</i>	308.0	<u>94</u>
	7995 WELLINGTON RD 109 lot 23 con B ARTHUR ON	243.8	<u>95</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 7187196		
	ON	275.9	100
	<i>Well ID:</i> 7163571		
	244 ISABELLA lot 29 con 1 ARTHUR ON	482.4	105
	<i>Well ID:</i> 7363656		
	244 ISABELLA lot 29 con 1 ARTHUR ON	482.4	105
	<i>Well ID:</i> 7360349		
	242 ISABELLA lot 29 con 1 ARTHUR ON	481.8	106
	<i>Well ID:</i> 7360352		
	242 ISABELLA lot 29 con 1 ARTHUR ON	488.9	107
	<i>Well ID:</i> 7360351		
	242 ISABELLA lot 29 con 1 ARTHUR ON	496.7	108
	<i>Well ID:</i> 7360350		
	ON	402.4	109
	<i>Well ID:</i> 6700002		
	lot 23 con B ON	485.4	111
	<i>Well ID:</i> 6701960		
	lot 23 con B ON	417.6	112
	<i>Well ID:</i> 6701958		



Map: 0.5 Kilometer Radius

Order Number: 21111900102
 Address: Wellington Road 109, Arthur, ON



Project Property	Freeways; Highways	Beach	Shopping & Sports Area
Buffer Outline	Traffic Circle; Ramp	Airport	University/College
Eris Sites with Higher Elevation	Major Arterial; Minor Arterial	Industrial Area	Cemetery; Golf Course
Eris Sites with Same Elevation	Local Road	Military Base	Park (National)
Eris Sites with Lower Elevation	Service Road; Traffic Circle; Ramp	Aircraft Roads	Park (City/County)
Eris Sites with Unknown Elevation	Rail	Native Reservation	Hospital

80°31'30"W

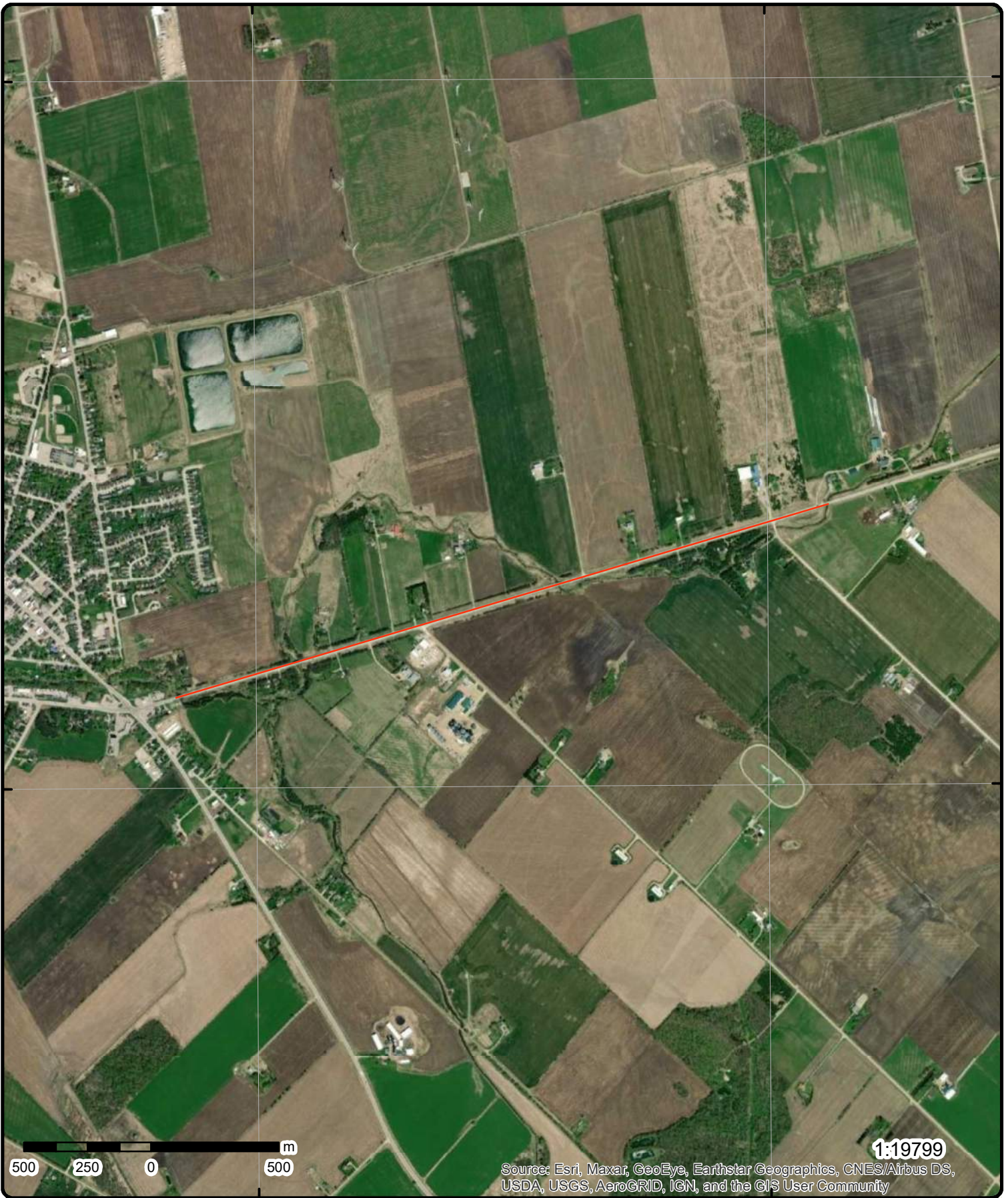
80°30'W

43°51'N

43°51'N

43°49'30"N

43°49'30"N



500 250 0 500 m

1:19799

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Aerial Year: 2018

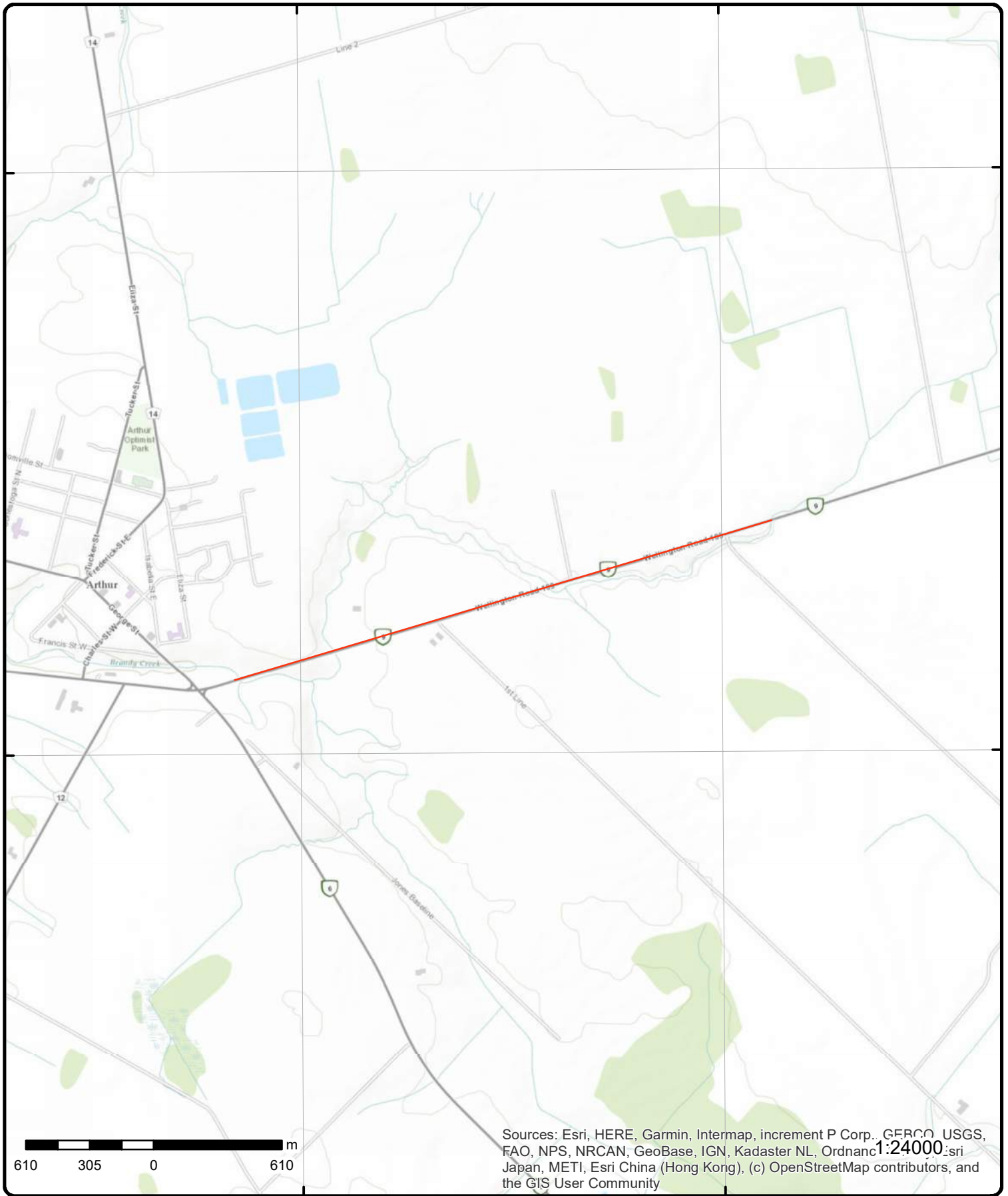
Order Number: 21111900102

Address: Wellington Road 109, Arthur, ON



Source: ESRI World Imagery

© ERIS Information Limited Partnership



Topographic Map

Order Number: 21111900102

Address: Wellington Road 109, ON



Source: ESRI World Topographic Map

© ERIS Information Limited Partnership

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>1</u>	1 of 1	NW/218.9	461.6 / -3.22	8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON	WWIS

<p>Well ID: 7052875</p> <p>Construction Date:</p> <p>Primary Water Use:</p> <p>Sec. Water Use:</p> <p>Final Well Status: Abandoned-Supply</p> <p>Water Type:</p> <p>Casing Material:</p> <p>Audit No: Z61555</p> <p>Tag: _NO_TAG</p> <p>Construction Method:</p> <p>Elevation (m):</p> <p>Elevation Reliability:</p> <p>Depth to Bedrock:</p> <p>Well Depth:</p> <p>Overburden/Bedrock:</p> <p>Pump Rate:</p> <p>Static Water Level:</p> <p>Flowing (Y/N):</p> <p>Flow Rate:</p> <p>Clear/Cloudy:</p>	<p>Data Entry Status:</p> <p>Data Src:</p> <p>Date Received: 11/26/2007</p> <p>Selected Flag: True</p> <p>Abandonment Rec:</p> <p>Contractor: 7146</p> <p>Form Version: 4</p> <p>Owner:</p> <p>Street Name: 8120 WELLINGTON RD 109 RR#3</p> <p>County: WELLINGTON</p> <p>Municipality: WEST LUTHER TOWNSHIP</p> <p>Site Info:</p> <p>Lot: 003</p> <p>Concession: 01</p> <p>Concession Name:</p> <p>Easting NAD83:</p> <p>Northing NAD83:</p> <p>Zone:</p> <p>UTM Reliability:</p>
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PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/705\7052875.pdf

Additional Detail(s) (Map)

Well Completed Date: 2007/11/13

Year Completed: 2007

Depth (m):

Latitude: 43.8331881795677

Longitude: -80.5149781339125

Path: 705\7052875.pdf

Bore Hole Information

<p>Bore Hole ID: 23052875</p> <p>DP2BR:</p> <p>Spatial Status:</p> <p>Code OB:</p> <p>Code OB Desc:</p> <p>Open Hole:</p> <p>Cluster Kind:</p> <p>Date Completed: 13-Nov-2007 00:00:00</p> <p>Remarks:</p> <p>Elevrc Desc:</p> <p>Location Source Date:</p> <p>Improvement Location Source:</p> <p>Improvement Location Method:</p> <p>Source Revision Comment:</p> <p>Supplier Comment:</p>	<p>Elevation: 465.301574</p> <p>Elevrc:</p> <p>Zone: 17</p> <p>East83: 538995.00</p> <p>North83: 4853460.00</p> <p>Org CS: UTM83</p> <p>UTMRC: 3</p> <p>UTMRC Desc: margin of error : 10 - 30 m</p> <p>Location Method: wwr</p>
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Overburden and Bedrock

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		1000057708			
Layer:		1			
Color:					
General Color:					
Mat1:					
Most Common Material:					
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:					
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1000057709			
Layer:		1			
Plug From:		0			
Plug To:		6			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1000057710			
Layer:		2			
Plug From:					
Plug To:					
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1000057713			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1000057706			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1000057712			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:					
Screen Diameter UOM:					
Screen Diameter:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Results of Well Yield Testing					
Pump Test ID:		1000057707			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:		LPM			
Water State After Test Code:		0			
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
Water Details					
Water ID:		1000057711			
Layer:		1			
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			

2	1 of 1	NW/242.3	457.8 / -7.08	8120 WELLINGTON RD 109 RR#3 lot 3 con 1 ARTHUR ON	WWIS
Well ID:	7052876			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	11/26/2007
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Supply			Abandonment Rec:	
Water Type:				Contractor:	7146
Casing Material:				Form Version:	4
Audit No:	Z61549			Owner:	
Tag:	_NO_TAG			Street Name:	8120 WELLINGTON RD 109 RR#3
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	003
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/705\7052876.pdf				

Additional Detail(s) (Map)					
Well Completed Date:	2007/11/13				
Year Completed:	2007				
Depth (m):					
Latitude:	43.8335102440816				
Longitude:	-80.5144904392951				
Path:	705\7052876.pdf				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	23052876			Elevation:	462.837036
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	539034.00
Code OB Desc:				North83:	4853496.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	3
Date Completed:	13-Nov-2007 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1000057718				
Layer:	1				
Color:					
General Color:					
Mat1:					
Most Common Material:					
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:					
Formation End Depth UOM:	m				
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:	1000057719				
Layer:	1				
Plug From:	0				
Plug To:	10				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:	1000057720				
Layer:	2				
Plug From:					
Plug To:					
Plug Depth UOM:	m				
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:	1000057723				
Method Construction Code:					
Method Construction:					
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Pipe Information</u>					
Pipe ID:		1000057716			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1000057722			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:					
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1000057717			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:		LPM			
Water State After Test Code:		0			
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Water Details</u>					
Water ID:		1000057721			
Layer:		1			
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			

3

1 of 1

W/38.9

466.9 / 2.03

lot 2 con 1
ON

WWIS

Well ID: 6709487
 Construction Date:
 Primary Water Use: Domestic
 Sec. Water Use: 0
 Final Well Status: Water Supply
 Water Type:
 Casing Material:
 Audit No: 39106
 Tag:
 Construction Method:
 Elevation (m):
 Elevation Reliability:

Data Entry Status:
 Data Src: 1
 Date Received: 12/29/1988
 Selected Flag: True
 Abandonment Rec:
 Contractor: 4854
 Form Version: 1
 Owner:
 Street Name:
 County: WELLINGTON
 Municipality: WEST LUTHER TOWNSHIP
 Site Info:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth to Bedrock:				Lot:	002
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6709487.pdf

Additional Detail(s) (Map)

Well Completed Date: 1988/10/04
Year Completed: 1988
Depth (m): 13.4112
Latitude: 43.8311513408422
Longitude: -80.5166339074833
Path: 670\6709487.pdf

Bore Hole Information

Bore Hole ID:	10473336	Elevation:	468.942291
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	538863.20
Code OB Desc:	Overburden	North83:	4853233.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	04-Oct-1988 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932643743
Layer: 2
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 05
Mat2 Desc: CLAY
Mat3: 81
Mat3 Desc: SANDY
Formation Top Depth: 8.0
Formation End Depth: 10.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 932643744
Layer: 3
Color: 6
General Color: BROWN

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			10.0		
Formation End Depth:			17.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932643746		
Layer:			5		
Color:			3		
General Color:			BLUE		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			20.0		
Formation End Depth:			33.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932643747		
Layer:			6		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			13		
Mat2 Desc:			BOULDERS		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			33.0		
Formation End Depth:			44.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932643745		
Layer:			4		
Color:			6		
General Color:			BROWN		
Mat1:			28		
Most Common Material:			SAND		
Mat2:			05		
Mat2 Desc:			CLAY		
Mat3:			81		
Mat3 Desc:			SANDY		
Formation Top Depth:			17.0		
Formation End Depth:			20.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Materials Interval

Formation ID: 932643742
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 8.0
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID: 966709487
Method Construction Code: 6
Method Construction: Boring
Other Method Construction:

Pipe Information

Pipe ID: 11021906
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930770568
Layer: 1
Material: 2
Open Hole or Material: GALVANIZED
Depth From:
Depth To: 44
Casing Diameter: 30
Casing Diameter UOM: inch
Casing Depth UOM: ft

Water Details

Water ID: 933962908
Layer: 1
Kind Code: 5
Kind: Not stated
Water Found Depth: 17.0
Water Found Depth UOM: ft

4

1 of 1

NW/278.5

458.4 / -6.45

lot 3 con 1
ON

WWIS

Well ID: 6703000
Construction Date:
Primary Water Use: Livestock
Sec. Water Use: Domestic
Final Well Status: Water Supply
Water Type:
Casing Material:

Data Entry Status:
Data Src: 1
Date Received: 3/22/1965
Selected Flag: True
Abandonment Rec:
Contractor: 3316
Form Version: 1

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	003
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703000.pdf

Additional Detail(s) (Map)

Well Completed Date: 1965/03/09
Year Completed: 1965
Depth (m): 98.7552
Latitude: 43.8336669876077
Longitude: -80.5153573506619
Path: 670\6703000.pdf

Bore Hole Information

Bore Hole ID:	10467143	Elevation:	462.857727
DP2BR:	242.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	538964.20
Code OB Desc:	Bedrock	North83:	4853513.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	09-Mar-1965 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932616140
Layer: 4
Color:
General Color:
Mat1: 11
Most Common Material: GRAVEL
Mat2: 12
Mat2 Desc: STONES
Mat3:
Mat3 Desc:
Formation Top Depth: 180.0
Formation End Depth: 215.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932616141			
Layer:		5			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		215.0			
Formation End Depth:		235.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616138			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		40.0			
Formation End Depth:		60.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616144			
Layer:		8			
Color:		1			
General Color:		WHITE			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		265.0			
Formation End Depth:		324.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616139			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		60.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:			180.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616142		
Layer:			6		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			235.0		
Formation End Depth:			242.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616143		
Layer:			7		
Color:			3		
General Color:			BLUE		
Mat1:			26		
Most Common Material:			ROCK		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			242.0		
Formation End Depth:			265.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616137		
Layer:			1		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			40.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well Use</u>					
Method Construction ID:			966703000		
Method Construction Code:			1		
Method Construction:			Cable Tool		
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Pipe Information</u>					
Pipe ID:		11015713			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930759831			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		246			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930759832			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		324			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996703000			
Pump Set At:					
Static Level:		40.0			
Final Level After Pumping:		60.0			
Recommended Pump Depth:		70.0			
Pumping Rate:		10.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		2			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933955377			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		315.0			
Water Found Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well ID:	6705781			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Commerical			Date Received:	12/9/1975
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	4856
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	036
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6705781.pdf

Additional Detail(s) (Map)

Well Completed Date: 1975/10/01
Year Completed: 1975
Depth (m): 62.484
Latitude: 43.8303425546432
Longitude: -80.5170011209632
Path: 670\6705781.pdf

Bore Hole Information

Bore Hole ID:	10469870	Elevation:	468.884887
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	0	East83:	538834.20
Code OB Desc:	Overburden	North83:	4853143.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	01-Oct-1975 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932627804
Layer: 3
Color: 6
General Color: BROWN
Mat1: 11
Most Common Material: GRAVEL
Mat2: 28
Mat2 Desc: SAND
Mat3: 05
Mat3 Desc: CLAY

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation Top Depth:			170.0		
Formation End Depth:			187.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932627805		
Layer:			4		
Color:			6		
General Color:			BROWN		
Mat1:			29		
Most Common Material:			FINE GRAVEL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			187.0		
Formation End Depth:			205.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932627803		
Layer:			2		
Color:			2		
General Color:			GREY		
Mat1:			14		
Most Common Material:			HARDPAN		
Mat2:			13		
Mat2 Desc:			BOULDERS		
Mat3:			11		
Mat3 Desc:			GRAVEL		
Formation Top Depth:			14.0		
Formation End Depth:			170.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932627802		
Layer:			1		
Color:			6		
General Color:			BROWN		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			13		
Mat2 Desc:			BOULDERS		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			14.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well Use</u>					
Method Construction ID:			966705781		
Method Construction Code:			4		
Method Construction:			Rotary (Air)		
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Pipe Information

Pipe ID: 11018440
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930764588
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 190
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930764589
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 205
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996705781
Pump Set At:
Static Level: 49.0
Final Level After Pumping: 75.0
Recommended Pump Depth: 75.0
Pumping Rate: 30.0
Flowing Rate:
Recommended Pump Rate: 5.0
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 1
Pumping Duration MIN: 30
Flowing: No

Draw Down & Recovery

Pump Test Detail ID: 934342558
Test Type: Draw Down
Test Duration: 15
Test Level: 75.0
Test Level UOM: ft

Draw Down & Recovery

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test Detail ID: 934618763					
Test Type: Draw Down					
Test Duration: 30					
Test Level: 75.0					
Test Level UOM: ft					
<u>Draw Down & Recovery</u>					
Pump Test Detail ID: 934871594					
Test Type: Draw Down					
Test Duration: 45					
Test Level: 75.0					
Test Level UOM: ft					
<u>Draw Down & Recovery</u>					
Pump Test Detail ID: 935138014					
Test Type: Draw Down					
Test Duration: 60					
Test Level: 75.0					
Test Level UOM: ft					
<u>Water Details</u>					
Water ID: 933958618					
Layer: 1					
Kind Code: 1					
Kind: FRESH					
Water Found Depth: 203.0					
Water Found Depth UOM: ft					

6 1 of 4 WSW/103.5 467.9 / 3.08 2131240 ONTARIO LTD
7580 W. GARAFRAXA 1ST LINE RR 3
ARTHUR ON N0G 1A0 PES

Detail Licence No:		Operator Box: 820
Licence No:		Operator Class:
Status:		Operator No:
Approval Date:		Operator Type:
Report Source:		Oper Area Code:
Licence Type: Vendor		Oper Phone No:
Licence Type Code:		Operator Ext:
Licence Class:		Operator Lot:
Licence Control:		Oper Concession:
Latitude:		Operator Region:
Longitude:		Operator District:
Lot:		Operator County:
Concession:		Op Municipality:
Region:		Post Office Box:
District:		MOE District:
County:		SWP Area Name:
Trade Name:		
PDF Link:		

6 2 of 4 WSW/103.5 467.9 / 3.08 2131240 ONTARIO LTD
7580 W. GARAFRAXA 1ST LINE RR 3
ARTHUR ON N0G 1A0 PES

Detail Licence No: 23-01-16030-0	Operator Box: 820
Licence No:	Operator Class:
Status:	Operator No:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<p> Approval Date: Report Source: Licence Type: LIMITED Licence Type Code: Licence Class: Licence Control: Latitude: Longitude: Lot: Concession: Region: District: County: Trade Name: PDF Link: </p> <p> Operator Type: Oper Area Code: Oper Phone No: Operator Ext: Operator Lot: Oper Concession: Operator Region: Operator District: Operator County: Op Municipality: Post Office Box: MOE District: SWP Area Name: </p>					
6	3 of 4	WSW/103.5	467.9 / 3.08	7580 1 Line Wellington North ON N0G1A0	EHS
<p> Order No: 20160421036 Status: C Report Type: Custom Report Report Date: 26-APR-16 Date Received: 21-APR-16 Previous Site Name: Lot/Building Size: Additional Info Ordered: </p> <p> Nearest Intersection: Municipality: Client Prov/State: ON Search Radius (km): .25 X: -80.517305 Y: 43.829804 </p>					
6	4 of 4	WSW/103.5	467.9 / 3.08	ARTHUR HOME HARDWARE BUILDING CENTRE 7580 FIRST LINE ARTHUR ON N0G 1A0	GEN
<p> Generator No: ON7579181 Status: Approval Years: 2016 Contam. Facility: No MHSW Facility: No SIC Code: 541990 SIC Description: ALL OTHER PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES </p> <p> PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin: </p>					
Detail(s)					
<p> Waste Class: 150 Waste Class Desc: INERT INORGANIC WASTES </p>					
7	1 of 1	WSW/81.3	467.4 / 2.61	7580 1ST LINE ARTHUR ON	WWIS
<p> Well ID: 7276934 Construction Date: Primary Water Use: Monitoring and Test Hole Sec. Water Use: 0 Final Well Status: Monitoring and Test Hole Water Type: Casing Material: Audit No: Z245645 Tag: A211453 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: </p> <p> Data Entry Status: Data Src: Date Received: 12/12/2016 Selected Flag: True Abandonment Rec: Contractor: 7241 Form Version: 7 Owner: Street Name: 7580 1ST LINE County: WELLINGTON Municipality: ARTHUR VILLAGE Site Info: A0-A01 Lot: </p>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:	

PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2016/11/09
Year Completed: 2016
Depth (m): 4.2672
Latitude: 43.8299375672248
Longitude: -80.5170441865127
Path:

Bore Hole Information

Bore Hole ID:	1006304605	Elevation:	468.531311
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	538831.00
Code OB Desc:		North83:	4853098.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	09-Nov-2016 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1006483769
Layer: 4
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2: 06
Mat2 Desc: SILT
Mat3:
Mat3 Desc:
Formation Top Depth: 13.0
Formation End Depth: 14.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 1006483767
Layer: 2
Color: 6
General Color: BROWN
Mat1: 06

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:					
Mat2:		SILT			
Mat2 Desc:		05			
Mat3:		CLAY			
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		12.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1006483766			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1006483768			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		12.0			
Formation End Depth:		13.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1006483777			
Layer:		1			
Plug From:		0			
Plug To:		6			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1006483779			
Layer:		3			
Plug From:		3			
Plug To:		14			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Sealing Record</u>					
Plug ID:		1006483778			
Layer:		2			
Plug From:		6			
Plug To:		3			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006483776			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:		DIRECT PUSH			
<u>Pipe Information</u>					
Pipe ID:		1006483765			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1006483773			
Layer:		1			
Slot:		10			
Screen Top Depth:		4			
Screen End Depth:		14			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2.25			
<u>Water Details</u>					
Water ID:		1006483771			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1006483770			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		14.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

8

1 of 1

WSW/84.7

467.4 / 2.61

7580 1ST LINE
ARTHUR ON

WWIS

Well ID: 7276935
 Construction Date:
 Primary Water Use: Monitoring and Test Hole
 Sec. Water Use: 0
 Final Well Status: Monitoring and Test Hole

Data Entry Status:
 Data Src:
 Date Received: 12/12/2016
 Selected Flag: True
 Abandonment Rec:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Type: Casing Material: Audit No: Z245646 Tag: A211454 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Contractor: 7241 Form Version: 7 Owner: Street Name: 7580 1ST LINE County: WELLINGTON Municipality: ARTHUR VILLAGE Site Info: A0-A01 Lot: Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		2016/11/09			
Year Completed:		2016			
Depth (m):		4.2672			
Latitude:		43.8298928127042			
Longitude:		-80.5171067341764			
Path:					
<u>Bore Hole Information</u>					
Bore Hole ID:		1006304608		Elevation: 468.434173	
DP2BR:				Elevrc:	
Spatial Status:				Zone: 17	
Code OB:				East83: 538826.00	
Code OB Desc:				North83: 4853093.00	
Open Hole:				Org CS: UTM83	
Cluster Kind:				UTMRC: 4	
Date Completed:		09-Nov-2016 00:00:00		UTMRC Desc: margin of error : 30 m - 100 m	
Remarks:				Location Method: wwr	
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1006483782			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		11.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1006483781			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1006483783			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		11.0			
Formation End Depth:		12.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1006483784			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		12.0			
Formation End Depth:		14.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006483793			
Layer:		2			
Plug From:		6			
Plug To:		3			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug ID:		1006483794			
Layer:		3			
Plug From:		3			
Plug To:		14			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006483792			
Layer:		1			
Plug From:		0			
Plug To:		6			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006483795			
Layer:		4			
Plug From:					
Plug To:					
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006483791			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:		DIRECT PUSH			
<u>Pipe Information</u>					
Pipe ID:		1006483780			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1006483788			
Layer:		1			
Slot:		10			
Screen Top Depth:		4			
Screen End Depth:		14			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2.25			
<u>Water Details</u>					
Water ID:		1006483786			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Hole Diameter

Hole ID: 1006483785
Diameter: 6.0
Depth From: 0.0
Depth To: 14.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

9 1 of 1 SW/197.8 467.9 / 3.03 FIRE #7572 lot 36 con 1 ON WWIS

Well ID: 6715955	Data Entry Status:
Construction Date:	Data Src:
Primary Water Use: Domestic	Date Received: 10/27/2006
Sec. Water Use:	Selected Flag: True
Final Well Status: Water Supply	Abandonment Rec:
Water Type:	Contractor: 2576
Casing Material:	Form Version: 3
Audit No: Z48861	Owner:
Tag: A024950	Street Name: FIRE #7572
Construction Method:	County: WELLINGTON
Elevation (m):	Municipality: WEST GARAFRAXA TOWNSHIP
Elevation Reliability:	Site Info:
Depth to Bedrock:	Lot: 036
Well Depth:	Concession: 01
Overburden/Bedrock:	Concession Name: CON
Pump Rate:	Easting NAD83:
Static Water Level:	Northing NAD83:
Flowing (Y/N):	Zone:
Flow Rate:	UTM Reliability:
Clear/Cloudy:	

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6715955.pdf

Additional Detail(s) (Map)

Well Completed Date: 2006/09/05
Year Completed: 2006
Depth (m): 65.8368
Latitude: 43.8289804658128
Longitude: -80.5164051714036
Path: 671\6715955.pdf

Bore Hole Information

Bore Hole ID: 11695737	Elevation: 467.982421
DP2BR:	Elevrc:
Spatial Status:	Zone: 17
Code OB: o	East83: 538883.00
Code OB Desc: Overburden	North83: 4852992.00
Open Hole:	Org CS: UTM83
Cluster Kind:	UTMRC: 3
Date Completed: 05-Sep-2006 00:00:00	UTMRC Desc: margin of error : 10 - 30 m
Remarks:	Location Method: wwr
Elevrc Desc:	
Location Source Date:	
Improvement Location Source:	
Improvement Location Method:	
Source Revision Comment:	
Supplier Comment:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082420		
Layer:			1		
Color:					
General Color:					
Mat1:			02		
Most Common Material:			TOPSOIL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			1.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082425		
Layer:			6		
Color:			6		
General Color:			BROWN		
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:			10		
Mat2 Desc:			COARSE SAND		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			203.0		
Formation End Depth:			216.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082423		
Layer:			4		
Color:			6		
General Color:			BROWN		
Mat1:			28		
Most Common Material:			SAND		
Mat2:			11		
Mat2 Desc:			GRAVEL		
Mat3:			05		
Mat3 Desc:			CLAY		
Formation Top Depth:			121.0		
Formation End Depth:			139.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082424		
Layer:			5		
Color:			6		
General Color:			BROWN		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			11		
Mat2 Desc:			GRAVEL		
Mat3:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3 Desc:					
Formation Top Depth:		139.0			
Formation End Depth:		203.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933082422			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		13.0			
Formation End Depth:		121.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933082421			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		13.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933308118			
Layer:		1			
Plug From:		0			
Plug To:		30			
Plug Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966715955			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11700603			
Casing No:		1			
Comment:					
Alt Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Construction Record - Casing</u>					
Casing ID:		930892172			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:		-2			
Depth To:		216			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		11704107			
Pump Set At:		10.0			
Static Level:		69.0			
Final Level After Pumping:					
Recommended Pump Depth:		100.0			
Pumping Rate:		15.0			
Flowing Rate:					
Recommended Pump Rate:		15.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:					
Flowing:					
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749102			
Test Type:		Recovery			
Test Duration:		1			
Test Level:		69.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749106			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		75.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749105			
Test Type:		Draw Down			
Test Duration:		5			
Test Level:		75.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749107			
Test Type:		Draw Down			
Test Duration:		25			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Level:		75.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749103			
Test Type:		Draw Down			
Test Duration:		2			
Test Level:		70.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749108			
Test Type:		Draw Down			
Test Duration:		40			
Test Level:		75.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11749104			
Test Type:		Draw Down			
Test Duration:		3			
Test Level:		71.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		934082074			
Layer:		1			
Kind Code:					
Kind:					
Water Found Depth:		210.0			
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		11760007			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		216.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

10	1 of 1	SSE/403.1	469.9 / 5.07	lot 36 con 2 ON	WWIS
Well ID:		6712920		Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:		Domestic		Date Received:	3/8/1999
Sec. Water Use:				Selected Flag:	True
Final Well Status:		Water Supply		Abandonment Rec:	
Water Type:				Contractor:	6865
Casing Material:				Form Version:	1
Audit No:		199093		Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	036

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well Depth:				Concession:	02
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6712920.pdf

Additional Detail(s) (Map)

Well Completed Date: 1998/12/26
Year Completed: 1998
Depth (m): 59.1312
Latitude: 43.8279803694762
Longitude: -80.5120093190229
Path: 671\6712920.pdf

Bore Hole Information

Bore Hole ID:	10476753	Elevation:	470.552978
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	539237.10
Code OB Desc:	Overburden	North83:	4852883.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	26-Dec-1998 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932659642
Layer: 8
Color: 6
General Color: BROWN
Mat1: 11
Most Common Material: GRAVEL
Mat2: 28
Mat2 Desc: SAND
Mat3:
Mat3 Desc:
Formation Top Depth: 190.0
Formation End Depth: 194.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932659641
Layer: 7
Color: 2
General Color: GREY
Mat1: 05

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:					
Mat2:		CLAY			
Mat2 Desc:		11			
Mat3:		GRAVEL			
Mat3 Desc:					
Formation Top Depth:		137.0			
Formation End Depth:		190.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659637			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		12.0			
Formation End Depth:		56.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659639			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		61.0			
Formation End Depth:		99.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659635			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932659636			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		12.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932659638			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		56.0			
Formation End Depth:		61.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932659640			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:		05			
Mat3 Desc:		CLAY			
Formation Top Depth:		99.0			
Formation End Depth:		137.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933211063			
Layer:		1			
Plug From:		0			
Plug To:		20			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966712920			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Method Construction Code:</i>	2				
<i>Method Construction:</i>		Rotary (Convent.)			
<i>Other Method Construction:</i>					
 <u>Pipe Information</u>					
<i>Pipe ID:</i>		11025323			
<i>Casing No:</i>		1			
<i>Comment:</i>					
<i>Alt Name:</i>					
 <u>Construction Record - Casing</u>					
<i>Casing ID:</i>		930776776			
<i>Layer:</i>		1			
<i>Material:</i>		1			
<i>Open Hole or Material:</i>		STEEL			
<i>Depth From:</i>					
<i>Depth To:</i>		194			
<i>Casing Diameter:</i>		6			
<i>Casing Diameter UOM:</i>		inch			
<i>Casing Depth UOM:</i>		ft			
 <u>Results of Well Yield Testing</u>					
<i>Pump Test ID:</i>		996712920			
<i>Pump Set At:</i>					
<i>Static Level:</i>		80.0			
<i>Final Level After Pumping:</i>		81.0			
<i>Recommended Pump Depth:</i>		70.0			
<i>Pumping Rate:</i>		10.0			
<i>Flowing Rate:</i>					
<i>Recommended Pump Rate:</i>		10.0			
<i>Levels UOM:</i>		ft			
<i>Rate UOM:</i>		GPM			
<i>Water State After Test Code:</i>		1			
<i>Water State After Test:</i>		CLEAR			
<i>Pumping Test Method:</i>					
<i>Pumping Duration HR:</i>		1			
<i>Pumping Duration MIN:</i>		0			
<i>Flowing:</i>		No			
 <u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>		934870718			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		45			
<i>Test Level:</i>		81.0			
<i>Test Level UOM:</i>		ft			
 <u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>		935131770			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		60			
<i>Test Level:</i>		81.0			
<i>Test Level UOM:</i>		ft			
 <u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>		934354430			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		81.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934618454			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		81.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933967499			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		194.0			
Water Found Depth UOM:		ft			

11	1 of 1	WSW/140.4	467.9 / 3.03	7580 FIRST LINE ARTHUR ON	WWIS
Well ID:		7281837		Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:		Test Hole		Date Received: 2/24/2017	
Sec. Water Use:		Monitoring		Selected Flag: True	
Final Well Status:		Monitoring and Test Hole		Abandonment Rec:	
Water Type:				Contractor: 7241	
Casing Material:				Form Version: 7	
Audit No:		Z211900		Owner:	
Tag:		A181627		Street Name: 7580 FIRST LINE	
Construction Method:				County: WELLINGTON	
Elevation (m):				Municipality: WEST GARAFRAXA TOWNSHIP	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					

Additional Detail(s) (Map)

Well Completed Date:	2017/01/25
Year Completed:	2017
Depth (m):	4.572
Latitude:	43.829335281282
Longitude:	-80.5172729133827
Path:	

Bore Hole Information

Bore Hole ID:	1006358582	Elevation:	467.845520
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Code OB:				East83:	538813.00
Code OB Desc:				North83:	4853031.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	25-Jan-2017 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 1006602099
Layer: 1
Color: 6
General Color: BROWN
Mat1: 11
Most Common Material: GRAVEL
Mat2: 08
Mat2 Desc: FINE SAND
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.0
Formation End Depth: 7.5
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 1006602100
Layer: 2
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2: 06
Mat2 Desc: SILT
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 7.5
Formation End Depth: 15.0
Formation End Depth UOM: ft

Annular Space/Abandonment

Sealing Record

Plug ID: 1006602109
Layer: 2
Plug From: 1
Plug To: 4
Plug Depth UOM: ft

Annular Space/Abandonment

Sealing Record

Plug ID: 1006602110
Layer: 3
Plug From: 4

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug To:		15			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006602108			
Layer:		1			
Plug From:		0			
Plug To:		1			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006602107			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1006602098			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1006602104			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2.25			
<u>Water Details</u>					
Water ID:		1006602102			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1006602101			
Diameter:		8.0			
Depth From:		0.0			
Depth To:		15.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			
12	1 of 1	ENE/57.8	464.6 / -0.27	lot 4 con 1 ON	WWIS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well ID:	6703001			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	7/29/1963
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1804
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	004
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703001.pdf

Additional Detail(s) (Map)

Well Completed Date: 1963/05/21
Year Completed: 1963
Depth (m): 86.5632
Latitude: 43.8332728160858
Longitude: -80.5074001838805
Path: 670\6703001.pdf

Bore Hole Information

Bore Hole ID:	10467144	Elevation:	464.365081
DP2BR:	243.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	539604.20
Code OB Desc:	Bedrock	North83:	4853473.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	21-May-1963 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932616152
Layer: 8
Color:
General Color:
Mat1: 11
Most Common Material: GRAVEL
Mat2: 09
Mat2 Desc: MEDIUM SAND
Mat3:
Mat3 Desc:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation Top Depth:			215.0		
Formation End Depth:			225.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616153		
Layer:			9		
Color:					
General Color:					
Mat1:			07		
Most Common Material:			QUICKSAND		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			225.0		
Formation End Depth:			243.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616154		
Layer:			10		
Color:			6		
General Color:			BROWN		
Mat1:			26		
Most Common Material:			ROCK		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			243.0		
Formation End Depth:			284.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616150		
Layer:			6		
Color:					
General Color:					
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			155.0		
Formation End Depth:			175.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616151		
Layer:			7		
Color:					
General Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		175.0			
Formation End Depth:		215.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616147			
Layer:		3			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		25.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616145			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616149			
Layer:		5			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		130.0			
Formation End Depth:		155.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932616148			
Layer:		4			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:		13			
Mat3 Desc:		BOULDERS			
Formation Top Depth:		80.0			
Formation End Depth:		130.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932616146			
Layer:		2			
Color:					
General Color:					
Mat1:		12			
Most Common Material:		STONES			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		25.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966703001			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015714			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930759833			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		243			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing ID:		930759834			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		282			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

Results of Well Yield Testing

Pump Test ID:	996703001
Pump Set At:	
Static Level:	43.0
Final Level After Pumping:	90.0
Recommended Pump Depth:	110.0
Pumping Rate:	10.0
Flowing Rate:	
Recommended Pump Rate:	8.0
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	5
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933955378
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	275.0
Water Found Depth UOM:	ft

[13](#) 1 of 1 **SSW/421.7** **467.8 / 2.98** **FIRE # 7556 lot 25 con 1** **ARTHUR ON** **WWIS**

Well ID:	6716013	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Domestic	Date Received:	12/18/2006
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2576
Casing Material:		Form Version:	3
Audit No:	Z55903	Owner:	
Tag:	A048772	Street Name:	FIRE # 7556
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	025
Well Depth:		Concession:	01
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6716013.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Additional Detail(s) (Map)

Well Completed Date: 2006/10/02
Year Completed: 2006
Depth (m): 216
Latitude: 43.8271738186656
Longitude: -80.5150144002853
Path: 671\6716013.pdf

Bore Hole Information

Bore Hole ID:	11695795	Elevation:	468.392822
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	538996.00
Code OB Desc:	Overburden	North83:	4852792.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	02-Oct-2006 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 933082556
Layer: 5
Color: 2
General Color: GREY
Mat1: 11
Most Common Material: GRAVEL
Mat2: 84
Mat2 Desc: SILTY
Mat3: 12
Mat3 Desc: STONES
Formation Top Depth: 161.0
Formation End Depth: 182.0
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 933082554
Layer: 3
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 84
Mat2 Desc: SILTY
Mat3: 11
Mat3 Desc: GRAVEL
Formation Top Depth: 24.0
Formation End Depth: 116.0
Formation End Depth UOM: m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082555		
Layer:			4		
Color:			6		
General Color:			BROWN		
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:			06		
Mat2 Desc:			SILT		
Mat3:			12		
Mat3 Desc:			STONES		
Formation Top Depth:			116.0		
Formation End Depth:			161.0		
Formation End Depth UOM:			m		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082553		
Layer:			2		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			11		
Mat2 Desc:			GRAVEL		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			2.0		
Formation End Depth:			24.0		
Formation End Depth UOM:			m		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082552		
Layer:			1		
Color:					
General Color:					
Mat1:			02		
Most Common Material:			TOPSOIL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			2.0		
Formation End Depth UOM:			m		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			933082557		
Layer:			6		
Color:			6		
General Color:			BROWN		
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3 Desc:					
Formation Top Depth:		182.0			
Formation End Depth:		216.0			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933308225			
Layer:		1			
Plug From:		0			
Plug To:		30			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966716013			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11700661			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930892259			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:		-2.5			
Depth To:		216			
Casing Diameter:		6			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		11704131			
Pump Set At:		100.0			
Static Level:		67.0			
Final Level After Pumping:					
Recommended Pump Depth:		100.0			
Pumping Rate:		10.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		LPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:					
<u>Draw Down & Recovery</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test Detail ID:		11750852			
Test Type:		Draw Down			
Test Duration:		10			
Test Level:		69.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750854			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		70.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750856			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		70.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750853			
Test Type:		Draw Down			
Test Duration:		20			
Test Level:		70.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750850			
Test Type:		Draw Down			
Test Duration:		2			
Test Level:		68.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750849			
Test Type:		Recovery			
Test Duration:		1			
Test Level:		68.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750851			
Test Type:		Draw Down			
Test Duration:		4			
Test Level:		69.0			
Test Level UOM:		m			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11750855			
Test Type:		Draw Down			
Test Duration:		50			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Level:		70.0			
Test Level UOM:		m			
<u>Water Details</u>					
Water ID:		934082109			
Layer:		1			
Kind Code:					
Kind:					
Water Found Depth:		200.0			
Water Found Depth UOM:		m			
<u>Water Details</u>					
Water ID:		934082110			
Layer:		2			
Kind Code:					
Kind:					
Water Found Depth:		216.0			
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		11760084			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		216.0			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

14	1 of 1	NNE/428.0	465.9 / 1.03	lot 3 con 1 ON	WWIS
Well ID:	6702999			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	6/27/1957
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1705
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	003
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6702999.pdf

Additional Detail(s) (Map)

Well Completed Date: 1957/05/25
Year Completed: 1957
Depth (m): 82.6008
Latitude: 43.8359893390676

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Longitude:		-80.5109850373977			
Path:		670\6702999.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:	10467142			Elevation:	465.940917
DP2BR:	270.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	539314.20
Code OB Desc:	Bedrock			North83:	4853773.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	9
Date Completed:	25-May-1957 00:00:00			UTMRC Desc:	unknown UTM
Remarks:				Location Method:	p9
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616128				
Layer:	1				
Color:					
General Color:					
Mat1:	02				
Most Common Material:	TOPSOIL				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	2.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616136				
Layer:	9				
Color:	6				
General Color:	BROWN				
Mat1:	17				
Most Common Material:	SHALE				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	270.0				
Formation End Depth:	271.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616131				
Layer:	4				
Color:					
General Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:			09		
Mat2 Desc:			MEDIUM SAND		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			72.0		
Formation End Depth:			98.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616132		
Layer:			5		
Color:					
General Color:					
Mat1:			07		
Most Common Material:			QUICKSAND		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			98.0		
Formation End Depth:			124.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616130		
Layer:			3		
Color:					
General Color:					
Mat1:			14		
Most Common Material:			HARDPAN		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			42.0		
Formation End Depth:			72.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932616135		
Layer:			8		
Color:					
General Color:					
Mat1:			09		
Most Common Material:			MEDIUM SAND		
Mat2:			11		
Mat2 Desc:			GRAVEL		
Mat3:			12		
Mat3 Desc:			STONES		
Formation Top Depth:			234.0		
Formation End Depth:			270.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932616129			
Layer:		2			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		42.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932616134			
Layer:		7			
Color:					
General Color:					
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		158.0			
Formation End Depth:		234.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932616133			
Layer:		6			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		124.0			
Formation End Depth:		158.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966702999			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015712			
Casing No:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930759829
 Layer: 1
 Material: 1
 Open Hole or Material: STEEL
 Depth From:
 Depth To: 270
 Casing Diameter: 4
 Casing Diameter UOM: inch
 Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930759830
 Layer: 2
 Material: 4
 Open Hole or Material: OPEN HOLE
 Depth From:
 Depth To: 271
 Casing Diameter: 4
 Casing Diameter UOM: inch
 Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996702999
 Pump Set At:
 Static Level: 20.0
 Final Level After Pumping: 25.0
 Recommended Pump Depth:
 Pumping Rate: 15.0
 Flowing Rate:
 Recommended Pump Rate:
 Levels UOM: ft
 Rate UOM: GPM
 Water State After Test Code: 1
 Water State After Test: CLEAR
 Pumping Test Method: 1
 Pumping Duration HR: 2
 Pumping Duration MIN: 0
 Flowing: No

Water Details

Water ID: 933955376
 Layer: 1
 Kind Code: 1
 Kind: FRESH
 Water Found Depth: 271.0
 Water Found Depth UOM: ft

15	1 of 1	ENE/107.8	465.5 / 0.71	lot 4 con 1 ON	WWIS
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Well ID:	6705948	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Livestock	Date Received:	3/9/1976
Sec. Water Use:	Domestic	Selected Flag:	True

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1737
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	004
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6705948.pdf

Additional Detail(s) (Map)

Well Completed Date: 1975/12/12
Year Completed: 1975
Depth (m): 88.6968
Latitude: 43.8338998377281
Longitude: -80.506648734904
Path: 670\6705948.pdf

Bore Hole Information

Bore Hole ID:	10470031	Elevation:	464.907745
DP2BR:	244.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	539664.20
Code OB Desc:	Bedrock	North83:	4853543.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	12-Dec-1975 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932628460
Layer: 2
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 85
Mat2 Desc: SOFT
Mat3:
Mat3 Desc:
Formation Top Depth: 1.0
Formation End Depth: 11.0
Formation End Depth UOM: ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932628465			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:		73			
Mat2 Desc:		HARD			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		244.0			
Formation End Depth:		261.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932628459			
Layer:		1			
Color:		8			
General Color:		BLACK			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:		85			
Mat2 Desc:		SOFT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932628466			
Layer:		8			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:		73			
Mat2 Desc:		HARD			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		261.0			
Formation End Depth:		291.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932628463			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		12			
Mat2 Desc:		STONES			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:		72			
Mat3 Desc:		GRAVELLY			
Formation Top Depth:		176.0			
Formation End Depth:		233.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932628464			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		85			
Mat3 Desc:		SOFT			
Formation Top Depth:		233.0			
Formation End Depth:		244.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932628462			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:		81			
Mat3 Desc:		SANDY			
Formation Top Depth:		82.0			
Formation End Depth:		176.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932628461			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		85			
Mat2 Desc:		SOFT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		11.0			
Formation End Depth:		82.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966705948			
Method Construction Code:		2			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11018601			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930764840			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		247			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930764841			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		291			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996705948			
Pump Set At:					
Static Level:		38.0			
Final Level After Pumping:		54.0			
Recommended Pump Depth:		90.0			
Pumping Rate:		10.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935138547			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		54.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Draw Down & Recovery

Pump Test Detail ID: 934343074
 Test Type: Draw Down
 Test Duration: 15
 Test Level: 46.0
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934619822
 Test Type: Draw Down
 Test Duration: 30
 Test Level: 49.0
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934872653
 Test Type: Draw Down
 Test Duration: 45
 Test Level: 53.0
 Test Level UOM: ft

Water Details

Water ID: 933958808
 Layer: 3
 Kind Code: 5
 Kind: Not stated
 Water Found Depth: 289.0
 Water Found Depth UOM: ft

Water Details

Water ID: 933958806
 Layer: 1
 Kind Code: 1
 Kind: FRESH
 Water Found Depth: 263.0
 Water Found Depth UOM: ft

Water Details

Water ID: 933958807
 Layer: 2
 Kind Code: 5
 Kind: Not stated
 Water Found Depth: 278.0
 Water Found Depth UOM: ft

16	1 of 1	W/80.8	464.6 / -0.25	lot 2 con 1 ON	WWIS
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Well ID:	6705119	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	7/2/1974
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2519
Casing Material:		Form Version:	1

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	002
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6705119.pdf

Additional Detail(s) (Map)

Well Completed Date: 1974/06/17
Year Completed: 1974
Depth (m): 54.864
Latitude: 43.8306294093389
Longitude: -80.520978810481
Path: 670\6705119.pdf

Bore Hole Information

Bore Hole ID:	10469218	Elevation:	463.174102
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	538514.20
Code OB Desc:	Overburden	North83:	4853173.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	17-Jun-1974 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932624968
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 10.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932624969			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		10.0			
Formation End Depth:		165.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932624970			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		165.0			
Formation End Depth:		180.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932624971			
Layer:		4			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		180.0			
Formation End Depth:		180.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966705119			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11017788			
Casing No:		1			
Comment:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Alt Name:

Construction Record - Casing

Casing ID: 930763537
 Layer: 1
 Material: 1
 Open Hole or Material: STEEL
 Depth From:
 Depth To: 180
 Casing Diameter: 5
 Casing Diameter UOM: inch
 Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996705119
 Pump Set At:
 Static Level: 38.0
 Final Level After Pumping: 60.0
 Recommended Pump Depth: 70.0
 Pumping Rate: 10.0
 Flowing Rate:
 Recommended Pump Rate: 8.0
 Levels UOM: ft
 Rate UOM: GPM
 Water State After Test Code: 1
 Water State After Test: CLEAR
 Pumping Test Method: 1
 Pumping Duration HR: 2
 Pumping Duration MIN: 0
 Flowing: No

Draw Down & Recovery

Pump Test Detail ID: 935136360
 Test Type: Draw Down
 Test Duration: 60
 Test Level: 60.0
 Test Level UOM: ft

Water Details

Water ID: 933957862
 Layer: 1
 Kind Code: 1
 Kind: FRESH
 Water Found Depth: 180.0
 Water Found Depth UOM: ft

17	1 of 1	WSW/173.6	465.6 / 0.73	8096 HWY. 109 lot 36 con 1 ARTHUR ON	WWIS
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Well ID: 7263957
 Construction Date:
 Primary Water Use:
 Sec. Water Use:
 Final Well Status: 0
 Water Type:
 Casing Material:
 Audit No: Z210104
 Tag: A183626

Data Entry Status:
 Data Src:
 Date Received: 5/31/2016
 Selected Flag: True
 Abandonment Rec:
 Contractor: 6475
 Form Version: 7
 Owner:
 Street Name: 8096 HWY. 109

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				County: WELLINGTON Municipality: WEST GARAFRAXA TOWNSHIP Site Info: Lot: 036 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/726\7263957.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		2016/04/29			
Year Completed:		2016			
Depth (m):					
Latitude:		43.8284464592436			
Longitude:		-80.5200162290601			
Path:		726\7263957.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		1006027954		Elevation:	465.119689
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	538593.00
Code OB Desc:				North83:	4852931.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:		29-Apr-2016 00:00:00		UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006082048			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1006082042			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1006082047			
Layer:					
Slot:					
Screen Top Depth:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen End Depth:					
Screen Material:					
Screen Depth UOM: ft					
Screen Diameter UOM: inch					
Screen Diameter:					
Water Details					
Water ID: 1006082045					
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM: ft					
Hole Diameter					
Hole ID: 1006082044					
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM: ft					
Hole Diameter UOM: inch					

18	1 of 1	WSW/15.0	463.7 / -1.13	lot 37 con 1 ON	WWIS
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Well ID:	6706459	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	8/8/1977
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	4856
Casing Material:		Form Version:	1
Audit No:		Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	037
Well Depth:		Concession:	01
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6706459.pdf

Additional Detail(s) (Map)

Well Completed Date:	1977/07/06
Year Completed:	1977
Depth (m):	56.6928
Latitude:	43.8297290630187
Longitude:	-80.520986011417
Path:	670\6706459.pdf

Bore Hole Information

Bore Hole ID:	10470537	Elevation:	462.181640
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	0			East83:	538514.20
Code OB Desc:	Overburden			North83:	4853073.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	06-Jul-1977 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 932630939
Layer: 2
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 11
Mat2 Desc: GRAVEL
Mat3:
Mat3 Desc:
Formation Top Depth: 1.0
Formation End Depth: 10.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932630943
Layer: 6
Color: 1
General Color: WHITE
Mat1: 11
Most Common Material: GRAVEL
Mat2: 28
Mat2 Desc: SAND
Mat3:
Mat3 Desc:
Formation Top Depth: 95.0
Formation End Depth: 122.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932630941
Layer: 4
Color: 6
General Color: BROWN
Mat1: 14
Most Common Material: HARDPAN
Mat2: 11
Mat2 Desc: GRAVEL
Mat3:
Mat3 Desc:
Formation Top Depth: 29.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:			70.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932630942		
Layer:			5		
Color:			2		
General Color:			GREY		
Mat1:			06		
Most Common Material:			SILT		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			70.0		
Formation End Depth:			95.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932630945		
Layer:			8		
Color:			7		
General Color:			RED		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			170.0		
Formation End Depth:			174.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932630940		
Layer:			3		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			10.0		
Formation End Depth:			29.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932630946		
Layer:			9		
Color:			6		
General Color:			BROWN		
Mat1:			11		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		174.0			
Formation End Depth:		186.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932630938			
Layer:		1			
Color:		8			
General Color:		BLACK			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932630944			
Layer:		7			
Color:		6			
General Color:		BROWN			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		122.0			
Formation End Depth:		170.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966706459			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11019107			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930765663			
Layer:		2			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		186			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930765662			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		185			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996706459			
Pump Set At:					
Static Level:		33.0			
Final Level After Pumping:		80.0			
Recommended Pump Depth:		80.0			
Pumping Rate:		12.0			
Flowing Rate:					
Recommended Pump Rate:		5.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		30			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935130363			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		80.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934874277			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		80.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934620349			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		80.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Draw Down & Recovery

Pump Test Detail ID: 934344239
Test Type: Draw Down
Test Duration: 15
Test Level: 80.0
Test Level UOM: ft

Water Details

Water ID: 933959416
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 186.0
Water Found Depth UOM: ft

19	1 of 1	W/82.8	462.0 / -2.79	lot 2 con 1 ON	WWIS
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Well ID: 6708240	Data Entry Status:	
Construction Date:	Data Src: 1	
Primary Water Use: Domestic	Date Received: 8/8/1985	
Sec. Water Use: Livestock	Selected Flag: True	
Final Well Status: Water Supply	Abandonment Rec:	
Water Type:	Contractor: 3740	
Casing Material:	Form Version: 1	
Audit No:	Owner:	
Tag:	Street Name:	
Construction Method:	County: WELLINGTON	
Elevation (m):	Municipality: WEST LUTHER TOWNSHIP	
Elevation Reliability:	Site Info:	
Depth to Bedrock:	Lot: 002	
Well Depth:	Concession: 01	
Overburden/Bedrock:	Concession Name: CON	
Pump Rate:	Easting NAD83:	
Static Water Level:	Northing NAD83:	
Flowing (Y/N):	Zone:	
Flow Rate:	UTM Reliability:	
Clear/Cloudy:		

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6708240.pdf

Additional Detail(s) (Map)

Well Completed Date: 1985/05/30
Year Completed: 1985
Depth (m): 77.724
Latitude: 43.830462041363
Longitude: -80.5218632097916
Path: 670\6708240.pdf

Bore Hole Information

Bore Hole ID: 10472150	Elevation: 460.937255
DP2BR: 209.00	Elevrc:
Spatial Status:	Zone: 17
Code OB: r	East83: 538443.20
Code OB Desc: Bedrock	North83: 4853154.00
Open Hole:	Org CS:
Cluster Kind:	UTMRC: 3

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Date Completed:	30-May-1985 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932638466				
Layer:	3				
Color:	2				
General Color:	GREY				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	12				
Mat2 Desc:	STONES				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	8.0				
Formation End Depth:	37.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932638464				
Layer:	1				
Color:	8				
General Color:	BLACK				
Mat1:	02				
Most Common Material:	TOPSOIL				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	1.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932638468				
Layer:	5				
Color:	2				
General Color:	GREY				
Mat1:	14				
Most Common Material:	HARDPAN				
Mat2:	11				
Mat2 Desc:	GRAVEL				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	165.0				
Formation End Depth:	186.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932638470			
Layer:		7			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		209.0			
Formation End Depth:		215.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932638469			
Layer:		6			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		186.0			
Formation End Depth:		209.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932638471			
Layer:		8			
Color:		2			
General Color:		GREY			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		215.0			
Formation End Depth:		255.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932638465			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		8.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932638467			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		13			
Mat2 Desc:		BOULDERS			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		37.0			
Formation End Depth:		165.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966708240			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11020720			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930768419			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		255			
Casing Diameter:					
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930768418			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		210			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test ID: 996708240					
Pump Set At:					
Static Level: 30.0					
Final Level After Pumping: 90.0					
Recommended Pump Depth: 130.0					
Pumping Rate: 6.0					
Flowing Rate:					
Recommended Pump Rate: 6.0					
Levels UOM: ft					
Rate UOM: GPM					
Water State After Test Code: 1					
Water State After Test: CLEAR					
Pumping Test Method: 1					
Pumping Duration HR: 1					
Pumping Duration MIN: 45					
Flowing: No					
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID: 935135406					
Test Type: Draw Down					
Test Duration: 60					
Test Level: 90.0					
Test Level UOM: ft					
 <u>Water Details</u>					
Water ID: 933961429					
Layer: 2					
Kind Code: 1					
Kind: FRESH					
Water Found Depth: 255.0					
Water Found Depth UOM: ft					
 <u>Water Details</u>					
Water ID: 933961428					
Layer: 1					
Kind Code: 1					
Kind: FRESH					
Water Found Depth: 245.0					
Water Found Depth UOM: ft					

20 1 of 1 E/69.0 465.4 / 0.52 lot 35 con 2 ON WWIS

Well ID:	6709272	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Livestock	Date Received:	6/30/1988
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	3740
Casing Material:		Form Version:	1
Audit No:	33308	Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	035
Well Depth:		Concession:	02
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6709272.pdf				
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1988/06/15				
Year Completed:	1988				
Depth (m):	71.3232				
Latitude:	43.832807747662				
Longitude:	-80.503959938102				
Path:	670\6709272.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10473129			Elevation:	462.621612
DP2BR:	216.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	539881.10
Code OB Desc:	Bedrock			North83:	4853423.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	15-Jun-1988 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932642807				
Layer:	2				
Color:	6				
General Color:	BROWN				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	28				
Mat2 Desc:	SAND				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	1.0				
Formation End Depth:	18.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932642809				
Layer:	4				
Color:	2				
General Color:	GREY				
Mat1:	28				
Most Common Material:	SAND				
Mat2:	12				
Mat2 Desc:	STONES				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:			185.0		
Formation End Depth:			216.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932642810		
Layer:			5		
Color:			2		
General Color:			GREY		
Mat1:			15		
Most Common Material:			LIMESTONE		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			216.0		
Formation End Depth:			234.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932642808		
Layer:			3		
Color:			2		
General Color:			GREY		
Mat1:			14		
Most Common Material:			HARDPAN		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			18.0		
Formation End Depth:			185.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932642806		
Layer:			1		
Color:			8		
General Color:			BLACK		
Mat1:			02		
Most Common Material:			TOPSOIL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			1.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:			966709272		
Method Construction Code:			2		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11021699			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930770194			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		234			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930770193			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		221			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996709272			
Pump Set At:					
Static Level:		24.0			
Final Level After Pumping:		35.0			
Recommended Pump Depth:		80.0			
Pumping Rate:		25.0			
Flowing Rate:					
Recommended Pump Rate:		25.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935138147			
Test Type:					
Test Duration:		60			
Test Level:		35.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Details					
Water ID:		933962620			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		234.0			
Water Found Depth UOM:		ft			

21	1 of 1	WSW/181.7	460.9 / -3.92	ON	BORE
Borehole ID:	700156			Inclin FLG:	No
OGF ID:	215561067			SP Status:	Initial Entry
Status:				Surv Elev:	No
Type:	GeoColumn			Piezometer:	No
Use:	Geotechnical/Geological Investigation			Primary Name:	Section-22
Completion Date:	1979			Municipality:	
Static Water Level:				Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.827951
Total Depth m:	5.2			Longitude DD:	-80.52201
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	538433
Drill Method:				Northing:	4852875
Orig Ground Elev m:	452			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Not Applicable
DEM Ground Elev m:	460				
Concession:					
Location D:	Palmerston area, southern Ontario. Measured Pleistocene Section-22.				
Survey D:					
Comments:					

Borehole Geology Stratum

Geology Stratum ID:	218341374			Mat Consistency:	
Top Depth:	0			Material Moisture:	
Bottom Depth:	.6			Material Texture:	
Material Color:				Non Geo Mat Type:	
Material 1:	Gravel			Geologic Formation:	
Material 2:	Cobbles			Geologic Group:	
Material 3:				Geologic Period:	Quaternary
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Cobble gravel, weathered **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Geology Stratum ID:	218341375			Mat Consistency:	
Top Depth:	.6			Material Moisture:	
Bottom Depth:	3.1			Material Texture:	
Material Color:	Brown			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:				Geologic Group:	
Material 3:				Geologic Period:	Quaternary
Material 4:				Depositional Gen:	glacial
Gsc Material Description:					
Stratum Description:	Tavistock Till: brown silt till; lens of lacustrine silt and clay near base **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Geology Stratum ID:	218341377			Mat Consistency:	
Top Depth:	3.4			Material Moisture:	
Bottom Depth:	5.2			Material Texture:	
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Material 2: Material 3: Material 4: Gsc Material Description: Stratum Description:				Geologic Group: Geologic Period: Quaternary Depositional Gen: glacial	
		Stirton Till: grey, gritty, silt till (Samples 22 and 412) - underlain by Catfish Creek Till 100 feet to west **Note: Many records provided by the department have a truncated [Stratum Description] field.			
Geology Stratum ID: 218341376 Top Depth: 3.1 Bottom Depth: 3.4 Material Color: Material 1: Coarse Sand Material 2: Gravel Material 3: Material 4: Gsc Material Description: Stratum Description:				Mat Consistency: Material Moisture: Material Texture: Non Geo Mat Type: Geologic Formation: Geologic Group: Geologic Period: Quaternary Depositional Gen:	
		Coarse sand and gravel; variable thickness **Note: Many records provided by the department have a truncated [Stratum Description] field.			
<u>Borehole Sample</u>					
Sample ID: 220420250 Sample Mat Type: Sediment Sample Purpose: Geological logging Sample Description:				Sample Date: 19720101 Top Depth: 3.4 Bottom Depth: 5.2	
		Sample 22 for Till Analyses. Texture, pebble lithology, carbonate, heavy mineral and colour analyses. Stirton Till: grey, gritty, silt till - underlain by Catfish Creek Till 100 feet to west			
Sample ID: 220420251 Sample Mat Type: Sediment Sample Purpose: Geological logging Sample Description:				Sample Date: 19720101 Top Depth: 3.4 Bottom Depth: 5.2	
		Sample 412 for Till Analyses. Texture, pebble lithology, carbonate, heavy mineral and colour analyses. Stirton Till: grey, gritty, silt till - underlain by Catfish Creek Till 100 feet to west			
22	1 of 2	W/289.1	457.8 / -7.03	ARTHUR VILLAGE 8-2313-88 CONT. #2 SEWAGE TREATM. EXP.8-2214-89 ARTHUR VILL. ON	CA
Certificate #: 3-1256-88- Application Year: 88 Issue Date: 10/26/1989 Approval Type: Municipal sewage Status: Revised Application Type: Client Name: Client Address: Client City: Client Postal Code: Project Description: Contaminants: Emission Control:					
22	2 of 2	W/289.1	457.8 / -7.03	ARTHUR VILLAGE 8-2313-88 CONT. 2 SEWAGE TREAT. EXPANSION ARTHUR VILL. ON	CA
Certificate #: 3-1256-89- Application Year: 89 Issue Date: 10/2/1990 Approval Type: Municipal sewage Status: Cancelled Application Type: Client Name: Client Address:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	1 of 1	W/139.7	454.0 / -10.84	ONTARIO CLEAN WATER AGENCY CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	SPL
<p>Client City: Client Postal Code: Project Description: Contaminants: Emission Control:</p>					
<p>Ref No: 161286 Site No: Incident Dt: 10/20/1998 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: NOT ANTICIPATED Nature of Impact: Water course or lake Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 10/21/1998 Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: OCWA - ARTHUR WPCP 4 M3 REJECT WATER FROM TERTIARY FILTER TO RIVER. Contaminant Qty:</p> <p>Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:</p>					
24	1 of 26	W/139.7	454.0 / -10.84	MOE WELL ST. PUMPING ST'N. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
<p>Ref No: 3136 Site No: Incident Dt: 5/3/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 5/3/1988</p> <p>Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum:</p>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR - PUMP STATION BYPASS DUE TO BURNED OUT PUMP. Contaminant Qty:					
24	2 of 26	W/139.7	454.0 / -10.84	MOE WELLS ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 3646 Site No: Incident Dt: 5/14/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 5/14/1988 Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR WPCP - SEWAGE BY-PASS DUE TO PUMP FAILURE. Contaminant Qty:					
Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:					
24	3 of 26	W/139.7	454.0 / -10.84	MOE BELLTHREAD PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 3804 Site No: Incident Dt: 5/17/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response:					
Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: MOH Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Dt MOE Arvl on Scn: MOE Reported Dt: Dt Document Closed: Incident Reason: Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: Contaminant Qty:	5/17/1988 POWER INTERRUPTION			Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	
		PUMPING ST'N. - UNTREATEDSEWAGE BYPASS DUE TO POWER FAILURE.			
24	4 of 26	W/139.7	454.0 / -10.84	MOE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: Site No: Incident Dt: Year: Incident Cause: Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: Dt Document Closed: Incident Reason: Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: Contaminant Qty:	4897 1/15/1988 CONTAINER OVERFLOW			Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	75501 4852945.00 538270.00
		LAND		VILLAGE OF ARTHUR WELL STPUMPING STN - 900L RAW SEWAGE TO GROUND	
24	5 of 26	W/139.7	454.0 / -10.84	MOE WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: Site No: Incident Dt: Year: Incident Cause: Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: Receiving Env: MOE Response:	5507 6/22/1988 CONTAINER OVERFLOW			Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: Site Lot: Site Conc: Northing: Easting:	75501 4852945.00 538270.00
		LAND			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<p>Dt MOE Arvl on Scn: MOE Reported Dt: 6/22/1988 Dt Document Closed: Incident Reason: STORM/FLOOD/WIND Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ARTHUR WPCP - 900 L RAW SEWAGE TO DITCH. Contaminant Qty:</p> <p>Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:</p>					
24	6 of 26	W/139.7	454.0 / -10.84	MOE WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
<p>Ref No: 5564 Site No: Incident Dt: 6/23/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: LAND / WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/23/1988 Dt Document Closed: Incident Reason: STORM/FLOOD/WIND Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ARTHUR WPCP - 2000 L RAW SEWAGE TO DITCH AND CONESTOGO RIVER. Contaminant Qty:</p> <p>Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type:</p> <p>Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:</p>					
24	7 of 26	W/139.7	454.0 / -10.84	MOE WELL ST. PUMPING STATION ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
<p>Ref No: 5582 Site No: Incident Dt: 6/23/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: LAND</p> <p>Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type:</p> <p>Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc:</p>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB	
				Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/23/1988 Dt Document Closed: Incident Reason: OTHER Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ARTHUR WPCP -2000 L RAW SEWAGE TO CONESTOGO RIVER VIA DITCH. Contaminant Qty:		Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:

24	8 of 26	W/139.7	454.0 / -10.84	MOE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL	
				Ref No: 5609 Site No: Incident Dt: 6/24/1988 Year: Incident Cause: CONTAINER OVERFLOW Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/24/1988 Dt Document Closed: Incident Reason: OTHER Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR WPCP - 1800 L RAW SEWAGE BY-PASSTO CONESTOGO RIVER. Contaminant Qty:		Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:

24	9 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL	
				Ref No: 5631 Site No: Incident Dt: 6/24/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: NOT ANTICIPATED Nature of Impact:		Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/24/1988 Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: AURTHUR WPCP - 15,750 L RAW SEWAGE BYPASSED TO CRK., BROKEN FORCEMAIN. Contaminant Qty:	

24	10 of 26	W/139.7	454.0 / -10.84	MOE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
				Ref No: 5663 Site No: Incident Dt: 6/25/1988 Year: Incident Cause: CONTAINER OVERFLOW Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/25/1988 Dt Document Closed: Incident Reason: UNKNOWN Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ARTHUR PUMPING STATION- 1800 L SEWAGE TO DITCH GOING TO CONESTOGA RIVER Contaminant Qty:	

24	11 of 26	W/139.7	454.0 / -10.84	MOE CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
				Ref No: 7577 Site No: Incident Dt: 8/4/1988 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 8/4/1988 Dt Document Closed: Incident Reason: POWER INTERRUPTION Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR - 9000LRAW SEWAGE TO CONESTOGA RIVER Contaminant Qty:					
24	12 of 26	W/139.7	454.0 / -10.84	MOE WELLS STREET PUMPING STATION TO CONESTOGA R. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 18639 Site No: Incident Dt: 5/17/1989 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 5/17/1989 Dt Document Closed: Incident Reason: POWER INTERRUPTION Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: MOE-11,000 L RAW SEWAGE TO CONESTOGA RIVER Contaminant Qty:					
24	13 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 20371 Site No: Incident Dt: 6/14/1989 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1:					
Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: VILLAGE OF ARTHUR,M.O.E. Nearest Watercourse: Site Address: Site District Office:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	
				Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: POSSIBLE Nature of Impact: Water course or lake Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 6/14/1989 Dt Document Closed: Incident Reason: NEGLIGENCE (APPARENT) Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR- RAW SEWAGE BYPASS TO CONESTOGA RIVER. Contaminant Qty:	

24	14 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT GOLDEN VALLEY ARMS HOLDING TANK ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
				Ref No: 21361 Site No: Incident Dt: 7/1/1989 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 7/1/1989 Dt Document Closed: Incident Reason: NEGLIGENCE (APPARENT) Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: VILLAGE OF ARTHUR- RAW SEWAGE BYPASS TO CONESTOGA RIVER. Contaminant Qty:	
				Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	

24	15 of 26	W/139.7	454.0 / -10.84	MOE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
				Ref No: 22960 Site No: Incident Dt: 7/31/1989 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code:	
				Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 7/31/1989 Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ARTHUR WPCP - 5000 L RAW SEWAGE TO DITCH. Contaminant Qty:		Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:			

24	16 of 26	W/139.7	454.0 / -10.84	MOE CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 28361 Site No: Incident Dt: 11/30/1989 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 11/30/1989 Dt Document Closed: Incident Reason: EQUIPMENT FAILURE Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: MOE- ARTHUR WPCP BY-PASS OF 150 000 LTR RAW SEWAGETO CONESTOGA RIVER Contaminant Qty:		Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:			

24	17 of 26	W/139.7	454.0 / -10.84	MOE CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No: 30391 Site No: Incident Dt: 1/29/1990 Year: Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE		Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	WATER			Site Conc:	
Receiving Env:				Northing:	4852945.00
MOE Response:				Easting:	538270.00
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	1/29/1990			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	EQUIPMENT FAILURE			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE - 10 M3 BY-PASS TO CONESTOGA RIVER DUE TO CLOGGED PUMP.				
Contaminant Qty:					

24	18 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No:	32030			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	3/14/1990			Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	WATER			Site Conc:	
Receiving Env:				Northing:	4852945.00
MOE Response:				Easting:	538270.00
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	3/14/1990			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	EQUIPMENT FAILURE			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE (ARTHUR WPCP): SEWAGEBYPASS CAUSED BY PUMP FAILURE				
Contaminant Qty:					

24	19 of 26	W/139.7	454.0 / -10.84	MOE CONESTOGA RIVER FREDERICK ST. ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No:	32510			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	3/25/1990			Health/Env Conseq:	
Year:				Client Type:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	WATER			Site Conc:	
Receiving Env:				Northing:	4852945.00
MOE Response:				Easting:	538270.00
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	3/25/1990			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	POWER INTERRUPTION			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE - BY-PASS TO CONESTOGA RIVER DUE TO POWER FAILURE				
Contaminant Qty:					

24	20 of 26	W/139.7	454.0 / -10.84	MOE CONOSTOGO LAKE ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No:	35032			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	5/22/1990			Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	WATER			Site Conc:	
Receiving Env:				Northing:	4852945.00
MOE Response:				Easting:	538270.00
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	5/22/1990			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	INTENTIONAL/PLANNED			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE (MAIN PUMPING STN.): RAW SEWAGE BYPASS DUE TO CONSTRUCTION.				
Contaminant Qty:					

24	21 of 26	W/139.7	454.0 / -10.84	MOE CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILL. ON	SPL
Ref No:	42332			Discharger Report:	
Site No:				Material Group:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Incident Dt: Year: Incident Cause: Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: Dt Document Closed: Incident Reason: Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: Contaminant Qty:	10/19/1990 WASTEWATER DISCHARGE TO WATERCOURSE POSSIBLE Soil contamination LAND / WATER EQUIPMENT FAILURE			Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	
MOE - RAW SEWAGE BYPASS AT MAIN PUMPING STN DUE TO AIR LOCK IN PUMP.					

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W/139.7

454.0 / -10.84

MINISTRY OF THE ENVIRONMENT
CONESTOGO RIVER ARTHUR SEWAGE
LAGOON 321 SMITH STREET
ARTHUR TWP. ON

SPL

Ref No: Site No: Incident Dt: Year: Incident Cause: Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: Dt Document Closed: Incident Reason: Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: Contaminant Qty:	51288 5/28/1991 WASTEWATER DISCHARGE TO WATERCOURSE POSSIBLE Water course or lake WATER 5/28/1991 POWER INTERRUPTION			Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75601 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	
MOE ARTHUR VILL. WPCP - NON DISINFECTED EFFLUENT TO CONESTOGO RIVER.					

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W/139.7

454.0 / -10.84

MINISTRY OF THE ENVIRONMENT
ARTHUR SEWAGE LAGOON 321 SMITH
STREET
ARTHUR VILL. ON

SPL

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
	66511			Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: 4852945.00 Easting: 538270.00 Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:	
	1/28/1992				
Ref No:	66511				
Site No:					
Incident Dt:	1/28/1992				
Year:					
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE				
Incident Event:					
Contaminant Code:					
Contaminant Name:					
Contaminant Limit 1:					
Contam Limit Freq 1:					
Contaminant UN No 1:					
Environment Impact:	POSSIBLE				
Nature of Impact:	Surface Water Pollution				
Receiving Medium:	WATER				
Receiving Env:					
MOE Response:					
Dt MOE Arvl on Scn:					
MOE Reported Dt:	1/28/1992				
Dt Document Closed:					
Incident Reason:	EQUIPMENT FAILURE				
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE WPCP - POOR QUALITY EFFLUENT FROM PLANT FOR 135 MIN., PLUGGED SCREENS				
Contaminant Qty:					
24	24 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT ARTHUR SEWAGE LAGOON 321 SMITH STREET ARTHUR VILLAGE ON	SPL
Ref No:	69264				
Site No:					
Incident Dt:	4/16/1992				
Year:					
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE				
Incident Event:					
Contaminant Code:					
Contaminant Name:					
Contaminant Limit 1:					
Contam Limit Freq 1:					
Contaminant UN No 1:					
Environment Impact:	POSSIBLE				
Nature of Impact:	Surface Water Pollution				
Receiving Medium:	WATER				
Receiving Env:					
MOE Response:					
Dt MOE Arvl on Scn:					
MOE Reported Dt:	4/16/1992				
Dt Document Closed:					
Incident Reason:	EQUIPMENT FAILURE				
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE ARTHUR WPCP - BYPASS OF RAW SEWAGE DUE TO PUMP FAILURE				
Contaminant Qty:					
24	25 of 26	W/139.7	454.0 / -10.84	MINISTRY OF THE ENVIRONMENT CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET	SPL

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
ARTHUR VILLAGE ON					
Ref No:	78041			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	10/27/1992			Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:	WASTEWATER DISCHARGE TO WATERCOURSE			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	WATER			Site Conc:	
Receiving Env:				Northing:	4852945.00
MOE Response:				Easting:	538270.00
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	10/27/1992			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	EQUIPMENT FAILURE			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	MOE-4.5 M3 UNCHLORINATED RAW SEWAGE TO CONESTOGA RIVER,PUMP FAILURE.				
Contaminant Qty:					
24	26 of 26	W/139.7	454.0 / -10.84	ONTARIO CLEAN WATER AGENCY CONESTOGA RIVER ARTHUR SEWAGE LAGOON 321 SMITH STREET WELLINGTON NORTH TOWNSHIP ON	SPL
Ref No:	199877			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	5/3/2001			Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:	CONTAINER OVERFLOW			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	Possible			Site Municipality:	75617
Nature of Impact:	Water course or lake			Site Lot:	
Receiving Medium:	Water			Site Conc:	
Receiving Env:				Northing:	4852945
MOE Response:				Easting:	538270
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	
MOE Reported Dt:	5/4/2001			Site Map Datum:	
Dt Document Closed:				SAC Action Class:	
Incident Reason:	EQUIPMENT FAILURE			Source Type:	
Site Name:					
Site County/District:					
Site Geo Ref Meth:					
Incident Summary:	OCWA ARTHUR WPCP: BYPASS TREATED SEWAGE TO RIVER. STOPPED 01/05/04 14:00				
Contaminant Qty:					
25	1 of 1	W/214.0	455.9 / -8.92		BORE

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
ON					
Borehole ID:	700157			Inclin FLG:	No
OGF ID:	215561068			SP Status:	Initial Entry
Status:				Surv Elev:	No
Type:	GeoColumn			Piezometer:	No
Use:	Geotechnical/Geological Investigation			Primary Name:	Section-101
Completion Date:	1979			Municipality:	
Static Water Level:				Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.831245
Total Depth m:	7.6			Longitude DD:	-80.523986
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	538272
Drill Method:				Northing:	4853240
Orig Ground Elev m:	464			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Not Applicable
DEM Ground Elev m:	459				
Concession:					
Location D:	Palmerston area, southern Ontario. Measured Pleistocene Section-101.				
Survey D:					
Comments:					
<u>Borehole Geology Stratum</u>					
Geology Stratum ID:	218341379			Mat Consistency:	
Top Depth:	.9			Material Moisture:	
Bottom Depth:	1.2			Material Texture:	
Material Color:	Brown			Non Geo Mat Type:	
Material 1:	Silt			Geologic Formation:	
Material 2:				Geologic Group:	
Material 3:				Geologic Period:	Quaternary
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Pale brown silt **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Geology Stratum ID:	218341380			Mat Consistency:	Compact
Top Depth:	1.2			Material Moisture:	
Bottom Depth:	3.1			Material Texture:	
Material Color:	Brown			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:				Geologic Group:	
Material 3:				Geologic Period:	Quaternary
Material 4:				Depositional Gen:	glacial
Gsc Material Description:					
Stratum Description:	Tavistock Till: compact yellowish brown, gritty, clayey silt till; blocky structure (Sample 1) **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Geology Stratum ID:	218341378			Mat Consistency:	
Top Depth:	0			Material Moisture:	
Bottom Depth:	.9			Material Texture:	
Material Color:	Brown			Non Geo Mat Type:	
Material 1:	Fine Sand			Geologic Formation:	
Material 2:				Geologic Group:	
Material 3:				Geologic Period:	Quaternary
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Fine sand, yellowish brown to brownish yellow **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Geology Stratum ID:	218341381			Mat Consistency:	
Top Depth:	3.1			Material Moisture:	
Bottom Depth:	3.2			Material Texture:	
Material Color:				Non Geo Mat Type:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Material 1: Material 2: Material 3: Material 4: Gsc Material Description: Stratum Description:	Silt Fine Sand			Geologic Formation: Geologic Group: Geologic Period: Depositional Gen:	Quaternary
Geology Stratum ID: Top Depth: Bottom Depth: Material Color: Material 1: Material 2: Material 3: Material 4: Gsc Material Description: Stratum Description:	218341382 3.2 4.9 Brown Till			Mat Consistency: Material Moisture: Material Texture: Non Geo Mat Type: Geologic Formation: Geologic Group: Geologic Period: Depositional Gen:	Quaternary glacial
				Discontinuous layer of silt and fine sand; contorted **Note: Many records provided by the department have a truncated [Stratum Description] field.	
Geology Stratum ID: Top Depth: Bottom Depth: Material Color: Material 1: Material 2: Material 3: Material 4: Gsc Material Description: Stratum Description:	218341383 4.9 7.6 Brown Till			Mat Consistency: Material Moisture: Material Texture: Non Geo Mat Type: Geologic Formation: Geologic Group: Geologic Period: Depositional Gen:	Hard Quaternary glacial
				Stirton Till: dark brown, silty clay till; sparse pebbles (Sample 1A) **Note: Many records provided by the department have a truncated [Stratum Description] field.	
Geology Stratum ID: Top Depth: Bottom Depth: Material Color: Material 1: Material 2: Material 3: Material 4: Gsc Material Description: Stratum Description:	218341383 4.9 7.6 Brown Till			Mat Consistency: Material Moisture: Material Texture: Non Geo Mat Type: Geologic Formation: Geologic Group: Geologic Period: Depositional Gen:	Hard Quaternary glacial
				Catfish Creek Till: very hard, stony, yellowish brown sandy silt till (Sample 1B) **Note: Many records provided by the department have a truncated [Stratum Description] field.	
Borehole Sample					
Sample ID: Sample Mat Type: Sample Purpose: Sample Description:	220420253 Sediment Geological logging			Sample Date: Top Depth: Bottom Depth:	19720101 3.2 4.9
				Sample 1A for Till Analyses. Texture, pebble lithology, carbonate, heavy mineral and colour analyses. Stirton Till: dark brown, silty clay till; sparse pebbles	
Sample ID: Sample Mat Type: Sample Purpose: Sample Description:	220420252 Sediment Geological logging			Sample Date: Top Depth: Bottom Depth:	19720101 1.2 3.1
				Sample 1 for Till Analyses. Texture, pebble lithology, carbonate, heavy mineral and colour analyses. Tavistock Till: compact yellowish brown, gritty, clayey silt till; blocky structure	
Sample ID: Sample Mat Type: Sample Purpose: Sample Description:	220420254 Sediment Geological logging			Sample Date: Top Depth: Bottom Depth:	19720101 4.9 7.6
				Sample 1B for Till Analyses. Texture, pebble lithology, carbonate, heavy mineral and colour analyses. Catfish Creek Till: very hard, stony, yellowish brown sandy silt till	
26	1 of 1	W/220.5	458.7 / -6.18	211 ELIZA ST ARTHUR ON	WWIS
Well ID: Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Water Type: Casing Material: Audit No: Tag:	7331059 Monitoring and Test Hole Observation Wells Z282667 A246142			Data Entry Status: Data Src: Date Received: Selected Flag: Abandonment Rec: Contractor: Form Version: Owner: Street Name:	 4/4/2019 True 6607 7 211 ELIZA ST

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				County: WELLINGTON Municipality: ARTHUR VILLAGE Site Info: Lot: Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:	

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/733\7331059.pdf

Additional Detail(s) (Map)

Well Completed Date: 2019/01/10
Year Completed: 2019
Depth (m): 6.6
Latitude: 43.8312640634199
Longitude: -80.5241851332601
Path: 733\7331059.pdf

Bore Hole Information

Bore Hole ID:	1007421098	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	538256.00
Code OB Desc:		North83:	4853242.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	10-Jan-2019 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1007823981
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 0.8999999761581421
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1007823984

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		34			
Mat2 Desc:		TILL			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		4.5			
Formation End Depth:		6.599999904632568			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007823983			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		34			
Mat2 Desc:		TILL			
Mat3:		61			
Mat3 Desc:		CLAYEY			
Formation Top Depth:		1.7999999523162842			
Formation End Depth:		4.5			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007823982			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:		84			
Mat3 Desc:		SILTY			
Formation Top Depth:		0.8999999761581421			
Formation End Depth:		1.7999999523162842			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1007825679			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1007825680			
Layer:		2			
Plug From:		0.300000011920929			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Plug To:</i> <i>Plug Depth UOM:</i>		4.69999980926514 m			
<u>Method of Construction & Well Use</u>					
<i>Method Construction ID:</i> <i>Method Construction Code:</i> <i>Method Construction:</i> <i>Other Method Construction:</i>		1007827831 6 Boring			
<u>Pipe Information</u>					
<i>Pipe ID:</i> <i>Casing No:</i> <i>Comment:</i> <i>Alt Name:</i>		1007822127 0			
<u>Construction Record - Screen</u>					
<i>Screen ID:</i> <i>Layer:</i> <i>Slot:</i> <i>Screen Top Depth:</i> <i>Screen End Depth:</i> <i>Screen Material:</i> <i>Screen Depth UOM:</i> <i>Screen Diameter UOM:</i> <i>Screen Diameter:</i>		1007829161 1 .10 5.07999992370605 6.59999990463257 5 m cm 6.40000009536743			
<u>Results of Well Yield Testing</u>					
<i>Pump Test ID:</i> <i>Pump Set At:</i> <i>Static Level:</i> <i>Final Level After Pumping:</i> <i>Recommended Pump Depth:</i> <i>Pumping Rate:</i> <i>Flowing Rate:</i> <i>Recommended Pump Rate:</i> <i>Levels UOM:</i> <i>Rate UOM:</i> <i>Water State After Test Code:</i> <i>Water State After Test:</i> <i>Pumping Test Method:</i> <i>Pumping Duration HR:</i> <i>Pumping Duration MIN:</i> <i>Flowing:</i>		1007830112			
<u>Hole Diameter</u>					
<i>Hole ID:</i> <i>Diameter:</i> <i>Depth From:</i> <i>Depth To:</i> <i>Hole Depth UOM:</i> <i>Hole Diameter UOM:</i>		1007827057 21.0 0.0 6.599999904632568 m cm			
27	1 of 1	W72.5	453.9 / -10.97	lot 2 con 1 ON	WWIS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well ID:	6704343			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	9/18/1972
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	3737
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	002
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6704343.pdf

Additional Detail(s) (Map)

Well Completed Date: 1972/09/07
Year Completed: 1972
Depth (m): 67.9704
Latitude: 43.8299216042623
Longitude: -80.5239694384471
Path: 670\6704343.pdf

Bore Hole Information

Bore Hole ID:	10468454	Elevation:	461.183715
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	538274.20
Code OB Desc:	Overburden	North83:	4853093.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	07-Sep-1972 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932621658
Layer: 3
Color: 6
General Color: BROWN
Mat1: 11
Most Common Material: GRAVEL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation Top Depth:		208.0			
Formation End Depth:		220.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932621657			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		13			
Mat3 Desc:		BOULDERS			
Formation Top Depth:		150.0			
Formation End Depth:		208.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932621659			
Layer:		4			
Color:		8			
General Color:		BLACK			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		220.0			
Formation End Depth:		223.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932621656			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		13			
Mat3 Desc:		BOULDERS			
Formation Top Depth:		0.0			
Formation End Depth:		150.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966704343			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Pipe Information

Pipe ID: 11017024
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930762262
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 223
Casing Diameter:
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930762261
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 218
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996704343
Pump Set At:
Static Level: 51.0
Final Level After Pumping: 55.0
Recommended Pump Depth: 80.0
Pumping Rate: 10.0
Flowing Rate:
Recommended Pump Rate: 7.0
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 2
Pumping Duration HR: 2
Pumping Duration MIN: 0
Flowing: No

Draw Down & Recovery

Pump Test Detail ID: 935134132
Test Type: Draw Down
Test Duration: 60
Test Level: 55.0
Test Level UOM: ft

Draw Down & Recovery

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Pump Test Detail ID:		934347959			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		55.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934869280			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		55.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934615410			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		55.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933956946			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		220.0			
Water Found Depth UOM:		ft			
<u>Water Details</u>					
Water ID:		933956947			
Layer:		2			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		223.0			
Water Found Depth UOM:		ft			
<hr/>					
28	1 of 1	E/35.2	465.4 / 0.59	lot 34 con 2 ON	WWIS
Well ID:	6710271			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	5/11/1990
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	3740
Casing Material:				Form Version:	1
Audit No:	34355			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	034
Well Depth:				Concession:	02
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Clear/Cloudy:

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6710271.pdf

Additional Detail(s) (Map)

Well Completed Date: 1990/04/25
 Year Completed: 1990
 Depth (m): 87.4776
 Latitude: 43.8335286906699
 Longitude: -80.5020372537193
 Path: 671\6710271.pdf

Bore Hole Information

Bore Hole ID:	10474118	Elevation:	466.048797
DP2BR:	238.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	540035.20
Code OB Desc:	Bedrock	North83:	4853504.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	25-Apr-1990 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932647133
 Layer: 1
 Color:
 General Color:
 Mat1: 02
 Most Common Material: TOPSOIL
 Mat2:
 Mat2 Desc:
 Mat3:
 Mat3 Desc:
 Formation Top Depth: 0.0
 Formation End Depth: 4.0
 Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 932647136
 Layer: 4
 Color: 6
 General Color: BROWN
 Mat1: 28
 Most Common Material: SAND
 Mat2: 11
 Mat2 Desc: GRAVEL
 Mat3:
 Mat3 Desc:
 Formation Top Depth: 220.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:			238.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932647137		
Layer:			5		
Color:			6		
General Color:			BROWN		
Mat1:			15		
Most Common Material:			LIMESTONE		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			238.0		
Formation End Depth:			287.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932647135		
Layer:			3		
Color:			2		
General Color:			GREY		
Mat1:			14		
Most Common Material:			HARDPAN		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			75.0		
Formation End Depth:			220.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932647134		
Layer:			2		
Color:			2		
General Color:			GREY		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			4.0		
Formation End Depth:			75.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well Use</u>					
Method Construction ID:			966710271		
Method Construction Code:			2		
Method Construction:			Rotary (Convent.)		
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Pipe Information</u>					
Pipe ID:		11022688			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930772008			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		287			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930772007			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		238			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996710271			
Pump Set At:					
Static Level:		39.0			
Final Level After Pumping:		75.0			
Recommended Pump Depth:		120.0			
Pumping Rate:		10.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935132145			
Test Type:					
Test Duration:		60			
Test Level:		75.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933963860			
Layer:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	287.0				
Water Found Depth UOM:	ft				

29	1 of 1	E/55.8	465.4 / 0.59	lot 35 con 2 ON	WWIS
Well ID:	6713103			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	10/13/1999
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	2576
Casing Material:				Form Version:	1
Audit No:	209428			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	035
Well Depth:				Concession:	02
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6713103.pdf

Additional Detail(s) (Map)

Well Completed Date: 1999/10/04
Year Completed: 1999
Depth (m): 78.0288
Latitude: 43.8333483564506
Longitude: -80.5019778066863
Path: 671\6713103.pdf

Bore Hole Information

Bore Hole ID:	10476936	Elevation:	465.008056
DP2BR:	236.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	540040.10
Code OB Desc:	Bedrock	North83:	4853484.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	04-Oct-1999 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932660544

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		149.0			
Formation End Depth:		183.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932660545			
Layer:		7			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:		91			
Mat3 Desc:		WATER-BEARING			
Formation Top Depth:		183.0			
Formation End Depth:		216.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932660546			
Layer:		8			
Color:		5			
General Color:		YELLOW			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		91			
Mat3 Desc:		WATER-BEARING			
Formation Top Depth:		216.0			
Formation End Depth:		236.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932660540			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		24.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932660543			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		133.0			
Formation End Depth:		149.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932660547			
Layer:		9			
Color:		1			
General Color:		WHITE			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		236.0			
Formation End Depth:		256.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932660541			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		24.0			
Formation End Depth:		106.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932660539			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932660542			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		86			
Mat2 Desc:		STICKY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		106.0			
Formation End Depth:		133.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933211197			
Layer:		1			
Plug From:		0			
Plug To:		40			
Plug Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966713103			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11025506			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930777074			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		256			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing ID:		930777073			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		239			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996713103			
Pump Set At:					
Static Level:		29.0			
Final Level After Pumping:					
Recommended Pump Depth:		180.0			
Pumping Rate:		8.0			
Flowing Rate:					
Recommended Pump Rate:		6.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934619027			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		160.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935132344			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		127.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934871289			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		139.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933967723			
Layer:		2			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		253.0			
Water Found Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Details					
Water ID:		933967722			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		248.0			
Water Found Depth UOM:		ft			

30	1 of 1	WSW/66.7	459.9 / -4.97	lot 37 con 1 ON	WWIS
Well ID:	6708870			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	8/7/1987
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	3740
Casing Material:				Form Version:	1
Audit No:	06077			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6708870.pdf

Additional Detail(s) (Map)

Well Completed Date: 1987/07/08
Year Completed: 1987
Depth (m): 64.008
Latitude: 43.8284482962021
Longitude: -80.5247646824313
Path: 670\6708870.pdf

Bore Hole Information

Bore Hole ID:	10472759	Elevation:	455.905029
DP2BR:	188.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	538211.20
Code OB Desc:	Bedrock	North83:	4852929.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	08-Jul-1987 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932641132			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		40.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932641135			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		198.0			
Formation End Depth:		210.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932641134			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		85			
Mat2 Desc:		SOFT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		188.0			
Formation End Depth:		198.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932641133			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		13			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		BOULDERS			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		40.0			
Formation End Depth:		188.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966708870			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11021329			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930769516			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		198			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930769517			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		210			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996708870			
Pump Set At:					
Static Level:		15.0			
Final Level After Pumping:		20.0			
Recommended Pump Depth:		50.0			
Pumping Rate:		30.0			
Flowing Rate:					
Recommended Pump Rate:		20.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Duration MIN:					
Flowing:		No			
Draw Down & Recovery					
Pump Test Detail ID:		935137088			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		20.0			
Test Level UOM:		ft			
Water Details					
Water ID:		933962175			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		210.0			
Water Found Depth UOM:		ft			

31	1 of 1	WSW/30.3	462.8 / -2.08	lot 37 con 1 ON	WWIS
Well ID:	6703483			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	1/9/1970
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	2406
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703483.pdf

Additional Detail(s) (Map)

Well Completed Date: 1969/12/01
Year Completed: 1969
Depth (m): 65.532
Latitude: 43.8286668086852
Longitude: -80.52534749246
Path: 670\6703483.pdf

Bore Hole Information

Bore Hole ID:	10467621	Elevation:	456.357330
DP2BR:	196.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	538164.20
Code OB Desc:	Bedrock	North83:	4852953.00

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Open Hole: Cluster Kind: Date Completed: 01-Dec-1969 00:00:00 Remarks: Elevrc Desc: Location Source Date: Improvement Location Source: Improvement Location Method: Source Revision Comment: Supplier Comment:				Org CS: UTMRC: 4 UTMRC Desc: margin of error : 30 m - 100 m Location Method: p4	
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932618125			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		13			
Mat2 Desc:		BOULDERS			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		35.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932618126			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		35.0			
Formation End Depth:		70.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932618128			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		05			
Mat3 Desc:		CLAY			
Formation Top Depth:		120.0			
Formation End Depth:		186.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932618130		
Layer:			6		
Color:					
General Color:					
Mat1:			15		
Most Common Material:			LIMESTONE		
Mat2:			09		
Mat2 Desc:			MEDIUM SAND		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			196.0		
Formation End Depth:			215.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932618129		
Layer:			5		
Color:			5		
General Color:			YELLOW		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			186.0		
Formation End Depth:			196.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932618127		
Layer:			3		
Color:			6		
General Color:			BROWN		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			11		
Mat2 Desc:			GRAVEL		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			70.0		
Formation End Depth:			120.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well Use</u>					
Method Construction ID:			966703483		
Method Construction Code:			1		
Method Construction:			Cable Tool		
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:			11016191		

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Casing No:</i>	1				
<i>Comment:</i>					
<i>Alt Name:</i>					
<u>Construction Record - Casing</u>					
<i>Casing ID:</i>	930760728				
<i>Layer:</i>	1				
<i>Material:</i>	1				
<i>Open Hole or Material:</i>	STEEL				
<i>Depth From:</i>					
<i>Depth To:</i>	203				
<i>Casing Diameter:</i>	6				
<i>Casing Diameter UOM:</i>	inch				
<i>Casing Depth UOM:</i>	ft				
<u>Construction Record - Casing</u>					
<i>Casing ID:</i>	930760729				
<i>Layer:</i>	2				
<i>Material:</i>	4				
<i>Open Hole or Material:</i>	OPEN HOLE				
<i>Depth From:</i>					
<i>Depth To:</i>	215				
<i>Casing Diameter:</i>					
<i>Casing Diameter UOM:</i>	inch				
<i>Casing Depth UOM:</i>	ft				
<u>Results of Well Yield Testing</u>					
<i>Pump Test ID:</i>	996703483				
<i>Pump Set At:</i>					
<i>Static Level:</i>	22.0				
<i>Final Level After Pumping:</i>	28.0				
<i>Recommended Pump Depth:</i>	60.0				
<i>Pumping Rate:</i>	10.0				
<i>Flowing Rate:</i>					
<i>Recommended Pump Rate:</i>	10.0				
<i>Levels UOM:</i>	ft				
<i>Rate UOM:</i>	GPM				
<i>Water State After Test Code:</i>	1				
<i>Water State After Test:</i>	CLEAR				
<i>Pumping Test Method:</i>	1				
<i>Pumping Duration HR:</i>	3				
<i>Pumping Duration MIN:</i>	0				
<i>Flowing:</i>	No				
<u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>	934345700				
<i>Test Type:</i>	Recovery				
<i>Test Duration:</i>	15				
<i>Test Level:</i>	22.0				
<i>Test Level UOM:</i>	ft				
<u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>	934858460				
<i>Test Type:</i>	Recovery				
<i>Test Duration:</i>	45				
<i>Test Level:</i>	22.0				
<i>Test Level UOM:</i>	ft				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934604269			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		22.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935123247			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		22.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933955965			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		210.0			
Water Found Depth UOM:		ft			

<u>32</u>	1 of 1	E/68.6	463.3 / -1.51	lot 35 con 2 ON	WWIS
Well ID:	6702902			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	3/9/1964
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1804
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	035
Well Depth:				Concession:	02
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6702902.pdf

Additional Detail(s) (Map)

Well Completed Date: 1964/01/30
Year Completed: 1964
Depth (m): 67.6656
Latitude: 43.8336193664152
Longitude: -80.5001210279267
Path: 670\6702902.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	10467045			Elevation:	461.142822
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	540189.20
Code OB Desc:	Overburden			North83:	4853515.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	30-Jan-1964 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932615713				
Layer:	9				
Color:					
General Color:					
Mat1:	10				
Most Common Material:	COARSE SAND				
Mat2:	11				
Mat2 Desc:	GRAVEL				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	210.0				
Formation End Depth:	222.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932615709				
Layer:	5				
Color:					
General Color:					
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	13				
Mat2 Desc:	BOULDERS				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	140.0				
Formation End Depth:	160.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932615710				
Layer:	6				
Color:					
General Color:					
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	09				
Mat2 Desc:	MEDIUM SAND				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:			160.0		
Formation End Depth:			180.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615711		
Layer:			7		
Color:					
General Color:					
Mat1:			11		
Most Common Material:			GRAVEL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			180.0		
Formation End Depth:			195.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615712		
Layer:			8		
Color:					
General Color:					
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			195.0		
Formation End Depth:			210.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615705		
Layer:			1		
Color:					
General Color:					
Mat1:			02		
Most Common Material:			TOPSOIL		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			4.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615706		
Layer:			2		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Color:					
General Color:					
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			4.0		
Formation End Depth:			50.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615707		
Layer:			3		
Color:					
General Color:					
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			12		
Mat2 Desc:			STONES		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			50.0		
Formation End Depth:			100.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932615708		
Layer:			4		
Color:					
General Color:					
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			100.0		
Formation End Depth:			140.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:			966702902		
Method Construction Code:			1		
Method Construction:			Cable Tool		
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:			11015615		
Casing No:			1		
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing ID:		930759653			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		220			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

Results of Well Yield Testing

Pump Test ID:	996702902
Pump Set At:	
Static Level:	60.0
Final Level After Pumping:	70.0
Recommended Pump Depth:	85.0
Pumping Rate:	12.0
Flowing Rate:	
Recommended Pump Rate:	10.0
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	10
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933955265
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	180.0
Water Found Depth UOM:	ft

33	1 of 1	ENE/209.7	467.2 / 2.40	lot 5 con 1 ON	WWIS
Well ID:	6703002			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	8/27/1951
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1723
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	005
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703002.pdf			

Additional Detail(s) (Map)

Well Completed Date: 1951/06/24
Year Completed: 1951
Depth (m): 91.1352
Latitude: 43.8360363618204
Longitude: -80.5010337485718
Path: 670\6703002.pdf

Bore Hole Information

Bore Hole ID:	10467145	Elevation:	467.106781
DP2BR:	223.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	540114.20
Code OB Desc:	Bedrock	North83:	4853783.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	24-Jun-1951 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932616157
Layer: 3
Color:
General Color:
Mat1: 05
Most Common Material: CLAY
Mat2: 09
Mat2 Desc: MEDIUM SAND
Mat3: 12
Mat3 Desc: STONES
Formation Top Depth: 127.0
Formation End Depth: 223.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932616158
Layer: 4
Color: 2
General Color: GREY
Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 223.0
Formation End Depth: 299.0
Formation End Depth UOM: ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616156			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		63.0			
Formation End Depth:		127.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932616155			
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		63.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966703002			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015715			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930759835			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		235			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Construction Record - Casing</u>					
Casing ID:		930759836			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		299			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996703002			
Pump Set At:					
Static Level:		24.0			
Final Level After Pumping:		100.0			
Recommended Pump Depth:					
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:		1			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:		No			
<u>Water Details</u>					
Water ID:		933955379			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		298.0			
Water Found Depth UOM:		ft			
<u>34</u>	1 of 2	ENE/6.0	465.7 / 0.88	Copernicus Educational Products Inc. 8194 County Rd 109 RR 3 Arthur ON	SCT
Established:		1989			
Plant Size (ft²):					
Employment:		25			
<u>--Details--</u>					
Description:		Material Handling Equipment Manufacturing			
SIC/NAICS Code:		333920			
Description:		Institutional Furniture Manufacturing			
SIC/NAICS Code:		337127			
<u>34</u>	2 of 2	ENE/6.0	465.7 / 0.88	Copernicus Educational Product 8194 County Road 109 RR 3 Arthur ON NOG 1A0	SCT
Established:		01-AUG-89			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plant Size (ft²):		37000			
Employment:					
--Details--					
Description:		Office Supplies (except Paper) Manufacturing			
SIC/NAICS Code:		339940			
Description:		Material Handling Equipment Manufacturing			
SIC/NAICS Code:		333920			

35	1 of 1	E/165.7	465.5 / 0.63	lot 34 con 2 ON	WWIS
Well ID:	6708747			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	5/1/1987
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1804
Casing Material:				Form Version:	1
Audit No:	06018			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	034
Well Depth:				Concession:	02
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6708747.pdf

Additional Detail(s) (Map)

Well Completed Date: 1987/04/16
Year Completed: 1987
Depth (m): 64.008
Latitude: 43.8329481018898
Longitude: -80.4989823360875
Path: 670\6708747.pdf

Bore Hole Information

Bore Hole ID:	10472637	Elevation:	465.347290
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	540281.20
Code OB Desc:	Overburden	North83:	4853441.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	16-Apr-1987 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<i>Supplier Comment:</i>					
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932640617			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932640618			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		160.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932640619			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		160.0			
Formation End Depth:		208.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932640620			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		208.0			
Formation End Depth:		210.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966708747			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11021207			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930769287			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		210			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996708747			
Pump Set At:					
Static Level:		28.0			
Final Level After Pumping:		40.0			
Recommended Pump Depth:		70.0			
Pumping Rate:		15.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		10			
Pumping Duration MIN:		10			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934616079			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		28.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934868427			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		28.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935137018			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		28.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934340934			
Test Type:		Recovery			
Test Duration:		15			
Test Level:		28.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933962029			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		190.0			
Water Found Depth UOM:		ft			

36	1 of 1	WSW/490.0	451.1 / -13.78	JONES BASELINE RR#1 lot 33 con 1 ARTHUR ON	WWIS
Well ID:	7044991			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Not Used			Date Received:	6/14/2007
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Quality			Abandonment Rec:	Yes
Water Type:				Contractor:	2644
Casing Material:				Form Version:	3
Audit No:	Z41980			Owner:	
Tag:				Street Name:	JONES BASELINE RR#1
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	033
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/704\7044991.pdf

Additional Detail(s) (Map)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well Completed Date:		2007/01/12			
Year Completed:		2007			
Depth (m):		103.632			
Latitude:		43.8245483021727			
Longitude:		-80.5244374592319			
Path:		704\7044991.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:	11767606			Elevation:	460.830322
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	u			East83:	538240.00
Code OB Desc:	all layers are unknown type			North83:	4852496.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	3
Date Completed:	12-Jan-2007 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	933104660				
Layer:	1				
Color:					
General Color:					
Mat1:					
Most Common Material:					
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	340.0				
Formation End Depth UOM:	ft				
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:	933321109				
Layer:	1				
Plug From:	4				
Plug To:	340				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:	933321110				
Layer:	2				
Plug From:					
Plug To:					
Plug Depth UOM:	ft				
<u>Method of Construction & Well Use</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction ID: Method Construction Code: Method Construction: Other Method Construction:		967044991			
<u>Pipe Information</u>					
Pipe ID: Casing No: Comment: Alt Name:		11775296 1			
<u>Construction Record - Casing</u>					
Casing ID: Layer: Material: Open Hole or Material: Depth From: Depth To: Casing Diameter: Casing Diameter UOM: Casing Depth UOM:		930900962 1 1 STEEL 0 300 4 inch ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID: Pump Set At: Static Level: Final Level After Pumping: Recommended Pump Depth: Pumping Rate: Flowing Rate: Recommended Pump Rate: Levels UOM: Rate UOM: Water State After Test Code: Water State After Test: Pumping Test Method: Pumping Duration HR: Pumping Duration MIN: Flowing:		11779361 28.0			
<u>Hole Diameter</u>					
Hole ID: Diameter: Depth From: Depth To: Hole Depth UOM: Hole Diameter UOM:		11854117 4.0 4.0 340.0 ft inch			

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1 of 1

W/347.9

464.9 / 0.03

211 ELIZA ST
ARTHUR ON

WWIS

Well ID: 7331058
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use:
Final Well Status: Observation Wells
Water Type:

Data Entry Status:
Data Src:
Date Received: 4/4/2019
Selected Flag: True
Abandonment Rec:
Contractor: 6607

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Material:				Form Version:	7
Audit No:	Z282666			Owner:	
Tag:	A246140			Street Name:	211 ELIZA ST
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/733\7331058.pdf

Additional Detail(s) (Map)

Well Completed Date: 2019/01/10
Year Completed: 2019
Depth (m): 6
Latitude: 43.831649141701
Longitude: -80.5280253297461
Path: 733\7331058.pdf

Bore Hole Information

Bore Hole ID:	1007421053	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537947.00
Code OB Desc:		North83:	4853283.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	10-Jan-2019 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	digit
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 1007823980
Layer: 2
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2: 28
Mat2 Desc: SAND
Mat3: 74
Mat3 Desc: LAYERED
Formation Top Depth: 4.800000190734863
Formation End Depth: 6.0
Formation End Depth UOM: m

Overburden and Bedrock

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		1007823979			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		4.800000190734863			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825677			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825678			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		4.19999980926514			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1007827830			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1007822126			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1007829160			
Layer:		1			
Slot:		.10			
Screen Top Depth:		4.5			
Screen End Depth:		6			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.40000009536743			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Results of Well Yield Testing					
Pump Test ID:		1007830111			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:		LPM			
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
Hole Diameter					
Hole ID:		1007827056			
Diameter:		21.0			
Depth From:		0.0			
Depth To:		6.0			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

38	1 of 1	WSW/4.4	455.9 / -8.97	109 WELLINGTON RD ARTHUR ON	WWIS
Well ID:	7158779			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	2/4/2011
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Supply			Abandonment Rec:	Yes
Water Type:				Contractor:	7221
Casing Material:				Form Version:	7
Audit No:	Z125322			Owner:	
Tag:				Street Name:	109 WELLINGTON RD
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/715\7158779.pdf

Additional Detail(s) (Map)

Well Completed Date:	2010/05/03
Year Completed:	2010
Depth (m):	
Latitude:	43.8285229841098
Longitude:	-80.5275773555389
Path:	715\7158779.pdf

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<u>Bore Hole Information</u>					
Bore Hole ID:	1003468881			Elevation:	452.290222
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537985.00
Code OB Desc:				North83:	4852936.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	3
Date Completed:	03-May-2010 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003754128				
Layer:	5				
Plug From:	110				
Plug To:	120				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003754129				
Layer:	6				
Plug From:	120				
Plug To:	150				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003754125				
Layer:	2				
Plug From:	30				
Plug To:	80				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003754124				
Layer:	1				
Plug From:	0				
Plug To:	30				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003754126				
Layer:	3				
Plug From:	80				
Plug To:	85				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003754127			
Layer:		4			
Plug From:		85			
Plug To:		110			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003754130			
Layer:		7			
Plug From:		150			
Plug To:		162			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003754122			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1003754116			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003754120			
Layer:					
Material:					
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:					
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1003754121			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:					
<u>Water Details</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water ID:		1003754119			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:	ft				
<u>Hole Diameter</u>					
Hole ID:		1003754118			
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:	ft				
Hole Diameter UOM:	inch				

39	1 of 1	W/20.3	455.9 / -8.97	211 ELIZA ST ARTHUR ON	WWIS
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Well ID:	7331060	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring and Test Hole	Date Received:	4/4/2019
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Observation Wells	Abandonment Rec:	
Water Type:		Contractor:	6607
Casing Material:		Form Version:	7
Audit No:	Z282668	Owner:	
Tag:	A246146	Street Name:	211 ELIZA ST
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	ARTHUR VILLAGE
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/733\7331060.pdf		

Additional Detail(s) (Map)

Well Completed Date:	2019/01/10
Year Completed:	2019
Depth (m):	7.6
Latitude:	43.8285965022356
Longitude:	-80.5279374512088
Path:	733\7331060.pdf

Bore Hole Information

Bore Hole ID:	1007421145	Elevation:	
DP2BR:		Elevarc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537956.00
Code OB Desc:		North83:	4852944.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	10-Jan-2019 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Remarks:				Location Method:	WWF
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007823986			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		84			
Mat3 Desc:		SILTY			
Formation Top Depth:		4.5			
Formation End Depth:		7.599999904632568			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007823987			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		61			
Mat3 Desc:		CLAYEY			
Formation Top Depth:		1.5			
Formation End Depth:		4.5			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007823985			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		91			
Mat3 Desc:		WATER-BEARING			
Formation Top Depth:		0.0			
Formation End Depth:		1.5			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug ID:		1007825681			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825682			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		5.69999980926514			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1007827832			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1007822128			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1007829162			
Layer:		1			
Slot:		.10			
Screen Top Depth:		6			
Screen End Depth:		7.59999990463257			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.40000009536743			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1007830113			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:		LPM			
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Hole Diameter</u>					
Hole ID:		1007827058			
Diameter:		21.0			
Depth From:		0.0			
Depth To:		7.599999904632568			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

40	1 of 1	WSW/55.6	449.8 / -15.01	ON	WWIS
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Well ID:	7171480	Data Entry Status:	Yes
Construction Date:		Data Src:	
Primary Water Use:		Date Received:	11/14/2011
Sec. Water Use:		Selected Flag:	True
Final Well Status:		Abandonment Rec:	
Water Type:		Contractor:	7366
Casing Material:		Form Version:	5
Audit No:	M10955	Owner:	
Tag:	A121250	Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/717\7171480.pdf

Additional Detail(s) (Map)

Well Completed Date:	2011/10/20
Year Completed:	2011
Depth (m):	
Latitude:	43.8278675289248
Longitude:	-80.5280178180432
Path:	717\7171480.pdf

Bore Hole Information

Bore Hole ID:	1003605826	Elevation:	455.779602
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537950.00
Code OB Desc:		North83:	4852863.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	20-Oct-2011 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
41	1 of 1	WSW/454.9	465.9 / 1.10	JONES BASELINE lot 33 con 1 ARTHUR ON	WWIS

Well ID:	7044990	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Domestic	Date Received:	6/14/2007
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2644
Casing Material:		Form Version:	3
Audit No:	Z41979	Owner:	
Tag:	A037667	Street Name:	JONES BASELINE
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	033
Well Depth:		Concession:	01
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/704\7044990.pdf

Additional Detail(s) (Map)

Well Completed Date: 2007/02/07
Year Completed: 2007
Depth (m): 24.384
Latitude: 43.8245635056916
Longitude: -80.525929688523
Path: 704\7044990.pdf

Bore Hole Information

Bore Hole ID:	11767605	Elevation:	466.965667
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	538120.00
Code OB Desc:	Overburden	North83:	4852497.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	07-Feb-2007 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 933104659
Layer: 4
Color: 2
General Color: GREY
Mat1: 11
Most Common Material: GRAVEL
Mat2: 28

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		SAND			
Mat3:		05			
Mat3 Desc:		CLAY			
Formation Top Depth:		78.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933104658			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		54.0			
Formation End Depth:		78.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933104656			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		36.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933104657			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		36.0			
Formation End Depth:		54.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933321108			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:	2				
Plug From:	60				
Plug To:	80				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	933321107				
Layer:	1				
Plug From:	0				
Plug To:	60				
Plug Depth UOM:	ft				
<u>Method of Construction & Well Use</u>					
Method Construction ID:	967044990				
Method Construction Code:	2				
Method Construction:	Rotary (Convent.)				
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:	11775295				
Casing No:	1				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	930900961				
Layer:	1				
Material:	1				
Open Hole or Material:	STEEL				
Depth From:					
Depth To:					
Casing Diameter:	6.25				
Casing Diameter UOM:	inch				
Casing Depth UOM:	ft				
<u>Results of Well Yield Testing</u>					
Pump Test ID:	11779360				
Pump Set At:	70.0				
Static Level:	45.0				
Final Level After Pumping:	60.0				
Recommended Pump Depth:	70.0				
Pumping Rate:	3.5				
Flowing Rate:					
Recommended Pump Rate:	3.5				
Levels UOM:	ft				
Rate UOM:	GPM				
Water State After Test Code:	1				
Water State After Test:	CLEAR				
Pumping Test Method:	1				
Pumping Duration HR:	2				
Pumping Duration MIN:	0				
Flowing:					
<u>Draw Down & Recovery</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test Detail ID:		11834165			
Test Type:		Recovery			
Test Duration:		1			
Test Level:		57.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834166			
Test Type:		Draw Down			
Test Duration:		2			
Test Level:		51.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834178			
Test Type:		Draw Down			
Test Duration:		20			
Test Level:		60.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834181			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		60.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834182			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		45.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834172			
Test Type:		Draw Down			
Test Duration:		5			
Test Level:		57.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834179			
Test Type:		Recovery			
Test Duration:		20			
Test Level:		45.5			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		11834174			
Test Type:		Draw Down			
Test Duration:		10			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Level:			69.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834164		
Test Type:			Draw Down		
Test Duration:			1		
Test Level:			49.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834169		
Test Type:			Recovery		
Test Duration:			3		
Test Level:			51.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834180		
Test Type:			Recovery		
Test Duration:			30		
Test Level:			45.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834167		
Test Type:			Recovery		
Test Duration:			2		
Test Level:			54.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834173		
Test Type:			Recovery		
Test Duration:			5		
Test Level:			48.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834175		
Test Type:			Recovery		
Test Duration:			10		
Test Level:			47.0		
Test Level UOM:			ft		
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:			11834171		
Test Type:			Recovery		
Test Duration:			4		
Test Level:			49.0		
Test Level UOM:			ft		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Draw Down & Recovery

Pump Test Detail ID: 11834177
 Test Type: Recovery
 Test Duration: 15
 Test Level: 46.0
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 11834168
 Test Type: Draw Down
 Test Duration: 3
 Test Level: 53.0
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 11834170
 Test Type: Draw Down
 Test Duration: 4
 Test Level: 55.0
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 11834176
 Test Type: Draw Down
 Test Duration: 15
 Test Level: 56.0
 Test Level UOM: ft

Water Details

Water ID: 934087011
 Layer: 1
 Kind Code: 1
 Kind: FRESH
 Water Found Depth: 74.0
 Water Found Depth UOM: ft

Hole Diameter

Hole ID: 11854116
 Diameter: 8.75
 Depth From: 0.0
 Depth To: 80.0
 Hole Depth UOM: ft
 Hole Diameter UOM: inch

42	1 of 1	WSW/303.9	466.9 / 2.08	lot 36 con 1 ON	WWIS
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Well ID:	6706605	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	1/10/1978
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	1804
Casing Material:		Form Version:	1
Audit No:		Owner:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Street Name: County: WELLINGTON Municipality: WEST GARAFRAXA TOWNSHIP Site Info: Lot: 036 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:	

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6706605.pdf

Additional Detail(s) (Map)

Well Completed Date: 1977/12/03
Year Completed: 1977
Depth (m): 63.3984
Latitude: 43.8257033942991
Longitude: -80.5272364476979
Path: 670\6706605.pdf

Bore Hole Information

Bore Hole ID: 10470681	Elevation: 467.875732
DP2BR:	Elevrc:
Spatial Status:	Zone: 17
Code OB: o	East83: 538014.20
Code OB Desc: Overburden	North83: 4852623.00
Open Hole:	Org CS:
Cluster Kind:	UTMRC: 5
Date Completed: 03-Dec-1977 00:00:00	UTMRC Desc: margin of error : 100 m - 300 m
Remarks:	Location Method: p5
Elevrc Desc:	
Location Source Date:	
Improvement Location Source:	
Improvement Location Method:	
Source Revision Comment:	
Supplier Comment:	

Overburden and Bedrock

Materials Interval

Formation ID: 932631654
Layer: 2
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 8.0
Formation End Depth: 90.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932631657			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		195.0			
Formation End Depth:		208.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932631655			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		14			
Mat2 Desc:		HARDPAN			
Mat3:		12			
Mat3 Desc:		STONES			
Formation Top Depth:		90.0			
Formation End Depth:		160.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932631653			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		01			
Most Common Material:		FILL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		8.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932631656			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		160.0			
Formation End Depth:		195.0			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Formation End Depth UOM:</i>		ft			
<u>Method of Construction & Well Use</u>					
<i>Method Construction ID:</i>		966706605			
<i>Method Construction Code:</i>		1			
<i>Method Construction:</i>		Cable Tool			
<i>Other Method Construction:</i>					
<u>Pipe Information</u>					
<i>Pipe ID:</i>		11019251			
<i>Casing No:</i>		1			
<i>Comment:</i>					
<i>Alt Name:</i>					
<u>Construction Record - Casing</u>					
<i>Casing ID:</i>		930765897			
<i>Layer:</i>		1			
<i>Material:</i>		1			
<i>Open Hole or Material:</i>		STEEL			
<i>Depth From:</i>					
<i>Depth To:</i>		208			
<i>Casing Diameter:</i>		5			
<i>Casing Diameter UOM:</i>		inch			
<i>Casing Depth UOM:</i>		ft			
<u>Results of Well Yield Testing</u>					
<i>Pump Test ID:</i>		996706605			
<i>Pump Set At:</i>					
<i>Static Level:</i>		58.0			
<i>Final Level After Pumping:</i>		105.0			
<i>Recommended Pump Depth:</i>		160.0			
<i>Pumping Rate:</i>		15.0			
<i>Flowing Rate:</i>					
<i>Recommended Pump Rate:</i>		8.0			
<i>Levels UOM:</i>		ft			
<i>Rate UOM:</i>		GPM			
<i>Water State After Test Code:</i>		2			
<i>Water State After Test:</i>		CLOUDY			
<i>Pumping Test Method:</i>		2			
<i>Pumping Duration HR:</i>		3			
<i>Pumping Duration MIN:</i>		30			
<i>Flowing:</i>		No			
<u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>		934620392			
<i>Test Type:</i>		Recovery			
<i>Test Duration:</i>		30			
<i>Test Level:</i>		60.0			
<i>Test Level UOM:</i>		ft			
<u>Draw Down & Recovery</u>					
<i>Pump Test Detail ID:</i>		935130452			
<i>Test Type:</i>		Recovery			
<i>Test Duration:</i>		60			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Level:		58.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934344720			
Test Type:		Recovery			
Test Duration:		15			
Test Level:		75.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934874314			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		58.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933959580			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		90.0			
Water Found Depth UOM:		ft			

43	1 of 1	WSW/185.3	462.2 / -2.61	lot 37 con 1 ON	WWIS
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Well ID:	6703273	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	8/14/1968
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	1705
Casing Material:		Form Version:	1
Audit No:		Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	037
Well Depth:		Concession:	01
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703273.pdf

Additional Detail(s) (Map)

Well Completed Date:	1968/07/09
Year Completed:	1968
Depth (m):	66.1416
Latitude:	43.8266078534473
Longitude:	-80.5282242432332
Path:	670\6703273.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Bore Hole Information

Bore Hole ID:	10467415	Elevation:	463.361541
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	537934.20
Code OB Desc:	Overburden	North83:	4852723.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	09-Jul-1968 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	932617281
Layer:	6
Color:	
General Color:	
Mat1:	14
Most Common Material:	HARDPAN
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	172.0
Formation End Depth:	178.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	932617278
Layer:	3
Color:	
General Color:	
Mat1:	09
Most Common Material:	MEDIUM SAND
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	100.0
Formation End Depth:	138.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	932617282
Layer:	7
Color:	
General Color:	
Mat1:	14
Most Common Material:	HARDPAN

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		178.0			
Formation End Depth:		207.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617277			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		05			
Mat3 Desc:		CLAY			
Formation Top Depth:		18.0			
Formation End Depth:		100.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617276			
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		18.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617283			
Layer:		8			
Color:					
General Color:					
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		207.0			
Formation End Depth:		217.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932617279			
Layer:		4			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		138.0			
Formation End Depth:		143.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617280			
Layer:		5			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:		14			
Mat2 Desc:		HARDPAN			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		143.0			
Formation End Depth:		172.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966703273			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015985			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930760350			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		217			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996703273			
Pump Set At:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Static Level:		68.0			
Final Level After Pumping:		79.0			
Recommended Pump Depth:		95.0			
Pumping Rate:		7.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		5			
Pumping Duration MIN:		0			
Flowing:		No			

Water Details

Water ID: 933955719
 Layer: 1
 Kind Code: 1
 Kind: FRESH
 Water Found Depth: 217.0
 Water Found Depth UOM: ft

[44](#) 1 of 1 **WSW/303.9** **466.9 / 2.11** **lot 37 con 1 ON** **WWIS**

Well ID:	6708594	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	12/5/1986
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	1804
Casing Material:		Form Version:	1
Audit No:	05999	Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	037
Well Depth:		Concession:	01
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6708594.pdf

Additional Detail(s) (Map)

Well Completed Date: 1986/11/28
Year Completed: 1986
Depth (m): 66.4464
Latitude: 43.8256062585561
Longitude: -80.5276973635831
Path: 670\6708594.pdf

Bore Hole Information

Bore Hole ID: 10472488 **Elevation:** 468.120117

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	0			East83:	537977.20
Code OB Desc:	Overburden			North83:	4852612.00
Open Hole:				Org CS:	3
Cluster Kind:				UTMRC:	3
Date Completed:	28-Nov-1986 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 932640028
Layer: 3
Color: 6
General Color: BROWN
Mat1: 14
Most Common Material: HARDPAN
Mat2: 12
Mat2 Desc: STONES
Mat3:
Mat3 Desc:
Formation Top Depth: 66.0
Formation End Depth: 202.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932640026
Layer: 1
Color: 6
General Color: BROWN
Mat1: 01
Most Common Material: FILL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 5.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932640029
Layer: 4
Color: 6
General Color: BROWN
Mat1: 11
Most Common Material: GRAVEL
Mat2: 28
Mat2 Desc: SAND
Mat3:
Mat3 Desc:
Formation Top Depth: 202.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		218.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932640027			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		5.0			
Formation End Depth:		66.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966708594			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11021058			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930769018			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		218			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996708594			
Pump Set At:					
Static Level:		58.0			
Final Level After Pumping:		80.0			
Recommended Pump Depth:		110.0			
Pumping Rate:		18.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		2			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Duration HR:	2				
Pumping Duration MIN:	20				
Flowing:	No				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934349167				
Test Type:	Recovery				
Test Duration:	15				
Test Level:	60.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934615563				
Test Type:	Recovery				
Test Duration:	30				
Test Level:	58.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934868331				
Test Type:	Recovery				
Test Duration:	45				
Test Level:	58.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	935136492				
Test Type:	Recovery				
Test Duration:	60				
Test Level:	58.0				
Test Level UOM:	ft				
<u>Water Details</u>					
Water ID:	933961853				
Layer:	1				
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	208.0				
Water Found Depth UOM:	ft				

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1 of 2

WSW/49.1

449.7 / -15.17

lot 37 con 1
ON

WWIS

Well ID:	6712213	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	4/21/1997
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2576
Casing Material:		Form Version:	1
Audit No:	177322	Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	037

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6712213.pdf

Additional Detail(s) (Map)

Well Completed Date: 1997/04/09
Year Completed: 1997
Depth (m): 67.056
Latitude: 43.8278006766071
Longitude: -80.5292732302879
Path: 671\6712213.pdf

Bore Hole Information

Bore Hole ID:	10476046	Elevation:	456.982543
DP2BR:	175.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537849.10
Code OB Desc:	Bedrock	North83:	4852855.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	09-Apr-1997 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932656135
Layer: 5
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 11
Mat2 Desc: GRAVEL
Mat3: 91
Mat3 Desc: WATER-BEARING
Formation Top Depth: 94.0
Formation End Depth: 103.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932656137
Layer: 7
Color: 6
General Color: BROWN
Mat1: 05

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:		91			
Mat3 Desc:		WATER-BEARING			
Formation Top Depth:		120.0			
Formation End Depth:		156.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932656136			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		103.0			
Formation End Depth:		120.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932656138			
Layer:		8			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		91			
Mat3 Desc:		WATER-BEARING			
Formation Top Depth:		156.0			
Formation End Depth:		175.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932656133			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		10.0			
Formation End Depth:		49.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932656134			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		49.0			
Formation End Depth:		94.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932656131			
Layer:		1			
Color:					
General Color:					
Mat1:		01			
Most Common Material:		FILL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932656132			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		86			
Mat2 Desc:		STICKY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		10.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932656139			
Layer:		9			
Color:		5			
General Color:		YELLOW			
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		15			
Mat2 Desc:		LIMESTONE			
Mat3:		71			
Mat3 Desc:		FRACTURED			
Formation Top Depth:		175.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		220.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933210653			
Layer:		1			
Plug From:		0			
Plug To:		35			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966712213			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11024616			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930775497			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		220			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930775496			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		193			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996712213			
Pump Set At:					
Static Level:		23.0			
Final Level After Pumping:					
Recommended Pump Depth:		50.0			
Pumping Rate:		150.0			
Flowing Rate:					
Recommended Pump Rate:		100.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		2			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934868459			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		23.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935137835			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		23.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933966436			
Layer:		2			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		198.0			
Water Found Depth UOM:		ft			
<u>Water Details</u>					
Water ID:		933966435			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		156.0			
Water Found Depth UOM:		ft			
<u>Water Details</u>					
Water ID:		933966437			
Layer:		3			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		217.0			
Water Found Depth UOM:		ft			
45	2 of 2	WSW/49.1	449.7 / -15.17	lot 37 con 1 ON	WWIS
Well ID:		6712214		Data Entry Status:	
Construction Date:				Data Src: 1	
Primary Water Use:		Not Used		Date Received: 4/21/1997	
Sec. Water Use:				Selected Flag: True	
Final Well Status:		Abandoned-Other		Abandonment Rec:	
Water Type:				Contractor: 2576	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Material:				Form Version:	1
Audit No:	177323			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6712214.pdf				
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1997/04/10				
Year Completed:	1997				
Depth (m):	34.1376				
Latitude:	43.8278006766071				
Longitude:	-80.5292732302879				
Path:	671\6712214.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10476047			Elevation:	456.982543
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	537849.10
Code OB Desc:	Overburden			North83:	4852855.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	10-Apr-1997 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932656140				
Layer:	1				
Color:					
General Color:					
Mat1:	23				
Most Common Material:	PREVIOUSLY DUG				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	112.0				
Formation End Depth UOM:	ft				
<u>Annular Space/Abandonment</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Sealing Record</u>					
Plug ID:		933210654			
Layer:		1			
Plug From:		112			
Plug To:		90			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933210655			
Layer:		2			
Plug From:		90			
Plug To:		40			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933210656			
Layer:		3			
Plug From:		40			
Plug To:		5			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966712214			
Method Construction Code:		B			
Method Construction:		Other Method			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11024617			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930775498			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:					
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

[46](#)

1 of 1

WSW/123.0

456.2 / -8.66

lot 37 con 1
ON

WWIS

Well ID: 6702883
 Construction Date:
 Primary Water Use: Domestic
 Sec. Water Use: 0
 Final Well Status: Water Supply

Data Entry Status:
 Data Src: 1
 Date Received: 11/26/1956
 Selected Flag: True
 Abandonment Rec:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Type:				Contractor:	1723
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6702883.pdf

Additional Detail(s) (Map)

Well Completed Date: 1956/10/24
Year Completed: 1956
Depth (m): 74.3712
Latitude: 43.8270791634541
Longitude: -80.5289791742443
Path: 670\6702883.pdf

Bore Hole Information

Bore Hole ID:	10467026	Elevation:	462.164642
DP2BR:	228.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537873.20
Code OB Desc:	Bedrock	North83:	4852775.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	24-Oct-1956 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932615641
Layer: 3
Color:
General Color:
Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 228.0
Formation End Depth: 244.0
Formation End Depth UOM: ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932615640		
Layer:			2		
Color:					
General Color:					
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			12.0		
Formation End Depth:			228.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:			932615639		
Layer:			1		
Color:					
General Color:					
Mat1:			23		
Most Common Material:			PREVIOUSLY DUG		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			0.0		
Formation End Depth:			12.0		
Formation End Depth UOM:			ft		
<u>Method of Construction & Well Use</u>					
Method Construction ID:			966702883		
Method Construction Code:			1		
Method Construction:			Cable Tool		
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:			11015596		
Casing No:			1		
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:			930759616		
Layer:			2		
Material:			4		
Open Hole or Material:			OPEN HOLE		
Depth From:					
Depth To:			244		
Casing Diameter:			4		
Casing Diameter UOM:			inch		
Casing Depth UOM:			ft		
<u>Construction Record - Casing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing ID:		930759615			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		228			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

Results of Well Yield Testing

Pump Test ID:	996702883
Pump Set At:	
Static Level:	70.0
Final Level After Pumping:	75.0
Recommended Pump Depth:	
Pumping Rate:	15.0
Flowing Rate:	
Recommended Pump Rate:	
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	
Pumping Duration MIN:	
Flowing:	No

Water Details

Water ID:	933955242
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	244.0
Water Found Depth UOM:	ft

47	1 of 1	WSW/55.4	452.3 / -12.53	lot 37 con 1 ON	WWIS
Well ID:	6702882			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Commerical			Date Received:	6/22/1953
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	2411
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6702882.pdf			

Additional Detail(s) (Map)

Well Completed Date: 1952/10/15
Year Completed: 1952
Depth (m): 65.8368
Latitude: 43.8277558589849
Longitude: -80.5293220864643
Path: 670\6702882.pdf

Bore Hole Information

Bore Hole ID:	10467025	Elevation:	457.479095
DP2BR:	200.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537845.20
Code OB Desc:	Bedrock	North83:	4852850.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	15-Oct-1952 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932615637
Layer: 3
Color:
General Color:
Mat1: 11
Most Common Material: GRAVEL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 115.0
Formation End Depth: 200.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932615638
Layer: 4
Color:
General Color:
Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 200.0
Formation End Depth: 216.0
Formation End Depth UOM: ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932615635			
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		13			
Mat2 Desc:		BOULDERS			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		60.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932615636			
Layer:		2			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		60.0			
Formation End Depth:		115.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966702882			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015595			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930759613			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		200			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Construction Record - Casing</u>					
Casing ID:			930759614		
Layer:			2		
Material:			4		
Open Hole or Material:			OPEN HOLE		
Depth From:					
Depth To:			216		
Casing Diameter:			4		
Casing Diameter UOM:			inch		
Casing Depth UOM:			ft		
<u>Results of Well Yield Testing</u>					
Pump Test ID:			996702882		
Pump Set At:					
Static Level:			40.0		
Final Level After Pumping:			44.0		
Recommended Pump Depth:					
Pumping Rate:			10.0		
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:			ft		
Rate UOM:			GPM		
Water State After Test Code:			1		
Water State After Test:			CLEAR		
Pumping Test Method:			1		
Pumping Duration HR:			5		
Pumping Duration MIN:			0		
Flowing:			No		
<u>Water Details</u>					
Water ID:			933955241		
Layer:			1		
Kind Code:			1		
Kind:			FRESH		
Water Found Depth:			216.0		
Water Found Depth UOM:			ft		
48	1 of 1	W/294.4	463.1 / -1.72	211 ELISA ST lot 1 con 1 ARTHUR ON	WWIS
Well ID:	7263086			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	5/18/2016
Sec. Water Use:				Selected Flag:	True
Final Well Status:	0			Abandonment Rec:	Yes
Water Type:				Contractor:	7557
Casing Material:				Form Version:	7
Audit No:	Z218731			Owner:	
Tag:				Street Name:	211 ELISA ST
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	001
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Clear/Cloudy:</i>					
<i>PDF URL (Map):</i>					
<u>Additional Detail(s) (Map)</u>					
<i>Well Completed Date:</i>		2016/04/25			
<i>Year Completed:</i>		2016			
<i>Depth (m):</i>					
<i>Latitude:</i>		43.8306413306218			
<i>Longitude:</i>		-80.5303590866536			
<i>Path:</i>					
<u>Bore Hole Information</u>					
<i>Bore Hole ID:</i>	1005992984			<i>Elevation:</i>	462.555572
<i>DP2BR:</i>				<i>Elevrc:</i>	
<i>Spatial Status:</i>				<i>Zone:</i>	17
<i>Code OB:</i>				<i>East83:</i>	537760.00
<i>Code OB Desc:</i>				<i>North83:</i>	4853170.00
<i>Open Hole:</i>				<i>Org CS:</i>	UTM83
<i>Cluster Kind:</i>				<i>UTMRC:</i>	4
<i>Date Completed:</i>	25-Apr-2016 00:00:00			<i>UTMRC Desc:</i>	margin of error : 30 m - 100 m
<i>Remarks:</i>				<i>Location Method:</i>	wwr
<i>Elevrc Desc:</i>					
<i>Location Source Date:</i>					
<i>Improvement Location Source:</i>					
<i>Improvement Location Method:</i>					
<i>Source Revision Comment:</i>					
<i>Supplier Comment:</i>					
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>	1006093574				
<i>Layer:</i>	1				
<i>Plug From:</i>					
<i>Plug To:</i>					
<i>Plug Depth UOM:</i>	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>	1006093575				
<i>Layer:</i>	1				
<i>Plug From:</i>	8				
<i>Plug To:</i>	6				
<i>Plug Depth UOM:</i>	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>	1006093576				
<i>Layer:</i>	2				
<i>Plug From:</i>	6				
<i>Plug To:</i>	0				
<i>Plug Depth UOM:</i>	ft				
<u>Method of Construction & Well Use</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction ID: Method Construction Code: Method Construction: Other Method Construction:		1006093573			
<u>Pipe Information</u>					
Pipe ID: Casing No: Comment: Alt Name:		1006093567 0			
<u>Construction Record - Screen</u>					
Screen ID: Layer: Slot: Screen Top Depth: Screen End Depth: Screen Material: Screen Depth UOM: Screen Diameter UOM: Screen Diameter:		1006093572			
		ft			
		inch			
<u>Water Details</u>					
Water ID: Layer: Kind Code: Kind: Water Found Depth: Water Found Depth UOM:		1006093570			
		ft			
<u>Hole Diameter</u>					
Hole ID: Diameter: Depth From: Depth To: Hole Depth UOM: Hole Diameter UOM:		1006093569			
		ft			
		inch			

49	1 of 32	W/96.4	450.6 / -14.25	PIONEER PETROLIUM INC 8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	RST
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Headcode: 01186800
Headcode Desc: SERVICE STATIONS-GASOLINE, OIL & NATURAL GAS
Phone:
List Name:
Description:

49	2 of 32	W/96.4	450.6 / -14.25	PIONEER PETROLIUM INC 8006 WELLINGTON ROAD 109 FERGUS ON N0G 1A0	RST
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Headcode: 1186800
Headcode Desc: Service Stations-Gasoline, Oil & Natural Gas
Phone: 5198486804
List Name:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Description:

49	3 of 32	W/96.4	450.6 / -14.25	PIONEER PETROLEUMS MANAGEMENT INC** 8006 WELLINGTON RD 109 LOT 1 CON 1, HWY 6&9 ARTHUR ON	FSTH
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License Issue Date: 8/7/2003
 Tank Status: Licensed
 Tank Status As Of: August 2007
 Operation Type: Retail Fuel Outlet
 Facility Type: Gasoline Station - Self Serve

--Details--

Status: Active
 Year of Installation: 1988
 Corrosion Protection:
 Capacity: 36380
 Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
 Year of Installation: 1988
 Corrosion Protection:
 Capacity: 36380
 Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
 Year of Installation: 1988
 Corrosion Protection:
 Capacity: 36380
 Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
 Year of Installation: 1988
 Corrosion Protection:
 Capacity: 27230
 Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
 Year of Installation: 1988
 Corrosion Protection:
 Capacity: 27230
 Tank Fuel Type: Liquid Fuel Single Wall UST - Diesel

49	4 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK
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Delisted Expired Fuel Safety Facilities

Instance No:	9524866	Expired Date:
Status:	EXPIRED	Max Hazard Rank:
Instance ID:	382525	Facility Location:
Instance Type:	FS Facility	Facility Type:
Instance Creation Dt:		Fuel Type 2:
Instance Install Dt:		Fuel Type 3:
Item Description:		Panam Related:
Manufacturer:		Panam Venue Nm:
Model:		External Identifier:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Serial No: ULC Standard: Quantity: Unit of Measure: Overfill Prot Type: Creation Date: Next Periodic Str DT: TSSA Base Sched Cycle 2: TSSAMax Hazard Rank 1: TSSA Risk Based Periodic Yn: TSSA Volume of Directives: TSSA Periodic Exempt: TSSA Statutory Interval: TSSA Recd Insp Interva: TSSA Recd Tolerance: TSSA Program Area: TSSA Program Area 2:		Description: Original Source: Record Date:		Item: Piping Steel: Piping Galvanized: Tank Single Wall St: Piping Underground: Tank Underground: Source:	
		FS Gasoline Station - Full Serve			
		EXP			
		Up to Mar 2012			

49	5 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON N0G 1A0	DTNK
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Delisted Expired Fuel Safety Facilities

Instance No:	10263304	Expired Date:	6/10/1999
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:		Facility Location:	
Instance Type:	FS Facility	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	
ULC Standard:		Piping Steel:	
Quantity:		Piping Galvanized:	
Unit of Measure:		Tank Single Wall St:	
Overfill Prot Type:		Piping Underground:	
Creation Date:		Tank Underground:	
Next Periodic Str DT:		Source:	
TSSA Base Sched Cycle 2:			
TSSAMax Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			
TSSA Statutory Interval:			
TSSA Recd Insp Interva:			
TSSA Recd Tolerance:			
TSSA Program Area:			
TSSA Program Area 2:			
Description:			
Original Source:	EXP		
Record Date:	Up to May 2013		

49	6 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Delisted Expired Fuel Safety Facilities

Instance No:	11043415	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	64728	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	
ULC Standard:		Piping Steel:	
Quantity:		Piping Galvanized:	
Unit of Measure:		Tank Single Wall St:	
Overfill Prot Type:		Piping Underground:	
Creation Date:		Tank Underground:	
Next Periodic Str DT:		Source:	
TSSA Base Sched Cycle 2:			
TSSAMax Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			
TSSA Statutory Interval:			
TSSA Recd Insp Interva:			
TSSA Recd Tolerance:			
TSSA Program Area:			
TSSA Program Area 2:			
Description:	FS Piping		
Original Source:	EXP		
Record Date:	Up to Mar 2012		

49	7 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK
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Delisted Expired Fuel Safety Facilities

Instance No:	11043401	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	65828	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	
ULC Standard:		Piping Steel:	
Quantity:		Piping Galvanized:	
Unit of Measure:		Tank Single Wall St:	
Overfill Prot Type:		Piping Underground:	
Creation Date:		Tank Underground:	
Next Periodic Str DT:		Source:	
TSSA Base Sched Cycle 2:			
TSSAMax Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
TSSA Statutory Interval: TSSA Recd Insp Interva: TSSA Recd Tolerance: TSSA Program Area: TSSA Program Area 2: Description: FS Piping Original Source: EXP Record Date: Up to Mar 2012					
49	8 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK

Delisted Expired Fuel Safety Facilities

Instance No:	63324778	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	347157	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	
ULC Standard:		Piping Steel:	
Quantity:		Piping Galvanized:	
Unit of Measure:		Tank Single Wall St:	
Overfill Prot Type:		Piping Underground:	
Creation Date:		Tank Underground:	
Next Periodic Str DT:		Source:	
TSSA Base Sched Cycle 2:			
TSSAMax Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			
TSSA Statutory Interval:			
TSSA Recd Insp Interva:			
TSSA Recd Tolerance:			
TSSA Program Area:			
TSSA Program Area 2:			
Description:	FS Piping		
Original Source:	EXP		
Record Date:	Up to Mar 2012		

49	9 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK
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Delisted Expired Fuel Safety Facilities

Instance No:	63324779	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	348348	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Model: Serial No: ULC Standard: Quantity: Unit of Measure: Overfill Prot Type: Creation Date: Next Periodic Str DT: TSSA Base Sched Cycle 2: TSSAMax Hazard Rank 1: TSSA Risk Based Periodic Yn: TSSA Volume of Directives: TSSA Periodic Exempt: TSSA Statutory Interval: TSSA Recd Insp Interva: TSSA Recd Tolerance: TSSA Program Area: TSSA Program Area 2:				External Identifier: Item: Piping Steel: Piping Galvanized: Tank Single Wall St: Piping Underground: Tank Underground: Source:	
		FS Piping			
		EXP			
		Up to Mar 2012			

49	10 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC. 8006 WELLINGTON RD 109 ARTHUR ON	DTNK
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Delisted Expired Fuel Safety Facilities

Instance No: Status: Instance ID: Instance Type: Instance Creation Dt: Instance Install Dt: Item Description: Manufacturer: Model: Serial No: ULC Standard: Quantity: Unit of Measure: Overfill Prot Type: Creation Date: Next Periodic Str DT: TSSA Base Sched Cycle 2: TSSAMax Hazard Rank 1: TSSA Risk Based Periodic Yn: TSSA Volume of Directives: TSSA Periodic Exempt: TSSA Statutory Interval: TSSA Recd Insp Interva: TSSA Recd Tolerance: TSSA Program Area: TSSA Program Area 2:	63324777 EXPIRED 348996 FS Piping	Expired Date: Max Hazard Rank: Facility Location: Facility Type: Fuel Type 2: Fuel Type 3: Panam Related: Panam Venue Nm: External Identifier: Item: Piping Steel: Piping Galvanized: Tank Single Wall St: Piping Underground: Tank Underground: Source:	
	FS Piping		
	EXP		
	Up to Mar 2012		

49	11 of 32	W/96.4	450.6 / -14.25	PARKLAND CORPORATION 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA	FST
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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ON

Instance No: 11583799
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Double Wall UST
Install Date: 5/21/2009
Install Year: 1988
Years in Service:
Model: NULL
Description:
Capacity: 27230
Tank Material: Fiberglass (FRP)
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS Gasoline Station - Self Serve
Facility Location:
Device Installed Location: 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Diesel
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PARKLAND CORPORATION

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PARKLAND CORPORATION
Item: FS LIQUID FUEL TANK

49	12 of 32	W/96.4	450.6 / -14.25	PARKLAND CORPORATION 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
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Instance No: 11583743
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Double Wall UST
Install Date: 5/21/2009
Install Year: 1988
Years in Service:
Model: NULL
Description:
Capacity: 36380
Tank Material: Fiberglass (FRP)
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS Gasoline Station - Self Serve
Facility Location:
Device Installed Location: 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PARKLAND CORPORATION

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PARKLAND CORPORATION
Item: FS LIQUID FUEL TANK

49	13 of 32	W/96.4	450.6 / -14.25	PARKLAND CORPORATION 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
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Instance No:	11583758	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:	FS Liquid Fuel Tank	Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Gasoline
Tank Type:	Double Wall UST	Fuel Type2:	NULL
Install Date:	5/21/2009	Fuel Type3:	NULL
Install Year:	1988	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	
Capacity:	36380	Num Underground:	
Tank Material:	Fiberglass (FRP)	Panam Related:	
Corrosion Protect:		Panam Venue:	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:	FS Gasoline Station - Self Serve		
Facility Location:			
Device Installed Location:	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA		

Fuel Storage Tank Details

Owner Account Name: PARKLAND CORPORATION

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PARKLAND CORPORATION
Item: FS LIQUID FUEL TANK

49	14 of 32	W/96.4	450.6 / -14.25	PARKLAND CORPORATION 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
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Instance No:	11583729	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:	FS Liquid Fuel Tank	Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Gasoline
Tank Type:	Double Wall UST	Fuel Type2:	NULL
Install Date:	5/21/2009	Fuel Type3:	NULL
Install Year:	1988	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	
Capacity:	36380	Num Underground:	
Tank Material:	Fiberglass (FRP)	Panam Related:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Corrosion Protect:				Panam Venue:	
Overfill Protect:					
Facility Type:		FS Liquid Fuel Tank			
Parent Facility Type:		FS Gasoline Station - Self Serve			
Facility Location:					
Device Installed Location:		8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA			
<u>Fuel Storage Tank Details</u>					
Owner Account Name:		PARKLAND CORPORATION			
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name:		PARKLAND CORPORATION			
Item:		FS LIQUID FUEL TANK			

49	15 of 32	W/96.4	450.6 / -14.25	PARKLAND CORPORATION 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
Instance No:		11583773		Manufacturer:	
Status:				Serial No:	
Cont Name:				Ulc Standard:	
Instance Type:		FS Liquid Fuel Tank		Quantity:	
Item:		FS LIQUID FUEL TANK		Unit of Measure:	
Item Description:		FS Liquid Fuel Tank		Fuel Type: Gasoline	
Tank Type:		Double Wall UST		Fuel Type2: NULL	
Install Date:		5/21/2009		Fuel Type3: NULL	
Install Year:		1988		Piping Steel:	
Years in Service:				Piping Galvanized:	
Model:		NULL		Tanks Single Wall St:	
Description:				Piping Underground:	
Capacity:		27230		Num Underground:	
Tank Material:		Fiberglass (FRP)		Panam Related:	
Corrosion Protect:				Panam Venue:	
Overfill Protect:					
Facility Type:		FS Liquid Fuel Tank			
Parent Facility Type:		FS Gasoline Station - Self Serve			
Facility Location:					
Device Installed Location:		8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA			
<u>Fuel Storage Tank Details</u>					
Owner Account Name:		PARKLAND CORPORATION			
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name:		PARKLAND CORPORATION			
Item:		FS LIQUID FUEL TANK			

49	16 of 32	W/96.4	450.6 / -14.25	LL SNACK EXPRESS 8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	RST
Headcode:		01186800			
Headcode Desc:		SERVICE STATIONS GASOLINE OIL & NATURAL			
Phone:		5198486804			
List Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<i>Description:</i>					
49	17 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY LP 8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	RST
<i>Headcode:</i>		01186800			
<i>Headcode Desc:</i>		SERVICE STATIONS GASOLINE OIL & NATURAL			
<i>Phone:</i>		5198486804			
<i>List Name:</i>					
<i>Description:</i>					
49	18 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	19 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	20 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	21 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	22 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	23 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	DTNK
49	24 of 32	W/96.4	450.6 / -14.25	PIONEER SNACK EXPRESS 8006 WELLINGTON ROAD 109 ARTHUR ON N0G1A0	RST
<i>Headcode:</i>		01186800			
<i>Headcode Desc:</i>		SERVICE STATIONS GASOLINE OIL & NATURAL GAS			
<i>Phone:</i>		5198486804			
<i>List Name:</i>		INFO-DIRECT(TM) BUSINESS FILE			
<i>Description:</i>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
49	25 of 32	W/96.4	450.6 / -14.25	8006 WELLINGTON RD 109 ARTHUR ON N0G 1A0	FST
<p>Instance No: 16561450 Status: Active Cont Name: Instance Type: Item: FS GASOLINE STATION - SELF SERVE Item Description: Tank Type: Install Date: Install Year: Years in Service: Model: Description: Capacity: Tank Material: Corrosion Protect: Overfill Protect: Facility Type: Parent Facility Type: Facility Location: Device Installed Location:</p> <p>Manufacturer: Serial No: Ulc Standard: Quantity: Unit of Measure: Fuel Type: Fuel Type2: Fuel Type3: Piping Steel: 0 Piping Galvanized: 0 Tanks Single Wall St: 0 Piping Underground: 3 Num Underground: 5 Panam Related: Panam Venue:</p>					
49	26 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
<p>Instance No: 11043373 Status: Cont Name: Instance Type: Item: FS LIQUID FUEL TANK Item Description: FS Liquid Fuel Tank Tank Type: Liquid Fuel Single Wall UST Install Date: 10/2/1989 Install Year: 1989 Years in Service: Model: NULL Description: Capacity: 35000 Tank Material: Fiberglass (FRP) Corrosion Protect: Overfill Protect: Facility Type: FS Liquid Fuel Tank Parent Facility Type: Facility Location: Device Installed Location: 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA</p> <p>Manufacturer: Serial No: Ulc Standard: Quantity: Unit of Measure: Fuel Type: Gasoline Fuel Type2: NULL Fuel Type3: NULL Piping Steel: Piping Galvanized: Tanks Single Wall St: Piping Underground: Num Underground: Panam Related: Panam Venue:</p>					
<u>Fuel Storage Tank Details</u>					
Owner Account Name: PIONEER ENERGY MANAGEMENT INC					
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name: PIONEER ENERGY MANAGEMENT INC					
Item: FS LIQUID FUEL TANK					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
49	27 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
<p>Instance No: 11043388</p> <p>Status:</p> <p>Cont Name:</p> <p>Instance Type:</p> <p>Item: FS LIQUID FUEL TANK</p> <p>Item Description: FS Liquid Fuel Tank</p> <p>Tank Type: Liquid Fuel Single Wall UST</p> <p>Install Date: 10/2/1989</p> <p>Install Year: 1989</p> <p>Years in Service:</p> <p>Model: NULL</p> <p>Description:</p> <p>Capacity: 35000</p> <p>Tank Material: Fiberglass (FRP)</p> <p>Corrosion Protect:</p> <p>Overfill Protect:</p> <p>Facility Type: FS Liquid Fuel Tank</p> <p>Parent Facility Type:</p> <p>Facility Location:</p> <p>Device Installed Location: 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA</p> <p>Manufacturer:</p> <p>Serial No:</p> <p>Ulc Standard:</p> <p>Quantity:</p> <p>Unit of Measure:</p> <p>Fuel Type: Gasoline</p> <p>Fuel Type2: NULL</p> <p>Fuel Type3: NULL</p> <p>Piping Steel:</p> <p>Piping Galvanized:</p> <p>Tanks Single Wall St:</p> <p>Piping Underground:</p> <p>Num Underground:</p> <p>Panam Related:</p> <p>Panam Venue:</p>					
<u>Fuel Storage Tank Details</u>					
Owner Account Name: PIONEER ENERGY MANAGEMENT INC					
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name: PIONEER ENERGY MANAGEMENT INC					
Item: FS LIQUID FUEL TANK					

49	28 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
<p>Instance No: 11043394</p> <p>Status:</p> <p>Cont Name:</p> <p>Instance Type:</p> <p>Item: FS LIQUID FUEL TANK</p> <p>Item Description: FS Liquid Fuel Tank</p> <p>Tank Type: Liquid Fuel Single Wall UST</p> <p>Install Date: 10/2/1989</p> <p>Install Year: 1989</p> <p>Years in Service:</p> <p>Model: NULL</p> <p>Description:</p> <p>Capacity: 27000</p> <p>Tank Material: Fiberglass (FRP)</p> <p>Corrosion Protect:</p> <p>Overfill Protect:</p> <p>Facility Type: FS Liquid Fuel Tank</p> <p>Parent Facility Type:</p> <p>Facility Location:</p> <p>Device Installed Location: 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA</p> <p>Manufacturer:</p> <p>Serial No:</p> <p>Ulc Standard:</p> <p>Quantity:</p> <p>Unit of Measure:</p> <p>Fuel Type: Gasoline</p> <p>Fuel Type2: NULL</p> <p>Fuel Type3: NULL</p> <p>Piping Steel:</p> <p>Piping Galvanized:</p> <p>Tanks Single Wall St:</p> <p>Piping Underground:</p> <p>Num Underground:</p> <p>Panam Related:</p> <p>Panam Venue:</p>					

Fuel Storage Tank Details

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Owner Account Name: PIONEER ENERGY MANAGEMENT INC

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER ENERGY MANAGEMENT INC
Item: FS LIQUID FUEL TANK

49	29 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
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Instance No:	11043409	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:		Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Diesel
Tank Type:	Liquid Fuel Single Wall UST	Fuel Type2:	NULL
Install Date:	10/2/1989	Fuel Type3:	NULL
Install Year:	1989	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	
Capacity:	27000	Num Underground:	
Tank Material:	Fiberglass (FRP)	Panam Related:	
Corrosion Protect:		Panam Venue:	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:			
Facility Location:			
Device Installed Location:	8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA		

Fuel Storage Tank Details

Owner Account Name: PIONEER ENERGY MANAGEMENT INC

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER ENERGY MANAGEMENT INC
Item: FS LIQUID FUEL TANK

49	30 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
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Instance No:	11505435	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:		Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Other
Tank Type:	Liquid Fuel Single Wall UST	Fuel Type2:	NULL
Install Date:	10/2/1989	Fuel Type3:	NULL
Install Year:	NULL	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Capacity:	0			Num Underground:	
Tank Material:	Steel			Panam Related:	
Corrosion Protect:				Panam Venue:	
Overfill Protect:					
Facility Type:		FS Liquid Fuel Tank			
Parent Facility Type:					
Facility Location:					
Device Installed Location:		8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA			
<u>Fuel Storage Tank Details</u>					
Owner Account Name:		PIONEER ENERGY MANAGEMENT INC			
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name:		PIONEER ENERGY MANAGEMENT INC			
Item:		FS LIQUID FUEL TANK			
49	31 of 32	W/96.4	450.6 / -14.25	PIONEER ENERGY MANAGEMENT INC 8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA ON	FST
Instance No:	11043382			Manufacturer:	
Status:				Serial No:	
Cont Name:				Ulc Standard:	
Instance Type:				Quantity:	
Item:	FS LIQUID FUEL TANK			Unit of Measure:	
Item Description:	FS Liquid Fuel Tank			Fuel Type:	Gasoline
Tank Type:	Liquid Fuel Single Wall UST			Fuel Type2:	NULL
Install Date:	10/2/1989			Fuel Type3:	NULL
Install Year:	1989			Piping Steel:	
Years in Service:				Piping Galvanized:	
Model:	NULL			Tanks Single Wall St:	
Description:				Piping Underground:	
Capacity:	35000			Num Underground:	
Tank Material:	Fiberglass (FRP)			Panam Related:	
Corrosion Protect:				Panam Venue:	
Overfill Protect:					
Facility Type:		FS Liquid Fuel Tank			
Parent Facility Type:					
Facility Location:					
Device Installed Location:		8006 WELLINGTON RD 109 ARTHUR N0G 1A0 ON CA			
<u>Fuel Storage Tank Details</u>					
Owner Account Name:		PIONEER ENERGY MANAGEMENT INC			
<u>Liquid Fuel Tank Details</u>					
Overfill Protection:					
Owner Account Name:		PIONEER ENERGY MANAGEMENT INC			
Item:		FS LIQUID FUEL TANK			
49	32 of 32	W/96.4	450.6 / -14.25	Parkland Corporation 8006 Wellington County Road 109 Arthur ON N0G 1A0	GEN
Generator No:	ON3717862			PO Box No:	
Status:	Registered			Country:	Canada

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	As of Apr 2021			Choice of Contact: Co Admin: Phone No Admin:	
Detail(s)					
Waste Class: Waste Class Desc:	221 L Light fuels				

50	1 of 1	WSW/94.1	453.2 / -11.64	7643 HWY 6 ARTHUR ON	WWIS
Well ID:	7210892			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Monitoring and Test Hole			Date Received:	11/12/2013
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Monitoring and Test Hole			Abandonment Rec:	
Water Type:				Contractor:	7241
Casing Material:				Form Version:	7
Audit No:	Z179159			Owner:	
Tag:	A152547			Street Name:	7643 HWY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					

Additional Detail(s) (Map)

Well Completed Date:	2013/10/09
Year Completed:	2013
Depth (m):	4.572
Latitude:	43.8278849886581
Longitude:	-80.530069775535
Path:	

Bore Hole Information

Bore Hole ID:	1004626937	Elevation:	457.772064
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537785.00
Code OB Desc:		North83:	4852864.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	09-Oct-2013 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	digit
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Supplier Comment:					
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1004883081			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		77			
Mat3 Desc:		LOOSE			
Formation Top Depth:		2.0			
Formation End Depth:		13.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1004883082			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		73			
Mat3 Desc:		HARD			
Formation Top Depth:		13.0			
Formation End Depth:		15.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1004883080			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		01			
Most Common Material:		FILL			
Mat2:		77			
Mat2 Desc:		LOOSE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883090			
Layer:		1			
Plug From:		0			
Plug To:		0.5			
Plug Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883091			
Layer:		2			
Plug From:		0.5			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883092			
Layer:		3			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1004883089			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1004883079			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1004883085			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		5			
Casing Diameter:		1.5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1004883086			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.75600004196167			
<u>Water Details</u>					
Water ID:		1004883084			
Layer:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
Hole Diameter					
Hole ID:		1004883083			
Diameter:		3.25			
Depth From:		0.0			
Depth To:		15.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

51	1 of 1	WSW/101.0	456.0 / -8.88	ON	WWIS
Well ID:	7276127			Data Entry Status:	Yes
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	11/29/2016
Sec. Water Use:				Selected Flag:	True
Final Well Status:				Abandonment Rec:	
Water Type:				Contractor:	7215
Casing Material:				Form Version:	8
Audit No:	C33098			Owner:	
Tag:	A206774			Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date:	2016/06/23
Year Completed:	2016
Depth (m):	
Latitude:	43.8277409329974
Longitude:	-80.5300709057334
Path:	

Bore Hole Information

Bore Hole ID:	1006299011	Elevation:	458.520111
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537785.00
Code OB Desc:		North83:	4852848.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	23-Jun-2016 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<i>Improvement Location Source:</i>					
<i>Improvement Location Method:</i>					
<i>Source Revision Comment:</i>					
<i>Supplier Comment:</i>					

52	1 of 1	WSW/387.0	469.2 / 4.34	lot 22 con B ON	WWIS
Well ID:	6701957			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	9/26/1952
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1723
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	PEEL TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	022
Well Depth:				Concession:	B
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6701957.pdf

Additional Detail(s) (Map)

Well Completed Date: 1952/08/13
Year Completed: 1952
Depth (m): 150.876
Latitude: 43.8247268447205
Longitude: -80.5284131654204
Path: 670\6701957.pdf

Bore Hole Information

Bore Hole ID:	10466102	Elevation:	469.589874
DP2BR:	269.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537920.20
Code OB Desc:	Bedrock	North83:	4852514.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	13-Aug-1952 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932611291

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		30.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932611292			
Layer:		2			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932611293			
Layer:		3			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:		12			
Mat3 Desc:		STONES			
Formation Top Depth:		90.0			
Formation End Depth:		269.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932611294			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		269.0			
Formation End Depth:		333.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Overburden and Bedrock
Materials Interval**

Formation ID: 932611295
Layer: 5
Color: 1
General Color: WHITE
Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 333.0
Formation End Depth: 495.0
Formation End Depth UOM: ft

**Method of Construction & Well
Use**

Method Construction ID: 966701957
Method Construction Code: 1
Method Construction: Cable Tool
Other Method Construction:

Pipe Information

Pipe ID: 11014672
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930757943
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 495
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930757942
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 275
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996701957
Pump Set At:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Static Level:		78.0			
Final Level After Pumping:		200.0			
Recommended Pump Depth:					
Pumping Rate:		5.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:		No			
<u>Water Details</u>					
Water ID:		933954250			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		491.0			
Water Found Depth UOM:		ft			

53	1 of 1	WSW/118.4	456.0 / -8.88	7643 HWY 6 ARTHUR ON	WWIS
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Well ID:	7161023	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring and Test Hole	Date Received:	3/29/2011
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Other Status	Abandonment Rec:	
Water Type:		Contractor:	7241
Casing Material:		Form Version:	7
Audit No:	Z124019	Owner:	
Tag:	A096284	Street Name:	7643 HWY 6
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7161023.pdf

Additional Detail(s) (Map)

Well Completed Date:	2011/03/09
Year Completed:	2011
Depth (m):	6
Latitude:	43.8276787266799
Longitude:	-80.530270384128
Path:	716\7161023.pdf

Bore Hole Information

Bore Hole ID:	1003491950	Elevation:	459.051544
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537769.00
Code OB Desc:				North83:	4852841.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	3
Date Completed:	09-Mar-2011 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 1003860052
Layer: 1
Color: 8
General Color: BLACK
Mat1:
Most Common Material:
Mat2:
Mat2 Desc:
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.0
Formation End Depth: 0.10000000149011612
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1003860053
Layer: 2
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2:
Mat2 Desc:
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.10000000149011612
Formation End Depth: 5.0
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1003860054
Layer: 3
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 08
Mat2 Desc: FINE SAND
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 5.0

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Formation End Depth:</i>		6.0			
<i>Formation End Depth UOM:</i>		m			
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1003860063			
<i>Layer:</i>		2			
<i>Plug From:</i>		0.310000002384186			
<i>Plug To:</i>		2.70000004768372			
<i>Plug Depth UOM:</i>		m			
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1003860064			
<i>Layer:</i>		3			
<i>Plug From:</i>		2.70000004768372			
<i>Plug To:</i>		6			
<i>Plug Depth UOM:</i>		m			
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1003860062			
<i>Layer:</i>		1			
<i>Plug From:</i>		0			
<i>Plug To:</i>		0.310000002384186			
<i>Plug Depth UOM:</i>		m			
<u>Method of Construction & Well Use</u>					
<i>Method Construction ID:</i>		1003860061			
<i>Method Construction Code:</i>		D			
<i>Method Construction:</i>		Direct Push			
<i>Other Method Construction:</i>					
<u>Pipe Information</u>					
<i>Pipe ID:</i>		1003860051			
<i>Casing No:</i>		0			
<i>Comment:</i>					
<i>Alt Name:</i>					
<u>Construction Record - Casing</u>					
<i>Casing ID:</i>		1003860057			
<i>Layer:</i>		1			
<i>Material:</i>		5			
<i>Open Hole or Material:</i>		PLASTIC			
<i>Depth From:</i>		0			
<i>Depth To:</i>		3			
<i>Casing Diameter:</i>		4.01999998092651			
<i>Casing Diameter UOM:</i>		cm			
<i>Casing Depth UOM:</i>		m			
<u>Construction Record - Screen</u>					
<i>Screen ID:</i>		1003860058			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:			1		
Slot:			10		
Screen Top Depth:			3		
Screen End Depth:			6		
Screen Material:			5		
Screen Depth UOM:			m		
Screen Diameter UOM:			cm		
Screen Diameter:			4.82000017166138		
<u>Water Details</u>					
Water ID:			1003860056		
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:			m		
<u>Hole Diameter</u>					
Hole ID:			1003860055		
Diameter:			10.899999618530273		
Depth From:			0.0		
Depth To:			6.0		
Hole Depth UOM:			m		
Hole Diameter UOM:			cm		

54	1 of 1	ENE/253.9	465.8 / 0.93	lot 6 con 1 ON	WWIS
Well ID:	6703003			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Livestock			Date Received:	5/1/1962
Sec. Water Use:	Domestic			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	3104
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	006
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703003.pdf

Additional Detail(s) (Map)

Well Completed Date: 1962/02/09
Year Completed: 1962
Depth (m): 99.06
Latitude: 43.837187716431
Longitude: -80.4966705499495
Path: 670\6703003.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	10467146			Elevation:	468.002349
DP2BR:	180.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	540464.20
Code OB Desc:	Bedrock			North83:	4853913.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	09-Feb-1962 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616159				
Layer:	1				
Color:					
General Color:					
Mat1:	23				
Most Common Material:	PREVIOUSLY DUG				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	45.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616161				
Layer:	3				
Color:	6				
General Color:	BROWN				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	09				
Mat2 Desc:	MEDIUM SAND				
Mat3:	11				
Mat3 Desc:	GRAVEL				
Formation Top Depth:	60.0				
Formation End Depth:	180.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932616163				
Layer:	5				
Color:	6				
General Color:	BROWN				
Mat1:	15				
Most Common Material:	LIMESTONE				
Mat2:					
Mat2 Desc:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:		210.0			
Formation End Depth:		325.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932616160			
Layer:		2			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		45.0			
Formation End Depth:		60.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932616162			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		17			
Most Common Material:		SHALE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		180.0			
Formation End Depth:		210.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966703003			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11015716			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930759837			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		220			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930759838			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		325			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996703003			
Pump Set At:					
Static Level:		28.0			
Final Level After Pumping:		76.0			
Recommended Pump Depth:		80.0			
Pumping Rate:		12.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		4			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933955380			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		300.0			
Water Found Depth UOM:		ft			

[55](#) 1 of 1 **W/125.5** **450.7 / -14.12** **ON** **WWIS**

Well ID:	7228721	Data Entry Status:	Yes
Construction Date:		Data Src:	
Primary Water Use:		Date Received:	10/1/2014
Sec. Water Use:		Selected Flag:	True
Final Well Status:		Abandonment Rec:	
Water Type:		Contractor:	7383
Casing Material:		Form Version:	8
Audit No:	C18533	Owner:	
Tag:	A151231	Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST LUTHER TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy: PDF URL (Map):				Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: Year Completed: Depth (m): Latitude: Longitude: Path:		2014/06/17 2014 43.8283190468409 -80.5305265401636			
<u>Bore Hole Information</u>					
Bore Hole ID: DP2BR: Spatial Status: Code OB: Code OB Desc: Open Hole: Cluster Kind: Date Completed: Remarks: Elevrc Desc: Location Source Date: Improvement Location Source: Improvement Location Method: Source Revision Comment: Supplier Comment:		1005145165 17-Jun-2014 00:00:00		Elevation: Elevrc: Zone: East83: North83: Org CS: UTMRC: UTMRC Desc: Location Method:	
				454.612457 17 537748.00 4852912.00 UTM83 4 margin of error : 30 m - 100 m wwr	
56	1 of 1	WSW/119.7	455.9 / -8.97	7643 HWY 6 ARTHUR ON	WWIS
Well ID: Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Water Type: Casing Material: Audit No: Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy: PDF URL (Map):		7161022 Monitoring and Test Hole 0 Test Hole Z124018 A096285		Data Entry Status: Data Src: Date Received: Selected Flag: Abandonment Rec: Contractor: Form Version: Owner: Street Name: County: Municipality: Site Info: Lot: Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
				3/29/2011 True 7241 7 7643 HWY 6 WELLINGTON WEST GARAFRAXA TOWNSHIP	
		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7161022.pdf			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Additional Detail(s) (Map)

Well Completed Date: 2011/03/09
Year Completed: 2011
Depth (m): 5.1
Latitude: 43.8276878323893
Longitude: -80.5302951865172
Path: 716\7161022.pdf

Bore Hole Information

Bore Hole ID:	1003491948	Elevation:	459.030029
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537767.00
Code OB Desc:		North83:	4852842.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	09-Mar-2011 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1003860033
Layer: 2
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2:
Mat2 Desc:
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.10000000149011612
Formation End Depth: 4.0
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1003860032
Layer: 1
Color: 8
General Color: BLACK
Mat1:
Most Common Material:
Mat2:
Mat2 Desc:
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.0
Formation End Depth: 0.10000000149011612
Formation End Depth UOM: m

Overburden and Bedrock

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		1003860034			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		08			
Mat2 Desc:		FINE SAND			
Mat3:		85			
Mat3 Desc:		SOFT			
Formation Top Depth:		4.0			
Formation End Depth:		5.099999904632568			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003860044			
Layer:		3			
Plug From:		1.79999995231628			
Plug To:		5.09999990463257			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003860042			
Layer:		1			
Plug From:		0			
Plug To:		0.310000002384186			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003860043			
Layer:		2			
Plug From:		0.310000002384186			
Plug To:		1.79999995231628			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003860041			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1003860031			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003860037			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer: 1					
Material: 5					
Open Hole or Material: PLASTIC					
Depth From: 0					
Depth To: 2.09999990463257					
Casing Diameter: 4.01999998092651					
Casing Diameter UOM: cm					
Casing Depth UOM: m					
<u>Construction Record - Screen</u>					
Screen ID: 1003860038					
Layer: 1					
Slot: 10					
Screen Top Depth: 2.09999990463257					
Screen End Depth: 5.09999990463257					
Screen Material: 5					
Screen Depth UOM: m					
Screen Diameter UOM: cm					
Screen Diameter: 4.82000017166138					
<u>Water Details</u>					
Water ID: 1003860036					
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM: m					
<u>Hole Diameter</u>					
Hole ID: 1003860035					
Diameter: 10.899999618530273					
Depth From: 0.0					
Depth To: 5.099999904632568					
Hole Depth UOM: m					
Hole Diameter UOM: cm					

57	1 of 1	WSW/121.0	453.9 / -10.91	7643 HWY 6 ARTHUR ON	WWIS
Well ID: 7210891		Data Entry Status:			
Construction Date:		Data Src:			
Primary Water Use: Monitoring and Test Hole		Date Received: 11/12/2013			
Sec. Water Use:		Selected Flag: True			
Final Well Status: Monitoring and Test Hole		Abandonment Rec:			
Water Type:		Contractor: 7241			
Casing Material:		Form Version: 7			
Audit No: Z179156		Owner:			
Tag: A152548		Street Name: 7643 HWY 6			
Construction Method:		County: WELLINGTON			
Elevation (m):		Municipality: WEST GARAFRAXA TOWNSHIP			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot:			
Well Depth:		Concession:			
Overburden/Bedrock:		Concession Name:			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2013/10/09
Year Completed: 2013
Depth (m): 4.572
Latitude: 43.8277962319036
Longitude: -80.5303813949203
Path:

Bore Hole Information

Bore Hole ID:	1004626934	Elevation:	458.405792
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537760.00
Code OB Desc:		North83:	4852854.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	09-Oct-2013 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1004883064
Layer: 2
Color: 2
General Color: GREY
Mat1: 28
Most Common Material: SAND
Mat2: 06
Mat2 Desc: SILT
Mat3: 11
Mat3 Desc: GRAVEL
Formation Top Depth: 4.0
Formation End Depth: 12.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 1004883063
Layer: 1
Color: 6
General Color: BROWN
Mat1: 01
Most Common Material: FILL
Mat2: 77
Mat2 Desc: LOOSE
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 4.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1004883065			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		06			
Mat3 Desc:		SILT			
Formation Top Depth:		12.0			
Formation End Depth:		15.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883074			
Layer:		2			
Plug From:		0.5			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883073			
Layer:		1			
Plug From:		0			
Plug To:		0.5			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883075			
Layer:		3			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1004883072			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1004883062			
Casing No:		0			
Comment:					
Alt Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Construction Record - Casing</u>					
Casing ID:	1004883068				
Layer:	1				
Material:	5				
Open Hole or Material:	PLASTIC				
Depth From:	0				
Depth To:	5				
Casing Diameter:	1.5				
Casing Diameter UOM:	inch				
Casing Depth UOM:	ft				
<u>Construction Record - Screen</u>					
Screen ID:	1004883069				
Layer:	1				
Slot:	10				
Screen Top Depth:	5				
Screen End Depth:	15				
Screen Material:	5				
Screen Depth UOM:	ft				
Screen Diameter UOM:	inch				
Screen Diameter:	1.75				
<u>Water Details</u>					
Water ID:	1004883067				
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:	ft				
<u>Hole Diameter</u>					
Hole ID:	1004883066				
Diameter:	3.25				
Depth From:	0.0				
Depth To:	15.0				
Hole Depth UOM:	ft				
Hole Diameter UOM:	inch				

58	1 of 1	WSW/134.0	457.5 / -7.31	7641 HIGHWAY 6 lot 37 con 1 ARTHUR ON	WWIS
Well ID:	7183961			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	7/12/2012
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Other			Abandonment Rec:	Yes
Water Type:				Contractor:	7466
Casing Material:				Form Version:	7
Audit No:	Z119352			Owner:	
Tag:				Street Name:	7641 HIGHWAY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	037
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7183961.pdf				
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	2012/06/21				
Year Completed:	2012				
Depth (m):					
Latitude:	43.8274175746587				
Longitude:	-80.5302599952751				
Path:	718\7183961.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	1003977172			Elevation:	460.422058
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537770.00
Code OB Desc:				North83:	4852812.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	21-Jun-2012 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004355652				
Layer:	1				
Plug From:	0				
Plug To:	4				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004355653				
Layer:	2				
Plug From:	4				
Plug To:	6				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004355654				
Layer:	3				
Plug From:	6				
Plug To:	133				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Sealing Record</u>					
Plug ID:		1004355656			
Layer:		5			
Plug From:		138			
Plug To:		198			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1004355655			
Layer:		4			
Plug From:		133			
Plug To:		138			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1004355651			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1004355645			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1004355649			
Layer:					
Material:					
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:					
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1004355650			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:					
<u>Water Details</u>					
Water ID:		1004355648			
Layer:					
Kind Code:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1004355647			
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

59	1 of 1	WSW/132.4	455.9 / -8.97	7643 HWY 6 ARTHUR ON	WWIS
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Well ID:	7161021	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring and Test Hole	Date Received:	3/29/2011
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Test Hole	Abandonment Rec:	
Water Type:		Contractor:	7241
Casing Material:		Form Version:	7
Audit No:	Z124017	Owner:	
Tag:	A096345	Street Name:	7643 HWY 6
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7161021.pdf

Additional Detail(s) (Map)

Well Completed Date:	2011/03/09
Year Completed:	2011
Depth (m):	4.8
Latitude:	43.8275982575627
Longitude:	-80.5304078208651
Path:	716\7161021.pdf

Bore Hole Information

Bore Hole ID:	1003491946	Elevation:	459.642517
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537758.00
Code OB Desc:		North83:	4852832.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	09-Mar-2011 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Improvement Location Method:
 Source Revision Comment:
 Supplier Comment:

Overburden and Bedrock
Materials Interval

Formation ID: 1003860020
 Layer: 3
 Color: 6
 General Color: BROWN
 Mat1: 08
 Most Common Material: FINE SAND
 Mat2:
 Mat2 Desc:
 Mat3: 85
 Mat3 Desc: SOFT
 Formation Top Depth: 4.0
 Formation End Depth: 4.800000190734863
 Formation End Depth UOM: m

Overburden and Bedrock
Materials Interval

Formation ID: 1003860018
 Layer: 1
 Color: 8
 General Color: BLACK
 Mat1:
 Most Common Material:
 Mat2:
 Mat2 Desc:
 Mat3: 85
 Mat3 Desc: SOFT
 Formation Top Depth: 0.0
 Formation End Depth: 0.10000000149011612
 Formation End Depth UOM: m

Overburden and Bedrock
Materials Interval

Formation ID: 1003860019
 Layer: 2
 Color: 6
 General Color: BROWN
 Mat1: 28
 Most Common Material: SAND
 Mat2:
 Mat2 Desc:
 Mat3: 85
 Mat3 Desc: SOFT
 Formation Top Depth: 0.10000000149011612
 Formation End Depth: 4.0
 Formation End Depth UOM: m

Annular Space/Abandonment
Sealing Record

Plug ID: 1003860030
 Layer: 3
 Plug From: 1.5
 Plug To: 4.80000019073486

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003860028			
Layer:		1			
Plug From:		0			
Plug To:		0.310000002384186			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003860029			
Layer:		2			
Plug From:		0.310000002384186			
Plug To:		1.5			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003860027			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1003860017			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003860023			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		1.79999995231628			
Casing Diameter:		4.01999998092651			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1003860024			
Layer:		1			
Slot:		10			
Screen Top Depth:		1.79999995231628			
Screen End Depth:		4.80000019073486			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		4.82000017166138			
<u>Water Details</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water ID: 1003860022 Layer: Kind Code: Kind: Water Found Depth: Water Found Depth UOM: m					
Hole Diameter					
Hole ID: 1003860021 Diameter: 10.899999618530273 Depth From: 0.0 Depth To: 4.800000190734863 Hole Depth UOM: m Hole Diameter UOM: cm					
60	1 of 8	WSW/133.5	455.9 / -8.97	ESSO 7643 6 HWY ARTHUR ON N0G1A0	RST
Headcode: 1186800 Headcode Desc: Service Stations-Gasoline, Oil & Natural Gas Phone: 5198482111 List Name: Description: Gasoline Service Stations					
60	2 of 8	WSW/133.5	455.9 / -8.97	ESSO ARTHUR 7643 6 HWY ARTHUR ON N0G 1A0	RST
Headcode: 01186800 Headcode Desc: SERVICE STATIONS-GASOLINE, OIL & NATURAL GAS Phone: List Name: Description:					
60	3 of 8	WSW/133.5	455.9 / -8.97	7643 HIGHWAY 6 Arthur ON	EHS
Order No: 20110420050 Status: C Report Type: Site Report Report Date: 4/21/2011 Date Received: 4/20/2011 7:18:17 PM Previous Site Name: Lot/Building Size: Additional Info Ordered:					
Nearest Intersection: Municipality: Wellington North Client Prov/State: ON Search Radius (km): 0.25 X: -80.530228 Y: 43.82742					
60	4 of 8	WSW/133.5	455.9 / -8.97	7643 Highway 6 Arthur ON	EHS
Order No: 20120802008 Status: C Report Type: Custom Report Report Date: 13-AUG-12 Date Received: 02-AUG-12 Previous Site Name: Lot/Building Size:					
Nearest Intersection: Municipality: Arthur, Wellington County Client Prov/State: ON Search Radius (km): .4 X: .000002 Y: 46.26757					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<i>Additional Info Ordered:</i>					
60	5 of 8	WSW/133.5	455.9 / -8.97	ESSO ARTHUR 7643 6 HWY ARTHUR ON N0G1A0	RST
Headcode:		01186800			
Headcode Desc:		SERVICE STATIONS GASOLINE OIL & NATURAL			
Phone:		5198486850			
List Name:					
Description:					
60	6 of 8	WSW/133.5	455.9 / -8.97	Parkland Industries Ltd. 7643 Highway 6 Arthur ON N0G1A0	GEN
Generator No:		ON6944816		PO Box No:	
Status:				Country: Canada	
Approval Years:		2016		Choice of Contact: CO_ADMIN	
Contam. Facility:		No		Co Admin: Valerie Sutter	
MHSW Facility:		No		Phone No Admin: 905-415-7248 Ext.	
SIC Code:		447110			
SIC Description:		447110			
<u>Detail(s)</u>					
Waste Class:		221			
Waste Class Desc:		LIGHT FUELS			
60	7 of 8	WSW/133.5	455.9 / -8.97	Parkland Industries Limited 7643 Highway 6 Arthur ON N0G1A0	GEN
Generator No:		ON3419116		PO Box No:	
Status:				Country: Canada	
Approval Years:		2014		Choice of Contact: CO_ADMIN	
Contam. Facility:		No		Co Admin: Lisa Tomlinson	
MHSW Facility:		No		Phone No Admin: 905-415-7248 Ext.	
SIC Code:		447110			
SIC Description:		447110			
<u>Detail(s)</u>					
Waste Class:		221			
Waste Class Desc:		LIGHT FUELS			
60	8 of 8	WSW/133.5	455.9 / -8.97	Parkland Industries Ltd. 7643 Highway 6 Arthur ON N0G1A0	GEN
Generator No:		ON6944816		PO Box No:	
Status:		Registered		Country: Canada	
Approval Years:		As of Dec 2017		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:		221 L Light fuels			
61	1 of 9	WSW/180.1	461.9 / -2.97	INTER COUNTY MILK TRANSPORT LTD LOT 23 CON B WELLINGTON ARTHUR TWP ON	PRT
Location ID: Type: Expiry Date: Capacity (L): Licence #:		1049 private 50000.00 0001012301			
61	2 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT LTD. LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:		ON0849900 86,87,88,89,90 4563 BULK LIQ. TRUCKING		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:		252 WASTE OILS & LUBRICANTS			
61	3 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT LTD LOT 23, CONC B PEEL TWP ON N0G 1A0	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:		ON0849900 92,93,97,98 4563 BULK LIQ. TRUCKING		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:		252 WASTE OILS & LUBRICANTS			
61	4 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT LTD. 21-260 LOT 23, CONC. B, PEEL TWP. C/O R.R. #1 ARTHUR ON N0G 1A0	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:		ON0849900 94,95,96 4563 BULK LIQ. TRUCKING		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Detail(s)</u>					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
61	5 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT LIMITED LOT 23, CONCESSION B PEEL TOWNSHIP ON	GEN
Generator No:		ON0849900		PO Box No:	
Status:				Country:	
Approval Years:		99,00,01		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:		4563			
SIC Description:		BULK LIQ. TRUCKING			
<u>Detail(s)</u>					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
61	6 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT INC. LOT 23, CONCESSION B R.R.#1 ARTHUR ON N0G 1A0	GEN
Generator No:		ON0849900		PO Box No:	
Status:				Country:	
Approval Years:		02,03,04,05,06,07,08		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<u>Detail(s)</u>					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
61	7 of 9	WSW/180.1	461.9 / -2.97	INTER COUNTY MILK TRANSPORT LTD LOT 23 CON B WELLINGTON ARTHUR TWP ON	FSTH
License Issue Date:		10/22/1990			
Tank Status:		Licensed			
Tank Status As Of:		August 2007			
Operation Type:		Private Fuel Outlet			
Facility Type:		Gasoline Station - Self Serve			
<u>--Details--</u>					
Status:		Active			
Year of Installation:		1989			
Corrosion Protection:					
Capacity:		50000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Diesel			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
61	8 of 9	WSW/180.1	461.9 / -2.97	INTER COUNTY MILK TRANSPORT LTD LOT 23 CON B WELLINGTON ARTHUR TWP ON	FSTH
License Issue Date:		10/22/1990			
Tank Status:		Licensed			
Tank Status As Of:		December 2008			
Operation Type:		Private Fuel Outlet			
Facility Type:		Gasoline Station - Self Serve			
--Details--					
Status:		Active			
Year of Installation:		1989			
Corrosion Protection:					
Capacity:		50000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Diesel			
61	9 of 9	WSW/180.1	461.9 / -2.97	INTER-COUNTY MILK TRANSPORT INC. LOT 23, CONCESSION B R.R.#1 ARTHUR ON	GEN
Generator No:		ON0849900		PO Box No:	
Status:				Country:	
Approval Years:		2009		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:		484221			
SIC Description:		Bulk Liquids Trucking Local			
Detail(s)					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
62	1 of 4	WSW/143.7	458.1 / -6.76	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRA PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR ON	PRT
Location ID:		1043			
Type:		retail			
Expiry Date:		1994-02-28			
Capacity (L):		100000			
Licence #:		0076356948			
62	2 of 4	WSW/143.7	458.1 / -6.76	GULLWING PETROLEUMS INC HWY 6 & 9 CORNERS ARTHUR ON	PRT
Location ID:		21238			
Type:		retail			
Expiry Date:		1995-07-31			
Capacity (L):		100000			
Licence #:		0076395060			
62	3 of 4	WSW/143.7	458.1 / -6.76	CANGO PETROLEUMS HWY 6 ARTHUR ON N0G 1A0	RST

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Headcode: 1186800
Headcode Desc: Service Stations-Gasoline, Oil & Natural Gas
Phone: 5198486881
List Name:
Description:

62	4 of 4	WSW/143.7	458.1 / -6.76	CANGO INC** HWY 6 & 9 CORNERS ARTHUR ON	FSTH
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License Issue Date: 1/17/2005
Tank Status: Licensed
Tank Status As Of: August 2007
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Self Serve

--Details--

Status: Active
Year of Installation: 1990
Corrosion Protection:
Capacity: 25000
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1990
Corrosion Protection:
Capacity: 25000
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1990
Corrosion Protection:
Capacity: 25000
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1990
Corrosion Protection:
Capacity: 25000
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

63	1 of 1	W/282.5	460.9 / -3.97	211 ELIZA ST. EAST ARTHUR ON	WWIS
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Well ID: 6715886
Construction Date:
Primary Water Use:
Sec. Water Use:
Final Well Status: Abandoned-Supply
Water Type:
Casing Material:
Audit No: Z71053
Tag: A043259
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:

Data Entry Status:
Data Src:
Date Received: 9/26/2006
Selected Flag: True
Abandonment Rec: Yes
Contractor: 6634
Form Version: 3
Owner:
Street Name: 211 ELIZA ST. EAST
County: WELLINGTON
Municipality: ARTHUR VILLAGE
Site Info:
Lot:
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6715886.pdf				
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	2006/08/30				
Year Completed:	2006				
Depth (m):					
Latitude:	43.8301585642054				
Longitude:	-80.5311961788408				
Path:	671\6715886.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	11695668			Elevation:	459.995788
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	—			East83:	537693.00
Code OB Desc:	No formation data			North83:	4853116.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	3
Date Completed:	30-Aug-2006 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	933307979				
Layer:	1				
Plug From:	13.5				
Plug To:	10				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	933307980				
Layer:	2				
Plug From:	10				
Plug To:	7				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	933307981				
Layer:	3				
Plug From:	7				
Plug To:	3				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Sealing Record

Plug ID: 933307982
Layer: 4
Plug From: 3
Plug To: 0
Plug Depth UOM: m

Method of Construction & Well Use

Method Construction ID: 966715886
Method Construction Code:
Method Construction:
Other Method Construction:

Pipe Information

Pipe ID: 11700534
Casing No: 1
Comment:
Alt Name:

[64](#) 1 of 1 **WSW/232.5** **465.3 / 0.50** **lot 23 con B ON** **WWIS**

Well ID: 6706945 Construction Date: Primary Water Use: Domestic Sec. Water Use: 0 Final Well Status: Water Supply Water Type: Casing Material: Audit No: Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:	Data Entry Status: Data Src: 1 Date Received: 3/20/1979 Selected Flag: True Abandonment Rec: Contractor: 2332 Form Version: 1 Owner: Street Name: County: WELLINGTON Municipality: PEEL TOWNSHIP Site Info: Lot: 023 Concession: B Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:
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PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6706945.pdf

Additional Detail(s) (Map)

Well Completed Date: 1978/08/23
Year Completed: 1978
Depth (m): 109.728
Latitude: 43.8261638302401
Longitude: -80.5297201302385
Path: 670\6706945.pdf

Bore Hole Information

Bore Hole ID: 10471012 **Elevation:** 467.181579
DP2BR: **Elevrc:**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Spatial Status:				Zone:	17
Code OB:	x			East83:	537814.20
Code OB Desc:	Unknown type in the lower layers(s)			North83:	4852673.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	23-Aug-1978 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 932633251
Layer: 4
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2: 12
Mat2 Desc: STONES
Mat3:
Mat3 Desc:
Formation Top Depth: 150.0
Formation End Depth: 225.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932633252
Layer: 5
Color: 3
General Color: BLUE
Mat1: 00
Most Common Material: UNKNOWN TYPE
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 225.0
Formation End Depth: 231.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932633255
Layer: 8
Color: 2
General Color: GREY
Mat1: 12
Most Common Material: STONES
Mat2: 15
Mat2 Desc: LIMESTONE
Mat3:
Mat3 Desc:
Formation Top Depth: 315.0
Formation End Depth: 360.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932633250			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		105.0			
Formation End Depth:		150.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932633254			
Layer:		7			
Color:		1			
General Color:		WHITE			
Mat1:		12			
Most Common Material:		STONES			
Mat2:		74			
Mat2 Desc:		LAYERED			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		249.0			
Formation End Depth:		315.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932633249			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		18.0			
Formation End Depth:		105.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932633253			
Layer:		6			
Color:					
General Color:					
Mat1:		14			
Most Common Material:		HARDPAN			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		231.0			
Formation End Depth:		249.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932633248			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		25			
Most Common Material:		OVERBURDEN			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		12			
Mat3 Desc:		STONES			
Formation Top Depth:		0.0			
Formation End Depth:		18.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966706945			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11019582			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930766441			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		252			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930766442			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		360			
Casing Diameter:		4			
Casing Diameter UOM:		inch			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996706945			
Pump Set At:					
Static Level:		59.0			
Final Level After Pumping:		60.0			
Recommended Pump Depth:		75.0			
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:		6.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		4			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935132077			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		59.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934620976			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		59.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934873778			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		59.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934345346			
Test Type:		Recovery			
Test Duration:		15			
Test Level:		59.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933960006			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		320.0			
Water Found Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
65	1 of 1	W/141.8	450.8 / -14.03	ON	WWIS
Well ID:	6712922			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Commerical			Date Received:	4/1/1999
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	3406
Casing Material:				Form Version:	1
Audit No:	201732			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6712922.pdf				
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1998/12/11				
Year Completed:	1998				
Depth (m):	46.6344				
Latitude:	43.828247882222				
Longitude:	-80.5307372835158				
Path:	671\6712922.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10476755			Elevation:	454.565338
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	537731.10
Code OB Desc:	Overburden			North83:	4852904.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	11-Dec-1998 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932659649				
Layer:	2				
Color:	6				
General Color:	BROWN				
Mat1:	05				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:					
Mat2:		CLAY			
Mat2 Desc:		12			
Mat3:		STONES			
Mat3 Desc:		34			
Formation Top Depth:		TILL			
Formation End Depth:		11.0			
Formation End Depth UOM:		56.0			
		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659651			
Layer:		4			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		61.0			
Formation End Depth:		121.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659653			
Layer:		6			
Color:		6			
General Color:		BROWN			
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		143.0			
Formation End Depth:		153.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659648			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		01			
Most Common Material:		FILL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		11.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932659652			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		121.0			
Formation End Depth:		143.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932659650			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:		06			
Mat3 Desc:		SILT			
Formation Top Depth:		56.0			
Formation End Depth:		61.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933211065			
Layer:		1			
Plug From:		0			
Plug To:		41			
Plug Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966712922			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11025325			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930776778			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth From:					
Depth To:		150			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
 <u>Results of Well Yield Testing</u>					
Pump Test ID:		996712922			
Pump Set At:					
Static Level:		27.0			
Final Level After Pumping:		43.0			
Recommended Pump Depth:		60.0			
Pumping Rate:		20.0			
Flowing Rate:					
Recommended Pump Rate:		20.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		24			
Pumping Duration MIN:		0			
Flowing:		No			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934354432			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		41.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935131772			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		41.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934618456			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		41.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934870720			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		41.0			
Test Level UOM:		ft			
 <u>Water Details</u>					
Water ID:		933967501			
Layer:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		56.0			
Water Found Depth UOM:		ft			
<u>Water Details</u>					
Water ID:		933967502			
Layer:		2			
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		143.0			
Water Found Depth UOM:		ft			

66	1 of 1	WSW/255.7	466.6 / 1.73	lot 23 con B ON	WWIS
Well ID:	6709740			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	5/16/1989
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1804
Casing Material:				Form Version:	1
Audit No:	14070			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	PEEL TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	023
Well Depth:				Concession:	B
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6709740.pdf

Additional Detail(s) (Map)

Well Completed Date: 1989/05/04
Year Completed: 1989
Depth (m): 65.8368
Latitude: 43.8259292279185
Longitude: -80.529597606743
Path: 670\6709740.pdf

Bore Hole Information

Bore Hole ID:	10473588	Elevation:	467.895874
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	537824.20
Code OB Desc:	Overburden	North83:	4852647.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	3
Date Completed:	04-May-1989 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	gps
Elevrc Desc:			
Location Source Date:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932644817			
Layer:		1			
Color:		8			
General Color:		BLACK			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932644819			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		205.0			
Formation End Depth:		216.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932644818			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		205.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966709740			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11022158			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930771032			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		216			
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996709740			
Pump Set At:					
Static Level:		52.0			
Final Level After Pumping:		102.0			
Recommended Pump Depth:		130.0			
Pumping Rate:		16.0			
Flowing Rate:					
Recommended Pump Rate:		8.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		2			
Pumping Duration MIN:		10			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934618305			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		64.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934870594			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		55.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934343766			
Test Type:		Recovery			
Test Duration:		15			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Level:		82.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935130512			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		52.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933963207			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		206.0			
Water Found Depth UOM:		ft			

67	1 of 1	WSW/144.7	455.9 / -8.97	7643 HWY 6 ARUTHUR ON	WWIS
Well ID:	7210895			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Monitoring and Test Hole			Date Received:	11/12/2013
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Monitoring and Test Hole			Abandonment Rec:	
Water Type:				Contractor:	7241
Casing Material:				Form Version:	7
Audit No:	Z179158			Owner:	
Tag:	A150688			Street Name:	7643 HWY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date:	2013/10/09
Year Completed:	2013
Depth (m):	4.572
Latitude:	43.827517686102
Longitude:	-80.5305203843069
Path:	

Bore Hole Information

Bore Hole ID:	1004626946	Elevation:	460.175415
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537749.00
Code OB Desc:		North83:	4852823.00

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	09-Oct-2013 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock
Materials Interval

Formation ID: 1004883127
Layer: 2
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 06
Mat2 Desc: SILT
Mat3: 66
Mat3 Desc: DENSE
Formation Top Depth: 2.0
Formation End Depth: 9.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1004883126
Layer: 1
Color: 6
General Color: BROWN
Mat1: 01
Most Common Material: FILL
Mat2: 77
Mat2 Desc: LOOSE
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 2.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1004883128
Layer: 3
Color: 6
General Color: BROWN
Mat1: 34
Most Common Material: TILL
Mat2: 66
Mat2 Desc: DENSE
Mat3:
Mat3 Desc:
Formation Top Depth: 9.0
Formation End Depth: 15.0
Formation End Depth UOM: ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883137			
Layer:		2			
Plug From:		0.5			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883138			
Layer:		3			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1004883136			
Layer:		1			
Plug From:		0			
Plug To:		0.5			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1004883135			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1004883125			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1004883131			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		5			
Casing Diameter:		1.5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1004883132			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.75			
<u>Water Details</u>					
Water ID:		1004883130			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1004883129			
Diameter:		3.25			
Depth From:		0.0			
Depth To:		15.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

68	1 of 1	WSW/144.7	455.9 / -8.97	7643 HWY 6 ARTHUR ON	WWIS
Well ID:		7210893		Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:		Monitoring and Test Hole		Date Received:	11/12/2013
Sec. Water Use:				Selected Flag:	True
Final Well Status:		Monitoring and Test Hole		Abandonment Rec:	
Water Type:				Contractor:	7241
Casing Material:				Form Version:	7
Audit No:		Z179155		Owner:	
Tag:		A152550		Street Name:	7643 HWY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	WEST GARAFRAXA TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date:	2013/10/09
Year Completed:	2013
Depth (m):	4.572
Latitude:	43.827598972849
Longitude:	-80.530581931585
Path:	

Bore Hole Information

Bore Hole ID:	1004626940	Elevation:	459.819122
DP2BR:		Elevrc:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Spatial Status:				Zone:	17
Code OB:				East83:	537744.00
Code OB Desc:				North83:	4852832.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	09-Oct-2013 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock
Materials Interval

Formation ID: 1004883097
Layer: 1
Color: 6
General Color: BROWN
Mat1: 01
Most Common Material: FILL
Mat2: 77
Mat2 Desc: LOOSE
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 3.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1004883098
Layer: 2
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 06
Mat2 Desc: SILT
Mat3: 77
Mat3 Desc: LOOSE
Formation Top Depth: 3.0
Formation End Depth: 12.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1004883099
Layer: 3
Color: 6
General Color: BROWN
Mat1: 34
Most Common Material: TILL
Mat2: 66
Mat2 Desc: DENSE
Mat3:
Mat3 Desc:
Formation Top Depth: 12.0
Formation End Depth: 15.0

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004883109				
Layer:	3				
Plug From:	4				
Plug To:	15				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004883108				
Layer:	2				
Plug From:	0.5				
Plug To:	4				
Plug Depth UOM:	ft				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004883107				
Layer:	1				
Plug From:	0				
Plug To:	0.5				
Plug Depth UOM:	ft				
<u>Method of Construction & Well Use</u>					
Method Construction ID:	1004883106				
Method Construction Code:	D				
Method Construction:	Direct Push				
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:	1004883096				
Casing No:	0				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	1004883102				
Layer:	1				
Material:	5				
Open Hole or Material:	PLASTIC				
Depth From:	0				
Depth To:	5				
Casing Diameter:	1.5				
Casing Diameter UOM:	inch				
Casing Depth UOM:	ft				
<u>Construction Record - Screen</u>					
Screen ID:	1004883103				
Layer:	1				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Slot:					
Screen Top Depth:		10			
Screen End Depth:		5			
Screen Material:		15			
Screen Depth UOM:		5			
Screen Diameter UOM:		ft			
Screen Diameter:		inch			
		1.75			
<u>Water Details</u>					
Water ID:		1004883101			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1004883100			
Diameter:		3.25			
Depth From:		0.0			
Depth To:		15.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

[69](#) 1 of 2 **WSW/227.9** **465.5 / 0.67** **Fleming Fast Freight Inc.**
7634 Highway 6 **CA**
Wellington North ON

Certificate #: A821048
Application Year: 2002
Issue Date: 6/5/2002
Approval Type: Waste Management Systems
Status: Revoked and/or Replaced
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

[69](#) 2 of 2 **WSW/227.9** **465.5 / 0.67** **Fleming Fast Freight Inc.**
7634 Hwy 6 **ECA**
Wellington North ON N1M 2A5

Approval No: A821048 **MOE District:**
Approval Date: 2002-06-05 **City:**
Status: Revoked and/or Replaced **Longitude:**
Record Type: ECA **Latitude:**
Link Source: IDS **Geometry X:**
SWP Area Name: **Geometry Y:**
Approval Type: ECA-WASTE MANAGEMENT SYSTEMS
Project Type: WASTE MANAGEMENT SYSTEMS
Business Name: Fleming Fast Freight Inc.
Address: 7634 Hwy 6
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/6040-57BN5B-14.pdf>

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
70	1 of 1	W/156.8	450.7 / -14.13	COUNTY RD 109 ARTHUR ON	WWIS
Well ID: 6715657 Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Abandoned-Other Water Type: Casing Material: Audit No: Z39480 Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:		Data Entry Status: Data Src: Date Received: 2/27/2006 Selected Flag: True Abandonment Rec: Yes Contractor: 6061 Form Version: 3 Owner: Street Name: COUNTY RD 109 County: WELLINGTON Municipality: ARTHUR VILLAGE Site Info: Lot: Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability:			
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6715657.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		2006/01/30			
Year Completed:		2006			
Depth (m):					
Latitude:		43.8282396496865			
Longitude:		-80.5309251469196			
Path:		671\6715657.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		11558178		Elevation: 454.405670	
DP2BR:				Elevrc:	
Spatial Status:				Zone: 17	
Code OB:				East83: 537716.00	
Code OB Desc:		No formation data		North83: 4852903.00	
Open Hole:				Org CS: UTM83	
Cluster Kind:				UTMRC: 3	
Date Completed:		30-Jan-2006 00:00:00		UTMRC Desc: margin of error : 10 - 30 m	
Remarks:				Location Method: wwr	
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933287387			
Layer:		1			
Plug From:		0			
Plug To:		3			
Plug Depth UOM:		m			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933287390			
Layer:		4			
Plug From:		146			
Plug To:		147			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933287388			
Layer:		2			
Plug From:		3			
Plug To:		6			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933287389			
Layer:		3			
Plug From:		6			
Plug To:		146			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933287391			
Layer:		5			
Plug From:		147			
Plug To:		153			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966715657			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11567785			
Casing No:		1			
Comment:					
Alt Name:					

<u>71</u>	1 of 1	WSW/200.6	464.3 / -0.53	7634 Highway 6 Arthur ON NOG 1A0	EHS
Order No:	20071210035			Nearest Intersection:	Highway 6 and Highway 9 (Catherine St. and George Street)
Status:	C			Municipality:	County of Wellington
Report Type:	CAN - Basic Report			Client Prov/State:	
Report Date:	12/19/2007			Search Radius (km):	0.25
Date Received:	12/10/2007			X:	-80.530226

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Previous Site Name:				Y:	43.826624
Lot/Building Size:					
Additional Info Ordered:		Fire Insur. Maps And /or Site Plans			

72	1 of 1	W/268.5	459.8 / -5.02	ON	WWIS
Well ID:	7149905			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Monitoring			Date Received:	8/16/2010
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Other			Abandonment Rec:	Yes
Water Type:				Contractor:	7221
Casing Material:				Form Version:	7
Audit No:	Z104704			Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7149905.pdf

Additional Detail(s) (Map)

Well Completed Date: 2010/05/20
Year Completed: 2010
Depth (m):
Latitude: 43.8297815912169
Longitude: -80.5314851882141
Path: 714\7149905.pdf

Bore Hole Information

Bore Hole ID:	1003290235	Elevation:	458.092285
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537670.00
Code OB Desc:		North83:	4853074.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	20-May-2010 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Annular Space/Abandonment Sealing Record

Plug ID: 1003341366

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:	2				
Plug From:	54.5				
Plug To:	0				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003341367				
Layer:	3				
Plug From:	52.5				
Plug To:	0				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1003341365				
Layer:	1				
Plug From:	59.5				
Plug To:	54.5				
Plug Depth UOM:	m				
<u>Method of Construction & Well Use</u>					
Method Construction ID:	1003341372				
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:	1003341362				
Casing No:	0				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	1003341369				
Layer:	1				
Material:	5				
Open Hole or Material:	PLASTIC				
Depth From:					
Depth To:					
Casing Diameter:					
Casing Diameter UOM:	cm				
Casing Depth UOM:	m				
<u>Construction Record - Screen</u>					
Screen ID:	1003341370				
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:	m				
Screen Diameter UOM:	cm				
Screen Diameter:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Water Details</u>					
Water ID:		1003341368			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1003341364			
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			
73	1 of 3	W/440.8	462.9 / -1.97	Dr Andrew Kim 231 Eliza Street Arthur ON N0G1A0	GEN
Generator No:	ON5170101			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Dec 2018			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
73	2 of 3	W/440.8	462.9 / -1.97	Arthur Dental 231 Eliza Street Arthur ON N0G1A0	GEN
Generator No:	ON5170101			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Jul 2020			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<u>Detail(s)</u>					
Waste Class:		264 L			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
73	3 of 3	W/440.8	462.9 / -1.97	Arthur Dental 231 Eliza Street Arthur ON N0G1A0	GEN
Generator No:	ON5170101			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Apr 2021			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
Detail(s)					
Waste Class:	264 L				
Waste Class Desc:	Photoprocessing wastes				
Waste Class:	312 P				
Waste Class Desc:	Pathological wastes				
Waste Class:	264 T				
Waste Class Desc:	Photoprocessing wastes				
74	1 of 8	WSW/170.2	457.0 / -7.88	ARTHUR VILLAGE GEORGE ST. (HWY #6) BRIDGE ARTHUR VILL. ON	CA
Certificate #:	3-1364-93-				
Application Year:	93				
Issue Date:	12/31/1993				
Approval Type:	Municipal sewage				
Status:	Approved				
Application Type:					
Client Name:					
Client Address:					
Client City:					
Client Postal Code:					
Project Description:					
Contaminants:					
Emission Control:					
74	2 of 8	WSW/170.2	457.0 / -7.88	TRANSPORT TRUCK HWY 9 & HWY 6 MOTOR VEHICLE (OPERATING FLUID) ARTHUR VILLAGE ON	SPL
Ref No:	120489			Discharger Report:	
Site No:				Material Group:	
Incident Dt:	11/7/1995			Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:	OTHER TRANSPORTATION ACCIDENT			Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:				Nearest Watercourse:	
Contaminant Name:				Site Address:	
Contaminant Limit 1:				Site District Office:	
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:				Site Region:	
Environment Impact:	POSSIBLE			Site Municipality:	75501
Nature of Impact:	Soil contamination			Site Lot:	
Receiving Medium:	LAND			Site Conc:	
Receiving Env:				Northing:	
MOE Response:				Eastng:	OPP, MTO, FIRE DEPT.
Dt MOE Arvl on Scn:				Site Geo Ref Accu:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
MOE Reported Dt: 11/7/1995 Dt Document Closed: Incident Reason: ERROR Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: TRANSPORT TRUCK: 454L DIESEL FUEL TO HWY DUE TO JACKKNIFE. MTO CLEANING Contaminant Qty:					
74	3 of 8	WSW/170.2	457.0 / -7.88	MAPLE LODGE FARMS INTERSECTION OF HWY 6 AND HWY 9 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	SPL
Ref No: 11231 Site No: Incident Dt: 11/4/1988 Year: Incident Cause: OTHER TRANSPORTATION ACCIDENT Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: LAND Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 11/4/1988 Dt Document Closed: Incident Reason: ERROR Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: MAPLE LODGE FARMS TRUCK 15KG CHICKEN OFFAL TO INTERSECTION. Contaminant Qty:					
74	4 of 8	WSW/170.2	457.0 / -7.88	MAPLE LODGE FARMS INTERSECTION OF HWY. #9 AND HWY #6 TRANSPORT TRUCK (CARGO) ARTHUR VILL. ON	SPL
Ref No: 26108 Site No: Incident Dt: 10/3/1989 Year: Incident Cause: OTHER TRANSPORTATION ACCIDENT Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Nature of Impact: Receiving Medium: LAND Receiving Env: MOE Response: Dt MOE Arvl on Scn:					
Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75501 Site Lot: Site Conc: Northing: Easting: PD Site Geo Ref Accu:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				MOE Reported Dt: 10/3/1989 Dt Document Closed: Incident Reason: UNKNOWN Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: MAPLE LODGE FARMS - 200 KG CHICKEN OFFAL TO ROAD (SEE 8912659). Contaminant Qty:	
74	5 of 8	WSW/170.2	457.0 / -7.88	CANGO PETROLEUMS LTD. CANGO GAS STATION AT THE CORNER OF HWY. 6 & HWY. 9 SERVICE STATION ARTHUR VILL. ON	SPL
				Ref No: 59131 Site No: Incident Dt: 10/26/1991 Year: Incident Cause: UNKNOWN Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: CONFIRMED Nature of Impact: Other Receiving Medium: LAND / WATER Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 10/26/1991 Dt Document Closed: Incident Reason: UNKNOWN Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: CANGO SERVICE STATION - 200 L OF GASOLINE TO GROUND AND SEWER. Contaminant Qty:	
74	6 of 8	WSW/170.2	457.0 / -7.88	UNKNOWN CORNER OF HWY. 6 & 9 ARTHUR VILL. ON	SPL
				Ref No: 65027 Site No: Incident Dt: 12/8/1991 Year: Incident Cause: UNKNOWN Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: CONFIRMED Nature of Impact: Other Receiving Medium: WATER / AIR Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 12/8/1991	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Dt Document Closed: Incident Reason: UNKNOWN Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: SMALL AMOUNT OF GASOLINE TO CATCH BASIN FROM UNKNOWN SOURCE. Contaminant Qty:				SAC Action Class: Source Type:	
74	7 of 8	WSW/170.2	457.0 / -7.88	The Corner of Highway 6 and 109 Wellington Rd., Arthur Wellington North ON	SPL
Ref No: 1708-769KLT Site No: Incident Dt: Year: Incident Cause: Pipe Or Hose Leak Incident Event: Contaminant Code: 35 Contaminant Name: NATURAL GAS (METHANE) Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Confirmed Nature of Impact: Air Pollution Receiving Medium: Air Receiving Env: MOE Response: Referral to others Dt MOE Arvl on Scn: MOE Reported Dt: 8/20/2007 Dt Document Closed: 10/20/2007 Incident Reason: Equipment Failure - Malfunction of system components Site Name: Gas Station<UNOFFICIAL> Site County/District: Site Geo Ref Meth: Incident Summary: TSSA- Gas line strike- Town of Arthur Contaminant Qty: unknown unknown	Discharger Report: Material Group: Gases/Particulate Health/Env Conseq: Client Type: Sector Type: Pipeline Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: Wellington North Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type:				
74	8 of 8	WSW/170.2	457.0 / -7.88	Pioneer Petroleum<UNOFFICIAL> Hwy 6 & Hwy 109 Wellington North ON	SPL
Ref No: 1304-7KAUWB Site No: Incident Dt: Year: Incident Cause: Incident Event: Contaminant Code: 12 Contaminant Name: GASOLINE Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Possible Nature of Impact: Human Health/Safety Receiving Medium: Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 10/10/2008 Dt Document Closed:	Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Guelph Site Postal Code: Site Region: Site Municipality: Mapleton Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: Land Spills				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Incident Reason:
Site Name: Pioneer Petroleum<UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: Pioneer Gas Stn-Teviotdale: 10L gas to grnd
Contaminant Qty: 10 L

Source Type:

INTERSECTION OF WELLINGTON COUNTY ROAD 109 & HIGHWAY 6 ARTHUR ON

HINC

75 1 of 1 **WSW/170.5** **457.0 / -7.88**

External File Num: FS INC 0708-04540
Fuel Occurrence Type: Vapour Release
Date of Occurrence: 8/21/2007
Fuel Type Involved: Natural Gas
Status Desc: Completed - Causal Analysis(End)
Job Type Desc: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved: Construction Site (pipeline strike)
Service Interruptions: Yes
Property Damage: No
Fuel Life Cycle Stage: Transmission, Distribution and Transportation
Root Cause: Root Cause: Equipment/Material/Component:No Procedures:Yes Maintenance:No Design:No Training:Yes Management:Yes Human Factors:Yes
Reported Details:
Fuel Category: Gaseous Fuel
Occurrence Type: Incident
Affiliation: Emergency Services (Fire, Police,etc)
County Name: Wellington
Approx. Quant. Rel:
Nearby body of water:
Enter Drainage Syst.:
Approx. Quant. Unit:
Environmental Impact:

76 1 of 1 **WSW/243.3** **465.5 / 0.67**

7636 HWY 6 ARTHUR ON

WWIS

<p> Well ID: 7123321 Construction Date: Primary Water Use: Monitoring Sec. Water Use: Final Well Status: Observation Wells Water Type: Casing Material: Audit No: Z098684 Tag: A083323 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy: </p>	<p> Data Entry Status: Data Src: Date Received: 5/25/2009 Selected Flag: True Abandonment Rec: Contractor: 7238 Form Version: 7 Owner: Street Name: 7636 HWY 6 County: WELLINGTON Municipality: ARTHUR VILLAGE Site Info: Lot: Concession: Concession Name: Easting NAD83: Northing NAD83: Zone: UTM Reliability: </p>
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PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/712\7123321.pdf

Additional Detail(s) (Map)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Well Completed Date: 2009/05/04
Year Completed: 2009
Depth (m): 5.4
Latitude: 43.8262111593696
Longitude: -80.5302818926332
Path: 712\7123321.pdf

Bore Hole Information

Bore Hole ID:	1002427833	Elevation:	467.093658
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537769.00
Code OB Desc:		North83:	4852678.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	04-May-2009 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1002575307
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 06
Mat2 Desc: SILT
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 5.400000095367432
Formation End Depth UOM: m

Annular Space/Abandonment

Sealing Record

Plug ID: 1002575310
Layer: 2
Plug From: 0.300000011920929
Plug To: 2.09999990463257
Plug Depth UOM: m

Annular Space/Abandonment

Sealing Record

Plug ID: 1002575309
Layer: 1
Plug From: 0
Plug To: 0.300000011920929
Plug Depth UOM: m

Annular Space/Abandonment

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<u>Sealing Record</u>					
Plug ID:		1002575311			
Layer:		3			
Plug From:		2.09999990463257			
Plug To:		5.40000009536743			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1002575316			
Method Construction Code:		E			
Method Construction:		Auger			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1002575306			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1002575313			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		2.40000009536743			
Casing Diameter:		5			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1002575314			
Layer:		1			
Slot:		10			
Screen Top Depth:		2.40000009536743			
Screen End Depth:		5.40000009536743			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.40000009536743			
<u>Water Details</u>					
Water ID:		1002575312			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1002575308			
Diameter:		21.0			
Depth From:		0.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		5.400000095367432			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

77	1 of 1	WSW/283.6	467.1 / 2.31	7636 HWY 6 ARTHUR ON	WWIS
Well ID:		7123324		Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:		Monitoring		Date Received: 5/25/2009	
Sec. Water Use:				Selected Flag: True	
Final Well Status:		Observation Wells		Abandonment Rec:	
Water Type:				Contractor: 7238	
Casing Material:				Form Version: 7	
Audit No:		Z098687		Owner:	
Tag:		A083355		Street Name: 7636 HWY 6	
Construction Method:				County: WELLINGTON	
Elevation (m):				Municipality: ARTHUR VILLAGE	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/712\7123324.pdf

Additional Detail(s) (Map)

Well Completed Date: 2009/05/04
Year Completed: 2009
Depth (m): 4.2
Latitude: 43.8257692730396
Longitude: -80.5301112466785
Path: 712\7123324.pdf

Bore Hole Information

Bore Hole ID:	1002427843	Elevation:	468.457733
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537783.00
Code OB Desc:		North83:	4852629.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	04-May-2009 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1002575491
Layer: 1

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		4.199999809265137			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575495			
Layer:		3			
Plug From:		2.59999990463257			
Plug To:		4.19999980926514			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575493			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575494			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		2.59999990463257			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1002575500			
Method Construction Code:		E			
Method Construction:		Auger			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1002575490			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1002575497			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		2.70000004768372			
Casing Diameter:		5			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1002575498			
Layer:		1			
Slot:		10			
Screen Top Depth:		2.70000004768372			
Screen End Depth:		4.19999980926514			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.40000009536743			
<u>Water Details</u>					
Water ID:		1002575496			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1002575492			
Diameter:		21.0			
Depth From:		0.0			
Depth To:		4.199999809265137			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

78	1 of 1	E/293.8	467.9 / 3.03	lot 34 con 3 ON	WWIS
Well ID:		6705263		Data Entry Status:	
Construction Date:				Data Src: 1	
Primary Water Use:		Livestock		Date Received: 9/19/1974	
Sec. Water Use:		Domestic		Selected Flag: True	
Final Well Status:		Water Supply		Abandonment Rec:	
Water Type:				Contractor: 1737	
Casing Material:				Form Version: 1	
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County: WELLINGTON	
Elevation (m):				Municipality: WEST GARAFRAXA TOWNSHIP	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot: 034	
Well Depth:				Concession: 03	
Overburden/Bedrock:				Concession Name: CON	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6705263.pdf			

Additional Detail(s) (Map)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Well Completed Date: 1974/08/16
Year Completed: 1974
Depth (m): 74.9808
Latitude: 43.8332152285779
Longitude: -80.4942163303111
Path: 670\6705263.pdf

Bore Hole Information

Bore Hole ID:	10469358	Elevation:	467.901947
DP2BR:	220.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	540664.20
Code OB Desc:	Bedrock	North83:	4853473.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	16-Aug-1974 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:		Location Method:	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 932625553
Layer: 2
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 85
Mat2 Desc: SOFT
Mat3:
Mat3 Desc:
Formation Top Depth: 1.0
Formation End Depth: 13.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 932625552
Layer: 1
Color:
General Color:
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 1.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932625559			
Layer:		8			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:		73			
Mat2 Desc:		HARD			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		221.0			
Formation End Depth:		246.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932625558			
Layer:		7			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:		85			
Mat2 Desc:		SOFT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		220.0			
Formation End Depth:		221.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932625557			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:		73			
Mat3 Desc:		HARD			
Formation Top Depth:		148.0			
Formation End Depth:		220.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932625556			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		85			
Mat3 Desc:		SOFT			
Formation Top Depth:		82.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		148.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932625555			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		12			
Mat3 Desc:		STONES			
Formation Top Depth:		23.0			
Formation End Depth:		82.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932625554			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		85			
Mat2 Desc:		SOFT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		13.0			
Formation End Depth:		23.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966705263			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11017928			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930763766			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		230			
Casing Diameter:		5			
Casing Diameter UOM:		inch			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930763767			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		246			
Casing Diameter:					
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996705263			
Pump Set At:					
Static Level:		30.0			
Final Level After Pumping:		30.0			
Recommended Pump Depth:		50.0			
Pumping Rate:		20.0			
Flowing Rate:					
Recommended Pump Rate:		20.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934341368			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		30.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934617119			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		30.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934871071			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		30.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935136444			
Test Type:		Draw Down			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Test Duration:		60			
Test Level:		30.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933958025			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		246.0			
Water Found Depth UOM:		ft			

79	1 of 1	WSW/187.0	458.6 / -6.28	lot 23 con B ON	WWIS
Well ID:		6701959		Data Entry Status:	
Construction Date:				Data Src: 1	
Primary Water Use:		Domestic		Date Received: 5/2/1956	
Sec. Water Use:		0		Selected Flag: True	
Final Well Status:		Water Supply		Abandonment Rec:	
Water Type:				Contractor: 1723	
Casing Material:				Form Version: 1	
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County: WELLINGTON	
Elevation (m):				Municipality: PEEL TOWNSHIP	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot: 023	
Well Depth:				Concession: B	
Overburden/Bedrock:				Concession Name: CON	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6701959.pdf

Additional Detail(s) (Map)

Well Completed Date: 1956/04/21
Year Completed: 1956
Depth (m): 86.2584
Latitude: 43.8274659526488
Longitude: -80.531077960804
Path: 670\6701959.pdf

Bore Hole Information

Bore Hole ID:	10466104	Elevation:	460.709014
DP2BR:	220.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537704.20
Code OB Desc:	Bedrock	North83:	4852817.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	21-Apr-1956 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<i>Improvement Location Method:</i>					
<i>Source Revision Comment:</i>					
<i>Supplier Comment:</i>					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
<i>Formation ID:</i>		932611304			
<i>Layer:</i>		2			
<i>Color:</i>					
<i>General Color:</i>					
<i>Mat1:</i>		17			
<i>Most Common Material:</i>		SHALE			
<i>Mat2:</i>					
<i>Mat2 Desc:</i>					
<i>Mat3:</i>					
<i>Mat3 Desc:</i>					
<i>Formation Top Depth:</i>		220.0			
<i>Formation End Depth:</i>		225.0			
<i>Formation End Depth UOM:</i>		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
<i>Formation ID:</i>		932611305			
<i>Layer:</i>		3			
<i>Color:</i>		2			
<i>General Color:</i>		GREY			
<i>Mat1:</i>		15			
<i>Most Common Material:</i>		LIMESTONE			
<i>Mat2:</i>					
<i>Mat2 Desc:</i>					
<i>Mat3:</i>					
<i>Mat3 Desc:</i>					
<i>Formation Top Depth:</i>		225.0			
<i>Formation End Depth:</i>		283.0			
<i>Formation End Depth UOM:</i>		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
<i>Formation ID:</i>		932611303			
<i>Layer:</i>		1			
<i>Color:</i>					
<i>General Color:</i>					
<i>Mat1:</i>		05			
<i>Most Common Material:</i>		CLAY			
<i>Mat2:</i>		12			
<i>Mat2 Desc:</i>		STONES			
<i>Mat3:</i>					
<i>Mat3 Desc:</i>					
<i>Formation Top Depth:</i>		0.0			
<i>Formation End Depth:</i>		220.0			
<i>Formation End Depth UOM:</i>		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
<i>Method Construction ID:</i>		966701959			
<i>Method Construction Code:</i>		1			
<i>Method Construction:</i>		Cable Tool			
<i>Other Method Construction:</i>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Pipe Information

Pipe ID: 11014674
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930757946
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 283
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930757945
Layer: 1
Material:
Open Hole or Material:
Depth From:
Depth To: 220
Casing Diameter: 4
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 996701959
Pump Set At:
Static Level: 28.0
Final Level After Pumping: 80.0
Recommended Pump Depth:
Pumping Rate: 2.0
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR:
Pumping Duration MIN:
Flowing: No

Water Details

Water ID: 933954253
Layer: 2
Kind Code: 1
Kind: FRESH
Water Found Depth: 274.0
Water Found Depth UOM: ft

Water Details

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water ID:		933954252			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		200.0			
Water Found Depth UOM:		ft			

[80](#) 1 of 1 **WSW/270.6** **466.9 / 2.03** **7636 HWY 6
ARTHUR ON** **WWIS**

Well ID:	7123323	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring	Date Received:	5/25/2009
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Observation Wells	Abandonment Rec:	
Water Type:		Contractor:	7238
Casing Material:		Form Version:	7
Audit No:	Z098686	Owner:	
Tag:	A083354	Street Name:	7636 HWY 6
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	ARTHUR VILLAGE
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/712\7123323.pdf

Additional Detail(s) (Map)

Well Completed Date: 2009/05/04
Year Completed: 2009
Depth (m): 3.6
Latitude: 43.8259501606212
Longitude: -80.5303088123422
Path: 712\7123323.pdf

Bore Hole Information

Bore Hole ID:	1002427839	Elevation:	467.908569
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537767.00
Code OB Desc:		North83:	4852649.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	04-May-2009 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		1002575478			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		3.5999999046325684			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575480			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575482			
Layer:		3			
Plug From:		1.79999995231628			
Plug To:		3.59999990463257			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002575481			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		1.79999995231628			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1002575487			
Method Construction Code:		E			
Method Construction:		Auger			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1002575477			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1002575484			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer: 1					
Material: 5					
Open Hole or Material: PLASTIC					
Depth From: 0					
Depth To: 2.09999990463257					
Casing Diameter: 5					
Casing Diameter UOM: cm					
Casing Depth UOM: m					
<u>Construction Record - Screen</u>					
Screen ID: 1002575485					
Layer: 1					
Slot: 10					
Screen Top Depth: 2.09999990463257					
Screen End Depth: 3.59999990463257					
Screen Material: 5					
Screen Depth UOM: m					
Screen Diameter UOM: cm					
Screen Diameter: 6					
<u>Water Details</u>					
Water ID: 1002575483					
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM: m					
<u>Hole Diameter</u>					
Hole ID: 1002575479					
Diameter: 21.0					
Depth From: 0.0					
Depth To: 3.5999999046325684					
Hole Depth UOM: m					
Hole Diameter UOM: cm					

81	1 of 1	W/318.2	460.9 / -3.97	41 ELIZA ST ARTHUR ON	WWIS
Well ID: 7042081		Data Entry Status:			
Construction Date:		Data Src:			
Primary Water Use:		Date Received: 3/30/2007			
Sec. Water Use:		Selected Flag: True			
Final Well Status: Observation Wells		Abandonment Rec:			
Water Type:		Contractor: 6988			
Casing Material:		Form Version: 3			
Audit No: Z41261		Owner:			
Tag: A037358		Street Name: 41 ELIZA ST			
Construction Method:		County: WELLINGTON			
Elevation (m):		Municipality: ARTHUR TOWNSHIP			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot:			
Well Depth:		Concession:			
Overburden/Bedrock:		Concession Name:			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2006/03/30
Year Completed: 2006
Depth (m): 4
Latitude: 43.8301433102446
Longitude: -80.5318679183248
Path:

Bore Hole Information

Bore Hole ID:	11764579	Elevation:	460.076293
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	537639.00
Code OB Desc:	Overburden	North83:	4853114.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	30-Mar-2006 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 933095978
Layer: 6
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 4.0
Formation End Depth: 4.0
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 933095976
Layer: 4
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 2.4000000953674316
Formation End Depth: 3.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		933095975			
Layer:		3			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.7999999523162842			
Formation End Depth:		2.4000000953674316			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		933095973			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		02			
Mat3 Desc:		TOPSOIL			
Formation Top Depth:		0.0			
Formation End Depth:		1.2000000476837158			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		933095977			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		3.0			
Formation End Depth:		4.0			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		933095974			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		06			
Most Common Material:		SILT			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Mat2:</i>		28			
<i>Mat2 Desc:</i>		SAND			
<i>Mat3:</i>		05			
<i>Mat3 Desc:</i>		CLAY			
<i>Formation Top Depth:</i>		1.2000000476837158			
<i>Formation End Depth:</i>		1.7999999523162842			
<i>Formation End Depth UOM:</i>		m			
 <u><i>Annular Space/Abandonment Sealing Record</i></u>					
<i>Plug ID:</i>		933316192			
<i>Layer:</i>		1			
<i>Plug From:</i>		0			
<i>Plug To:</i>		0.800000011920929			
<i>Plug Depth UOM:</i>		m			
 <u><i>Method of Construction & Well Use</i></u>					
<i>Method Construction ID:</i>		967042081			
<i>Method Construction Code:</i>		B			
<i>Method Construction:</i>		Other Method			
<i>Other Method Construction:</i>					
 <u><i>Pipe Information</i></u>					
<i>Pipe ID:</i>		11772299			
<i>Casing No:</i>		1			
<i>Comment:</i>					
<i>Alt Name:</i>					
 <u><i>Construction Record - Casing</i></u>					
<i>Casing ID:</i>		930897405			
<i>Layer:</i>		1			
<i>Material:</i>		5			
<i>Open Hole or Material:</i>		PLASTIC			
<i>Depth From:</i>		0			
<i>Depth To:</i>		0.899999976158142			
<i>Casing Diameter:</i>		5.09999990463257			
<i>Casing Diameter UOM:</i>		cm			
<i>Casing Depth UOM:</i>		m			
 <u><i>Construction Record - Screen</i></u>					
<i>Screen ID:</i>		933423745			
<i>Layer:</i>		1			
<i>Slot:</i>		10			
<i>Screen Top Depth:</i>		0.899999976158142			
<i>Screen End Depth:</i>		4			
<i>Screen Material:</i>		5			
<i>Screen Depth UOM:</i>		m			
<i>Screen Diameter UOM:</i>		cm			
<i>Screen Diameter:</i>		6			
 <u><i>Hole Diameter</i></u>					
<i>Hole ID:</i>		11850879			
<i>Diameter:</i>		10.199999809265137			
<i>Depth From:</i>		0.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		4.0			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

[82](#) 1 of 1 WSW/195.0 460.5 / -4.38 7644 Hwy 6 Arthur ON Arthur ON NOG 1A0 **EHS**

Order No:	20181112170	Nearest Intersection:	
Status:	C	Municipality:	Wellington North
Report Type:	Site Report	Client Prov/State:	ON
Report Date:	13-NOV-18	Search Radius (km):	.001
Date Received:	12-NOV-18	X:	-80.531001
Previous Site Name:		Y:	43.827221
Lot/Building Size:	1298 sq. metres		
Additional Info Ordered:			

[83](#) 1 of 1 WSW/188.9 457.0 / -7.88 7999 WORINGTON RD 109 ARTHUR ON **WWIS**

Well ID:	6715824	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:		Date Received:	7/19/2006
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Observation Wells	Abandonment Rec:	
Water Type:		Contractor:	7241
Casing Material:		Form Version:	3
Audit No:	Z50137	Owner:	
Tag:	A039339	Street Name:	7999 WORINGTON RD 109
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	ARTHUR VILLAGE
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6715824.pdf

Additional Detail(s) (Map)

Well Completed Date:	2006/06/26
Year Completed:	2006
Depth (m):	4.9
Latitude:	43.8276194812232
Longitude:	-80.5311911782186
Path:	671\6715824.pdf

Bore Hole Information

Bore Hole ID:	11558345	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	537695.00
Code OB Desc:	Overburden	North83:	4852834.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	26-Jun-2006 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	gis

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933063065			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		3.0			
Formation End Depth:		4.900000095367432			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		933063064			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		01			
Mat3 Desc:		FILL			
Formation Top Depth:		0.0			
Formation End Depth:		3.0			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933296904			
Layer:		3			
Plug From:		1.5			
Plug To:		4.90000009536743			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933296903			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		1.5			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug ID:		933296902			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966715824			
Method Construction Code:		B			
Method Construction:		Other Method			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11567952			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930882786			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		1.79999995231628			
Casing Diameter:		3.79999995231628			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		933420371			
Layer:		1			
Slot:		10			
Screen Top Depth:		1.79999995231628			
Screen End Depth:		4.90000009536743			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		4.30000019073486			
<u>Hole Diameter</u>					
Hole ID:		11690462			
Diameter:		10.0			
Depth From:		0.0			
Depth To:		4.900000095367432			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

84	1 of 1	WSW/267.8	466.9 / 2.03	7636 HWY 6 ARTHUR ON	WWIS
Well ID:	7123322			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Monitoring			Date Received:	5/25/2009
Sec. Water Use:				Selected Flag:	True

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Final Well Status:	Observation Wells			Abandonment Rec:	
Water Type:				Contractor:	7238
Casing Material:				Form Version:	7
Audit No:	Z098685			Owner:	
Tag:	A083342			Street Name:	7636 HWY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/712\7123322.pdf

Additional Detail(s) (Map)

Well Completed Date: 2009/05/04
Year Completed: 2009
Depth (m): 4.8
Latitude: 43.8260318562844
Longitude: -80.5304698469761
Path: 712\7123322.pdf

Bore Hole Information

Bore Hole ID:	1002427836	Elevation:	467.708251
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537754.00
Code OB Desc:		North83:	4852658.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	04-May-2009 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1002575397
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 06
Mat2 Desc: SILT
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 4.800000190734863
Formation End Depth UOM: m

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1002575400			
<i>Layer:</i>		2			
<i>Plug From:</i>		0.300000011920929			
<i>Plug To:</i>		3			
<i>Plug Depth UOM:</i>		m			
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1002575401			
<i>Layer:</i>		3			
<i>Plug From:</i>		3			
<i>Plug To:</i>		4.80000019073486			
<i>Plug Depth UOM:</i>		m			
<u>Annular Space/Abandonment Sealing Record</u>					
<i>Plug ID:</i>		1002575399			
<i>Layer:</i>		1			
<i>Plug From:</i>		0			
<i>Plug To:</i>		0.300000011920929			
<i>Plug Depth UOM:</i>		m			
<u>Method of Construction & Well Use</u>					
<i>Method Construction ID:</i>		1002575406			
<i>Method Construction Code:</i>		E			
<i>Method Construction:</i>		Auger			
<i>Other Method Construction:</i>					
<u>Pipe Information</u>					
<i>Pipe ID:</i>		1002575396			
<i>Casing No:</i>		0			
<i>Comment:</i>					
<i>Alt Name:</i>					
<u>Construction Record - Casing</u>					
<i>Casing ID:</i>		1002575403			
<i>Layer:</i>		1			
<i>Material:</i>		5			
<i>Open Hole or Material:</i>		PLASTIC			
<i>Depth From:</i>		0			
<i>Depth To:</i>		3.29999995231628			
<i>Casing Diameter:</i>		5			
<i>Casing Diameter UOM:</i>		cm			
<i>Casing Depth UOM:</i>		m			
<u>Construction Record - Screen</u>					
<i>Screen ID:</i>		1002575404			
<i>Layer:</i>		1			
<i>Slot:</i>		10			
<i>Screen Top Depth:</i>		3.29999995231628			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen End Depth:		4.800000	19073486		
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.400000	09536743		
<u>Water Details</u>					
Water ID:		1002575402			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1002575398			
Diameter:		21.0			
Depth From:		0.0			
Depth To:		4.800000	190734863		
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

85	1 of 1	W/290.2	458.1 / -6.74	211 ELIZA ST ARTHUR ON	WWIS
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Well ID:	7331057	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring and Test Hole	Date Received:	4/4/2019
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Observation Wells	Abandonment Rec:	
Water Type:		Contractor:	6607
Casing Material:		Form Version:	7
Audit No:	Z282665	Owner:	
Tag:	A246141	Street Name:	211 ELIZA ST
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	ARTHUR VILLAGE
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/733\7331057.pdf

Additional Detail(s) (Map)

Well Completed Date:	2019/01/10
Year Completed:	2019
Depth (m):	10.6
Latitude:	43.8296843875804
Longitude:	-80.531933691879
Path:	733\7331057.pdf

Bore Hole Information

Bore Hole ID:	1007421050	Elevation:	
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537634.00
Code OB Desc:				North83:	4853063.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	10-Jan-2019 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 1007823973
Layer: 2
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 81
Mat2 Desc: SANDY
Mat3:
Mat3 Desc:
Formation Top Depth: 0.30000001192092896
Formation End Depth: 2.4000000953674316
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1007823974
Layer: 3
Color: 8
General Color: BLACK
Mat1: 27
Most Common Material: OTHER
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 2.4000000953674316
Formation End Depth: 3.5999999046325684
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1007823972
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		0.30000001192092896			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823975			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		61			
Mat2 Desc:		CLAYEY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		3.5999999046325684			
Formation End Depth:		6.0			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823976			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		6.0			
Formation End Depth:		7.599999904632568			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823977			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		7.599999904632568			
Formation End Depth:		9.699999809265137			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823978			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		28			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		84			
Mat3 Desc:		SILTY			
Formation Top Depth:		9.699999809265137			
Formation End Depth:		10.600000381469727			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825673			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825674			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		0.899999976158142			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825675			
Layer:		3			
Plug From:		0.899999976158142			
Plug To:		7.90000009536743			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825676			
Layer:		4			
Plug From:		7.90000009536743			
Plug To:		8.80000019073486			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1007827829			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1007822125			
Casing No:		0			
Comment:					
Alt Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Construction Record - Screen</u>					
Screen ID:		1007829159			
Layer:		1			
Slot:		.10			
Screen Top Depth:		9.10000038146973			
Screen End Depth:		10.6000003814697			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.40000009536743			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1007830110			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:		LPM			
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID:		1007827055			
Diameter:		21.0			
Depth From:		0.0			
Depth To:		10.600000381469727			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

86	1 of 1	W/291.6	458.9 / -5.89	211 ELIZA ST ARTHUR ON	WWIS
Well ID:	7331056			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Monitoring and Test Hole			Date Received:	4/4/2019
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Observation Wells			Abandonment Rec:	
Water Type:				Contractor:	6607
Casing Material:				Form Version:	7
Audit No:	Z282664			Owner:	
Tag:	A246093			Street Name:	211 ELIZA ST
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/733\7331056.pdf

Additional Detail(s) (Map)

Well Completed Date: 2019/01/10
Year Completed: 2019
Depth (m): 6
Latitude: 43.8296934419952
Longitude: -80.5319460584346
Path: 733\7331056.pdf

Bore Hole Information

Bore Hole ID:	1007421036	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537633.00
Code OB Desc:		North83:	4853064.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	10-Jan-2019 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1007823970
Layer: 3
Color: 8
General Color: BLACK
Mat1: 27
Most Common Material: OTHER
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 2.4000000953674316
Formation End Depth: 3.5999999046325684
Formation End Depth UOM: m

Overburden and Bedrock

Materials Interval

Formation ID: 1007823969
Layer: 2
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 11
Mat2 Desc: GRAVEL
Mat3: 81
Mat3 Desc: SANDY
Formation Top Depth: 0.30000001192092896
Formation End Depth: 2.4000000953674316

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823968			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		0.30000001192092896			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007823971			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		06			
Most Common Material:		SILT			
Mat2:		61			
Mat2 Desc:		CLAYEY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		3.5999999046325684			
Formation End Depth:		6.0			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825671			
Layer:		1			
Plug From:		0			
Plug To:		0.300000011920929			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007825672			
Layer:		2			
Plug From:		0.300000011920929			
Plug To:		4.1999980926514			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1007827826			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Pipe Information

Pipe ID: 1007822124
 Casing No: 0
 Comment:
 Alt Name:

Construction Record - Screen

Screen ID: 1007829157
 Layer: 1
 Slot: .10
 Screen Top Depth: 4.5
 Screen End Depth: 6
 Screen Material: 5
 Screen Depth UOM: m
 Screen Diameter UOM: cm
 Screen Diameter: 6.40000009536743

Results of Well Yield Testing

Pump Test ID: 1007830109
 Pump Set At:
 Static Level:
 Final Level After Pumping:
 Recommended Pump Depth:
 Pumping Rate:
 Flowing Rate:
 Recommended Pump Rate:
 Levels UOM: m
 Rate UOM: LPM
 Water State After Test Code:
 Water State After Test:
 Pumping Test Method: 0
 Pumping Duration HR:
 Pumping Duration MIN:
 Flowing:

Hole Diameter

Hole ID: 1007827054
 Diameter: 21.0
 Depth From: 0.0
 Depth To: 6.0
 Hole Depth UOM: m
 Hole Diameter UOM: cm

87	1 of 1	WSW/486.1	469.9 / 5.03	7598 HIGHWAY 6 lot 22 con B ON	WWIS
Well ID:	7187029			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	9/13/2012
Sec. Water Use:				Selected Flag:	True
Final Well Status:	0			Abandonment Rec:	
Water Type:				Contractor:	7015
Casing Material:				Form Version:	7
Audit No:	Z141378			Owner:	
Tag:	A130727			Street Name:	7598 HIGHWAY 6
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	PEEL TOWNSHIP
Elevation Reliability:				Site Info:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Lot: 022 Concession: B Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7187029.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: Year Completed: Depth (m): Latitude: Longitude: Path:		2012/07/09 2012 43.8238103974787 -80.5288830025634 718\7187029.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID: DP2BR: Spatial Status: Code OB: Code OB Desc: Open Hole: Cluster Kind: Date Completed: Remarks: Elevrc Desc: Location Source Date: Improvement Location Source: Improvement Location Method: Source Revision Comment: Supplier Comment:	1004153923			Elevation: 471.576782 Elevrc: Zone: 17 East83: 537883.00 North83: 4852412.00 Org CS: UTM83 UTMRC: 4 UTMRC Desc: margin of error : 30 m - 100 m Location Method: wwr	
<u>Method of Construction & Well Use</u>					
Method Construction ID: Method Construction Code: Method Construction: Other Method Construction:	1004460500				
<u>Pipe Information</u>					
Pipe ID: Casing No: Comment: Alt Name:	1004460493	0			
<u>Construction Record - Casing</u>					
Casing ID: Layer: Material: Open Hole or Material: Depth From: Depth To: Casing Diameter:	1004460498				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1004460499			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1004460494			
Pump Set At:					
Static Level:		78.0			
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		0			
Water State After Test:					
Pumping Test Method:		0			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:		No			
<u>Water Details</u>					
Water ID:		1004460497			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1004460496			
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

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1 of 1

W/228.6

451.8 / -13.08

7994 WELLINGTON RD 109
ARTHUR ON

WWIS

Well ID: 7281679
Construction Date:
Primary Water Use: Monitoring
Sec. Water Use:
Final Well Status: Observation Wells
Water Type:
Casing Material:

Data Entry Status:
Data Src:
Date Received: 2/24/2017
Selected Flag: True
Abandonment Rec:
Contractor: 7190
Form Version: 7

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Audit No:	Z246442			Owner:	
Tag:	A156712			Street Name:	7994 WELLINGTON RD 109
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/728\7281679.pdf

Additional Detail(s) (Map)

Well Completed Date: 2017/01/24
Year Completed: 2017
Depth (m): 4.572
Latitude: 43.8286212128666
Longitude: -80.5317554439345
Path: 728\7281679.pdf

Bore Hole Information

Bore Hole ID:	1006357182	Elevation:	449.720703
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537649.00
Code OB Desc:		North83:	4852945.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	24-Jan-2017 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 1006598531
Layer: 2
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 77
Mat3 Desc: LOOSE
Formation Top Depth: 10.0
Formation End Depth: 15.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		1006598530			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:		77			
Mat3 Desc:		LOOSE			
Formation Top Depth:		0.0			
Formation End Depth:		10.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006598540			
Layer:		2			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006598539			
Layer:		1			
Plug From:		0			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006598538			
Method Construction Code:		B			
Method Construction:		Other Method			
Other Method Construction:		GEOPROBE			
<u>Pipe Information</u>					
Pipe ID:		1006598529			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1006598536			
Layer:		1			
Slot:		.01			
Screen Top Depth:		5			
Screen End Depth:		10			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.52499997615814			
<u>Water Details</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water ID: 1006598534					
Layer: 1					
Kind Code: 8					
Kind: Untested					
Water Found Depth: 8.0					
Water Found Depth UOM: ft					
<u>Hole Diameter</u>					
Hole ID: 1006598533					
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM: ft					
Hole Diameter UOM: inch					
<u>Hole Diameter</u>					
Hole ID: 1006598532					
Diameter: 3.25					
Depth From: 0.0					
Depth To: 15.0					
Hole Depth UOM: ft					
Hole Diameter UOM: inch					

89	1 of 1	WSW/218.3	461.0 / -3.84	lot 23 con B ON	WWIS
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Well ID:	6712367	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	11/3/1997
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2576
Casing Material:		Form Version:	1
Audit No:	177667	Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	PEEL TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	023
Well Depth:		Concession:	B
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/671\6712367.pdf

Additional Detail(s) (Map)

Well Completed Date:	1997/10/02
Year Completed:	1997
Depth (m):	59.7408
Latitude:	43.8270793692911
Longitude:	-80.5312190353761
Path:	671\6712367.pdf

Bore Hole Information

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Bore Hole ID:	10476200			Elevation:	463.863281
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	537693.10
Code OB Desc:	Overburden			North83:	4852774.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	02-Oct-1997 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

**Overburden and Bedrock
Materials Interval**

Formation ID: 932656847
Layer: 4
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 11
Mat2 Desc: GRAVEL
Mat3:
Mat3 Desc:
Formation Top Depth: 141.0
Formation End Depth: 176.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 932656846
Layer: 3
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 11
Mat2 Desc: GRAVEL
Mat3:
Mat3 Desc:
Formation Top Depth: 8.0
Formation End Depth: 141.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 932656848
Layer: 5
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 11
Mat2 Desc: GRAVEL
Mat3: 63

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3 Desc:		COARSE-GRAINED			
Formation Top Depth:		176.0			
Formation End Depth:		196.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932656845			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		8.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932656844			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		933210740			
Layer:		1			
Plug From:		0			
Plug To:		40			
Plug Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		966712367			
Method Construction Code:		4			
Method Construction:		Rotary (Air)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11024770			
Casing No:		1			
Comment:					
Alt Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Construction Record - Casing

Casing ID: 930775783
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 192
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Screen

Screen ID: 933385909
Layer: 1
Slot: 020
Screen Top Depth: 192
Screen End Depth: 196
Screen Material:
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 6

Results of Well Yield Testing

Pump Test ID: 996712367
Pump Set At:
Static Level: 45.0
Final Level After Pumping:
Recommended Pump Depth: 80.0
Pumping Rate: 30.0
Flowing Rate:
Recommended Pump Rate: 20.0
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 1
Pumping Duration MIN: 30
Flowing: No

Draw Down & Recovery

Pump Test Detail ID: 934868996
Test Type: Recovery
Test Duration: 45
Test Level: 45.0
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 935138383
Test Type: Recovery
Test Duration: 60
Test Level: 45.0
Test Level UOM: ft

Water Details

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water ID:		933966693			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		190.0			
Water Found Depth UOM:		ft			

90	1 of 1	W/215.3	453.2 / -11.69	7994 WELLINGTON RD ARTHUR ON	WWIS
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Well ID:	7145549	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring	Date Received:	5/26/2010
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Test Hole	Abandonment Rec:	
Water Type:		Contractor:	7383
Casing Material:		Form Version:	5
Audit No:	M06954	Owner:	
Tag:	A069003	Street Name:	7994 WELLINGTON RD
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	ARTHUR TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7145549.pdf

Additional Detail(s) (Map)

Well Completed Date:	2010/05/18
Year Completed:	2010
Depth (m):	20
Latitude:	43.8281089314672
Longitude:	-80.5319833144782
Path:	714\7145549.pdf

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7145549.pdf

Additional Detail(s) (Map)

Well Completed Date:	2010/05/19
Year Completed:	2010
Depth (m):	
Latitude:	43.8281468797698
Longitude:	-80.5324556237501
Path:	714\7145549.pdf

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7145549.pdf

Additional Detail(s) (Map)

Well Completed Date:	2010/05/19
Year Completed:	2010
Depth (m):	
Latitude:	43.8280535349714

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Longitude: -80.5316479490036
Path: 714\7145549.pdf

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7145549.pdf

Additional Detail(s) (Map)

Well Completed Date: 2010/05/19
Year Completed: 2010
Depth (m):
Latitude: 43.827902513381
Longitude: -80.5321466076285
Path: 714\7145549.pdf

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/714\7145549.pdf

Additional Detail(s) (Map)

Well Completed Date: 2010/05/19
Year Completed: 2010
Depth (m):
Latitude: 43.8278738730483
Longitude: -80.5317488493282
Path: 714\7145549.pdf

Bore Hole Information

Bore Hole ID:	1003311891	Elevation:	455.939788
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537593.00
Code OB Desc:		North83:	4852892.00
Open Hole:		Org CS:	UTM83
Cluster Kind:	This is a record from cluster log sheet	UTMRC:	4
Date Completed:	19-May-2010 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1003311895
Layer:
Plug From:
Plug To:
Plug Depth UOM:

**Method of Construction & Well
Use**

Method Construction ID: 1003311894
Method Construction Code:
Method Construction:
Other Method Construction: AUGER

Pipe Information

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pipe ID:		1003311896			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003311898			
Layer:					
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:		5			
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1003311897			
Layer:					
Slot:					
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1003311899			
Pump Set At:					
Static Level:		10.0			
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		m			
Rate UOM:					
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:					
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID:		1003311893			
Diameter:		8.5			
Depth From:					
Depth To:		15.0			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			
<u>Bore Hole Information</u>					
Bore Hole ID:	1003311909			Elevation:	457.705108
DP2BR:				Elevrc:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Spatial Status:				Zone:	17
Code OB:				East83:	537650.00
Code OB Desc:				North83:	4852862.00
Open Hole:				Org CS:	UTM83
Cluster Kind: This is a record from cluster log sheet				UTMRC:	4
Date Completed: 19-May-2010 00:00:00				UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003311913			
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003311912			
Method Construction Code:					
Method Construction:					
Other Method Construction:		AUGER			
<u>Pipe Information</u>					
Pipe ID:		1003311914			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003311916			
Layer:					
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:		5			
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1003311915			
Layer:					
Slot:					
Screen Top Depth:		5			
Screen End Depth:		20			
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:					
Screen Diameter:					

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<u>Results of Well Yield Testing</u>					
<i>Pump Test ID:</i>		1003311917			
<i>Pump Set At:</i>					
<i>Static Level:</i>		10.0			
<i>Final Level After Pumping:</i>					
<i>Recommended Pump Depth:</i>					
<i>Pumping Rate:</i>					
<i>Flowing Rate:</i>					
<i>Recommended Pump Rate:</i>					
<i>Levels UOM:</i>		m			
<i>Rate UOM:</i>					
<i>Water State After Test Code:</i>					
<i>Water State After Test:</i>					
<i>Pumping Test Method:</i>					
<i>Pumping Duration HR:</i>					
<i>Pumping Duration MIN:</i>					
<i>Flowing:</i>					
<u>Hole Diameter</u>					
<i>Hole ID:</i>		1003311911			
<i>Diameter:</i>		8.5			
<i>Depth From:</i>					
<i>Depth To:</i>		20.0			
<i>Hole Depth UOM:</i>		m			
<i>Hole Diameter UOM:</i>		cm			
<u>Bore Hole Information</u>					
<i>Bore Hole ID:</i>	1002986023			<i>Elevation:</i>	456.377929
<i>DP2BR:</i>				<i>Elevrc:</i>	
<i>Spatial Status:</i>				<i>Zone:</i>	17
<i>Code OB:</i>				<i>East83:</i>	537631.00
<i>Code OB Desc:</i>				<i>North83:</i>	4852888.00
<i>Open Hole:</i>	No			<i>Org CS:</i>	UTM83
<i>Cluster Kind:</i>				<i>UTMRC:</i>	4
<i>Date Completed:</i>	18-May-2010 00:00:00			<i>UTMRC Desc:</i>	margin of error : 30 m - 100 m
<i>Remarks:</i>				<i>Location Method:</i>	wwr
<i>Elevrc Desc:</i>					
<i>Location Source Date:</i>					
<i>Improvement Location Source:</i>					
<i>Improvement Location Method:</i>					
<i>Source Revision Comment:</i>					
<i>Supplier Comment:</i>					
<u>Overburden and Bedrock Materials Interval</u>					
<i>Formation ID:</i>		1003311930			
<i>Layer:</i>		2			
<i>Color:</i>		6			
<i>General Color:</i>		BROWN			
<i>Mat1:</i>		28			
<i>Most Common Material:</i>		SAND			
<i>Mat2:</i>		11			
<i>Mat2 Desc:</i>		GRAVEL			
<i>Mat3:</i>		01			
<i>Mat3 Desc:</i>		FILL			
<i>Formation Top Depth:</i>		2.0			
<i>Formation End Depth:</i>		5.0			
<i>Formation End Depth UOM:</i>		m			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Overburden and Bedrock
Materials Interval

Formation ID: 1003311929
 Layer: 1
 Color: 8
 General Color: BLACK
 Mat1:
 Most Common Material:
 Mat2:
 Mat2 Desc:
 Mat3:
 Mat3 Desc:
 Formation Top Depth: 0.0
 Formation End Depth: 2.0
 Formation End Depth UOM: m

Overburden and Bedrock
Materials Interval

Formation ID: 1003311932
 Layer: 4
 Color: 6
 General Color: BROWN
 Mat1: 28
 Most Common Material: SAND
 Mat2: 06
 Mat2 Desc: SILT
 Mat3: 77
 Mat3 Desc: LOOSE
 Formation Top Depth: 12.5
 Formation End Depth: 20.0
 Formation End Depth UOM: m

Overburden and Bedrock
Materials Interval

Formation ID: 1003311931
 Layer: 3
 Color: 6
 General Color: BROWN
 Mat1: 06
 Most Common Material: SILT
 Mat2: 05
 Mat2 Desc: CLAY
 Mat3: 85
 Mat3 Desc: SOFT
 Formation Top Depth: 5.0
 Formation End Depth: 12.5
 Formation End Depth UOM: m

Annular Space/Abandonment
Sealing Record

Plug ID: 1003311936
 Layer: 3
 Plug From: 4
 Plug To: 20
 Plug Depth UOM: m

Annular Space/Abandonment

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Sealing Record</u>					
Plug ID:		1003311935			
Layer:		2			
Plug From:		1			
Plug To:		4			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1003311934			
Layer:		1			
Plug From:		0			
Plug To:		1			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003311942			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1003311927			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003311938			
Layer:		2			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		5			
Depth To:		20			
Casing Diameter:		2			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Casing</u>					
Casing ID:		1003311937			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		5			
Casing Diameter:		2			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Casing</u>					
Casing ID:		1003311939			
Layer:		3			
Material:					

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:					
Casing Diameter UOM: cm					
Casing Depth UOM: m					
<u>Construction Record - Screen</u>					
Screen ID: 1003311940					
Layer: 1					
Slot: 10					
Screen Top Depth:					
Screen End Depth:					
Screen Material: 5					
Screen Depth UOM: m					
Screen Diameter UOM: cm					
Screen Diameter: 2.375					
<u>Results of Well Yield Testing</u>					
Pump Test ID: 1003311928					
Pump Set At:					
Static Level: 10.0					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM: m					
Rate UOM:					
Water State After Test Code: 0					
Water State After Test:					
Pumping Test Method: 0					
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID: 1003311933					
Diameter: 8.5					
Depth From: 0.0					
Depth To: 20.0					
Hole Depth UOM: m					
Hole Diameter UOM: cm					
<u>Bore Hole Information</u>					
Bore Hole ID: 1003311900					
DP2BR:					
Spatial Status:					
Code OB:					
Code OB Desc:					
Open Hole:					
Cluster Kind: This is a record from cluster log sheet					
Date Completed: 19-May-2010 00:00:00					
Remarks:					
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Elevation: 457.920745					
Elevrc:					
Zone: 17					
East83: 537618.00					
North83: 4852865.00					
Org CS: UTM83					
UTMRC: 4					
UTMRC Desc: margin of error : 30 m - 100 m					
Location Method: wwr					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003311904			
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003311903			
Method Construction Code:					
Method Construction:					
Other Method Construction:		AUGER			
<u>Pipe Information</u>					
Pipe ID:		1003311905			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003311907			
Layer:					
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:		5			
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1003311906			
Layer:					
Slot:					
Screen Top Depth:		5			
Screen End Depth:		20			
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1003311908			
Pump Set At:					
Static Level:		10.0			
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Levels UOM: m					
Rate UOM:					
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:					
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID: 1003311902					
Diameter: 8.5					
Depth From:					
Depth To: 20.0					
Hole Depth UOM: m					
Hole Diameter UOM: cm					
<u>Bore Hole Information</u>					
Bore Hole ID: 1003311918					
DP2BR:					
Spatial Status:					
Code OB:					
Code OB Desc:					
Open Hole:					
Cluster Kind: This is a record from cluster log sheet					
Date Completed: 19-May-2010 00:00:00					
Remarks:					
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID: 1003311922					
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID: 1003311921					
Method Construction Code:					
Method Construction:					
Other Method Construction: AUGER					
<u>Pipe Information</u>					
Pipe ID: 1003311923					
Casing No: 0					
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing ID: 1003311925					
Layer:					
Material: 5					
Open Hole or Material: PLASTIC					
Depth From:					
Depth To: 5					
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM: m					
<u>Construction Record - Screen</u>					
Screen ID: 1003311924					
Layer:					
Slot:					
Screen Top Depth: 5					
Screen End Depth: 15					
Screen Material:					
Screen Depth UOM: m					
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID: 1003311926					
Pump Set At:					
Static Level: 10.0					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM: m					
Rate UOM:					
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:					
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID: 1003311920					
Diameter: 8.5					
Depth From:					
Depth To: 15.0					
Hole Depth UOM: m					
Hole Diameter UOM: cm					

[91](#) 1 of 1 **WSW/213.5** **453.2 / -11.69** **7994 WELLINGTON ROAD** **ARTHUR ON** **WWIS**

Well ID:	7163864	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Monitoring and Test Hole	Date Received:	6/2/2011
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Observation Wells	Abandonment Rec:	
Water Type:		Contractor:	7190
Casing Material:		Form Version:	7
Audit No:	Z120266	Owner:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Tag:	A105833			Street Name:	7994 WELLINGTON ROAD
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR VILLAGE
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7163864.pdf

Additional Detail(s) (Map)

Well Completed Date: 2011/05/11
Year Completed: 2011
Depth (m): 4.572
Latitude: 43.8278371965875
Longitude: -80.5315874559569
Path: 716\7163864.pdf

Bore Hole Information

Bore Hole ID:	1003516973	Elevation:	457.775817
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537663.00
Code OB Desc:		North83:	4852858.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	11-May-2011 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID: 1003816258
Layer: 3
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 11
Mat2 Desc: GRAVEL
Mat3:
Mat3 Desc:
Formation Top Depth: 3.0
Formation End Depth: 10.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		1003816257			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		77			
Mat3 Desc:		LOOSE			
Formation Top Depth:		1.0			
Formation End Depth:		3.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1003816256			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:		77			
Mat3 Desc:		LOOSE			
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1003816259			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		66			
Mat3 Desc:		DENSE			
Formation Top Depth:		10.0			
Formation End Depth:		15.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1003816269			
Layer:		1			
Plug From:		0			
Plug To:		1			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1003816271			
Layer:		3			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1003816270			
Layer:		2			
Plug From:		1			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1003816267			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1003816255			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1003816262			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:		0			
Depth To:		1			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		1003816263			
Layer:		2			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		6			
Depth To:		5			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		1003816264			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:		5			
Screen Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen Diameter UOM:		inch			
Screen Diameter:		2.125			
<u>Water Details</u>					
Water ID:		1003816261			
Layer:		1			
Kind Code:		8			
Kind:		Untested			
Water Found Depth:		15.0			
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1003816260			
Diameter:		8.0			
Depth From:		0.0			
Depth To:		15.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

92	1 of 1	W/235.5	448.9 / -15.97	7994 WELLINGTON RD 109 ON EAST SIDE OF HWY 6 ARTHUR ON	WWIS
Well ID:		7220861		Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:		Monitoring		Date Received: 5/27/2014	
Sec. Water Use:				Selected Flag: True	
Final Well Status:		Observation Wells		Abandonment Rec:	
Water Type:				Contractor: 7190	
Casing Material:				Form Version: 7	
Audit No:		Z180443		Owner:	
Tag:		A146221		Street Name: 7994 WELLINGTON RD 109 ON EAST SIDE OF HWY 6 WELLINGTON ARTHUR TOWNSHIP	
Construction Method:				County:	
Elevation (m):				Municipality:	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/722\7220861.pdf

Additional Detail(s) (Map)

Well Completed Date: 2014/05/13
Year Completed: 2014
Depth (m): 6.096
Latitude: 43.8285766030692
Longitude: -80.5318552893473
Path: 722\7220861.pdf

Bore Hole Information

Bore Hole ID: 1004780304 **Elevation:** 450.450469
DP2BR: **Elevrc:**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Spatial Status:				Zone:	17
Code OB:				East83:	537641.00
Code OB Desc:				North83:	4852940.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	13-May-2014 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

Overburden and Bedrock

Materials Interval

Formation ID: 1005164326
Layer: 2
Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 15.0
Formation End Depth: 20.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 1005164325
Layer: 1
Color: 6
General Color: BROWN
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 85
Mat3 Desc: SOFT
Formation Top Depth: 0.0
Formation End Depth: 15.0
Formation End Depth UOM: ft

Annular Space/Abandonment

Sealing Record

Plug ID: 1005164334
Layer: 1
Plug From: 20
Plug To: 7
Plug Depth UOM: ft

Annular Space/Abandonment

Sealing Record

Plug ID: 1005164335
Layer: 2

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug From:		7			
Plug To:		0			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1005164332			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1005164324			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1005164330			
Layer:		1			
Slot:		10			
Screen Top Depth:		10			
Screen End Depth:		0			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2			
<u>Water Details</u>					
Water ID:		1005164328			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1005164327			
Diameter:		4.25			
Depth From:		0.0			
Depth To:		20.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			

93	1 of 1	W/333.4	460.6 / -4.27	Upper Grand District School Board Arthur Public School 141 Eliza Street Arthur ON	GEN
Generator No:	ON9809800			PO Box No:	
Status:				Country:	
Approval Years:	06			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:	611110				
SIC Description:	Elementary and Secondary Schools				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Detail(s)</u>					
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		221			
Waste Class Desc:		LIGHT FUELS			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			

94	1 of 1	WSW/308.0	467.1 / 2.31	lot 23 con A ON	WWIS
Well ID:	6703367			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:				Date Received:	6/5/1969
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1804
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	PEEL TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	023
Well Depth:				Concession:	A
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6703367.pdf				

Additional Detail(s) (Map)

Well Completed Date:	1969/06/02
Year Completed:	1969
Depth (m):	78.3336
Latitude:	43.8257177457694
Longitude:	-80.5307185515834
Path:	670\6703367.pdf

Bore Hole Information

Bore Hole ID:	10467509	Elevation:	468.836059
DP2BR:	225.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537734.20
Code OB Desc:	Bedrock	North83:	4852623.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	02-Jun-1969 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617681			
Layer:		9			
Color:					
General Color:					
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		240.0			
Formation End Depth:		257.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617673			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		3.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617680			
Layer:		8			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		225.0			
Formation End Depth:		240.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932617674			
Layer:		2			
Color:		5			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
General Color:		YELLOW			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		3.0			
Formation End Depth:		50.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617676			
Layer:		4			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		85.0			
Formation End Depth:		160.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617679			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		215.0			
Formation End Depth:		225.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617678			
Layer:		6			
Color:					
General Color:					
Mat1:		13			
Most Common Material:		BOULDERS			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		210.0			
Formation End Depth:		215.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617675			
Layer:		3			
Color:					
General Color:					
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		13			
Mat2 Desc:		BOULDERS			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		50.0			
Formation End Depth:		85.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932617677			
Layer:		5			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		160.0			
Formation End Depth:		210.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966703367			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11016079			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930760524			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		240			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test ID:		996703367			
Pump Set At:					
Static Level:		48.0			
Final Level After Pumping:		55.0			
Recommended Pump Depth:		110.0			
Pumping Rate:		15.0			
Flowing Rate:					
Recommended Pump Rate:		15.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		3			
Pumping Duration MIN:		0			
Flowing:		No			
Water Details					
Water ID:		933955840			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		248.0			
Water Found Depth UOM:		ft			

95	1 of 1	WSW/243.8	458.6 / -6.25	7995 WELLINGTON RD 109 lot 23 con B ARTHUR ON	WWIS
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Well ID:	7187196	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Domestic	Date Received:	9/17/2012
Sec. Water Use:		Selected Flag:	True
Final Well Status:	Abandoned-Other	Abandonment Rec:	Yes
Water Type:		Contractor:	7221
Casing Material:		Form Version:	7
Audit No:	Z143759	Owner:	
Tag:		Street Name:	7995 WELLINGTON RD 109
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	PEEL TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	023
Well Depth:		Concession:	B
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/7187187196.pdf

Additional Detail(s) (Map)

Well Completed Date:	2012/08/22
Year Completed:	2012
Depth (m):	
Latitude:	43.827369830956
Longitude:	-80.5317901001551
Path:	7187187196.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	1004155707			Elevation:	461.374084
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537647.00
Code OB Desc:				North83:	4852806.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	22-Aug-2012 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004398739				
Layer:	3				
Plug From:	12.2399997711182				
Plug To:	9.82999992370605				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004398740				
Layer:	4				
Plug From:	9.82999992370605				
Plug To:	1.51999998092651				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004398738				
Layer:	2				
Plug From:	13.5299997329712				
Plug To:	12.2399997711182				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004398741				
Layer:	5				
Plug From:	1.51999998092651				
Plug To:	0				
Plug Depth UOM:	m				
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1004398737				
Layer:	1				
Plug From:	15.539999961853				
Plug To:	13.5299997329712				
Plug Depth UOM:	m				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1004398736			
Method Construction Code:					
Method Construction:					
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1004398729			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1004398733			
Layer:					
Material:					
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:					
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1004398734			
Layer:					
Slot:					
Screen Top Depth:					
Screen End Depth:					
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:					
<u>Water Details</u>					
Water ID:		1004398732			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1004398731			
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			
96	1 of 1	W/279.4	451.9 / -12.95	ON	BORE

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Borehole ID:	851936			Inclin FLG:	No
OGF ID:	215574618			SP Status:	Initial Entry
Status:	Decommissioned			Surv Elev:	No
Type:	Borehole			Piezometer:	No
Use:	Geotechnical/Geological Investigation			Primary Name:	
Completion Date:	17-AUG-1959			Municipality:	
Static Water Level:	1.0			Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.828705
Total Depth m:	14.5			Longitude DD:	-80.532377
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	537599
Drill Method:	Boring			Northing:	4852954
Orig Ground Elev m:	444			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Within 10 metres
DEM Ground Elev m:	448				
Concession:					
Location D:		Highway 6, Conestoga River, Arthur.			
Survey D:					
Comments:					

Borehole Geology Stratum

Geology Stratum ID:	220428988			Mat Consistency:	
Top Depth:	0			Material Moisture:	
Bottom Depth:	1.5			Material Texture:	Coarse
Material Color:				Non Geo Mat Type:	
Material 1:	Sand			Geologic Formation:	
Material 2:	Gravel			Geologic Group:	
Material 3:	Organic			Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:		Sand, coarse gravel, organic river-bed.			
Geology Stratum ID:	220428989			Mat Consistency:	Dense
Top Depth:	1.5			Material Moisture:	
Bottom Depth:	14.5			Material Texture:	
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:	Boulders			Geologic Group:	
Material 3:	Sand			Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:		Very dense to hard, light grey to light brown sandy till, scattered boulders.			

[97](#) 1 of 2 **W/258.6** **448.6 / -16.25** **7994 WELLINGTON ROAD 109** **FST**
ARTHUR ON N0G 1A0

Instance No:	38767039			Manufacturer:	
Status:	Active			Serial No:	
Cont Name:				Ulc Standard:	
Instance Type:				Quantity:	
Item:	FS GASOLINE STATION - SELF SERVE			Unit of Measure:	
Item Description:				Fuel Type:	
Tank Type:				Fuel Type2:	
Install Date:				Fuel Type3:	
Install Year:				Piping Steel:	0
Years in Service:				Piping Galvanized:	0
Model:				Tanks Single Wall St:	0
Description:				Piping Underground:	3
Capacity:				Num Underground:	4
Tank Material:				Panam Related:	
Corrosion Protect:				Panam Venue:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Overfill Protect:
 Facility Type:
 Parent Facility Type:
 Facility Location:
 Device Installed Location:

97	2 of 2	W/258.6	448.6 / -16.25	United Petroleum Transport 7994 Wellington Rd 109, Arthur Wellington North ON	SPL
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Ref No:	8178-BRGPSX	Discharger Report:	
Site No:	NA	Material Group:	
Incident Dt:	2020/07/01	Health/Env Conseq:	2 - Minor Environment
Year:		Client Type:	Corporation
Incident Cause:		Sector Type:	Miscellaneous Communal
Incident Event:	Leak/Break	Agency Involved:	
Contaminant Code:	12	Nearest Watercourse:	
Contaminant Name:	GASOLINE	Site Address:	7994 Wellington Rd 109, Arthur
Contaminant Limit 1:		Site District Office:	Guelph
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:	1203	Site Region:	West Central
Environment Impact:		Site Municipality:	Wellington North
Nature of Impact:		Site Lot:	
Receiving Medium:		Site Conc:	
Receiving Env:	Land	Northing:	4852896.4
MOE Response:	No	Easting:	537593.76
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	2020/07/13	Site Map Datum:	
Dt Document Closed:	2020/09/04	SAC Action Class:	
Incident Reason:	Operator/Human Error	Source Type:	Truck - Tanker
Site Name:	PetroCanada<UNOFFICIAL>		
Site County/District:	County of Wellington		
Site Geo Ref Meth:			
Incident Summary:	United Petroleum: 0.5L gasoline to ground during refill		
Contaminant Qty:	0.5 L		

98	1 of 1	W/286.2	451.9 / -12.95	ON	BORE
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Borehole ID:	851937	Inclin FLG:	No
OGF ID:	215574619	SP Status:	Initial Entry
Status:	Decommissioned	Surv Elev:	No
Type:	Borehole	Piezometer:	No
Use:	Geotechnical/Geological Investigation	Primary Name:	
Completion Date:	17-AUG-1959	Municipality:	
Static Water Level:	1.0	Lot:	
Primary Water Use:		Township:	
Sec. Water Use:		Latitude DD:	43.828786
Total Depth m:	6.4	Longitude DD:	-80.532438
Depth Ref:	Ground Surface	UTM Zone:	17
Depth Elev:		Easting:	537594
Drill Method:	Boring	Northing:	4852963
Orig Ground Elev m:	445	Location Accuracy:	
Elev Reliabil Note:		Accuracy:	Within 10 metres
DEM Ground Elev m:	448		
Concession:			
Location D:	Highway 6, Conestoga River, Arthur.		
Survey D:			
Comments:			

Borehole Geology Stratum

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Geology Stratum ID: 220428991 Top Depth: .9 Bottom Depth: 6.4 Material Color: Grey Material 1: Till Material 2: Boulders Material 3: Sand Material 4: Gsc Material Description: Stratum Description: Very dense to hard light grey to light brown sandy till, scattered boulders.					
Geology Stratum ID: 220428990 Top Depth: 0 Bottom Depth: .9 Material Color: Material 1: Fill Material 2: Stones Material 3: Sand Material 4: Gravel Gsc Material Description: Stratum Description: Stones, sand, coarse gravel top fill.					
99	1 of 5	W/261.5	452.9 / -11.96	CK'S CHICKEN CHICKEN RESTAURANTS LTD 131 CATHERINE ST ARTHUR ON	PRT
Location ID: 1040 Type: retail Expiry Date: 1994-05-31 Capacity (L): 118210 Licence #: 0050865001					
99	2 of 5	W/261.5	452.9 / -11.96	CK'S CHICKEN RESTAURANT LIMITED PETRO CANADA 131 CATHERINE ST ARTHUR ON	PRT
Location ID: 1040 Type: retail Expiry Date: 1995-01-31 Capacity (L): 2000 Licence #: 0076339563					
99	3 of 5	W/261.5	452.9 / -11.96	1121113 ONTARIO INC ROYAL T GAS BAR 131 CATHERINE ST ARTHUR ON	PRT
Location ID: 1040 Type: retail Expiry Date: 1996-05-31 Capacity (L): 118456 Licence #: 0076443241					
99	4 of 5	W/261.5	452.9 / -11.96	PETRO CANADA 131 CATHERINE W ARTHUR ON N0G1A0	RST
Headcode: 1186800 Headcode Desc: Service Stations-Gasoline, Oil & Natural Gas Phone: 5198486870					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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List Name:
Description:

99	5 of 5	W/261.5	452.9 / -11.96	TRICIA CELIK 131 CATHERINE ST ARTHUR ON	FSTH
License Issue Date: Tank Status: Tank Status As Of: Operation Type: Facility Type:		12/20/2005 Pending Renewal August 2007 Retail Fuel Outlet Gasoline Station - Self Serve			
--Details--					
Status:		Active			
Year of Installation:		1990			
Corrosion Protection:					
Capacity:		36000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
Status:		Active			
Year of Installation:		1990			
Corrosion Protection:					
Capacity:		27000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
Status:		Active			
Year of Installation:		1990			
Corrosion Protection:					
Capacity:		27000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
Status:		Active			
Year of Installation:		1990			
Corrosion Protection:					
Capacity:		27000			
Tank Fuel Type:		Liquid Fuel Single Wall UST - Diesel			

100	1 of 1	W/275.9	448.6 / -16.23	ON	WWIS
Well ID:		7163571		Data Entry Status: Yes	
Construction Date:				Data Src:	
Primary Water Use:				Date Received: 5/27/2011	
Sec. Water Use:				Selected Flag: True	
Final Well Status:				Abandonment Rec:	
Water Type:				Contractor: 7383	
Casing Material:				Form Version: 5	
Audit No:		M07840		Owner:	
Tag:		A099198		Street Name:	
Construction Method:				County: WELLINGTON	
Elevation (m):				Municipality: ARTHUR VILLAGE	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7163571.pdf

Additional Detail(s) (Map)

Well Completed Date: 2011/05/17
Year Completed: 2011
Depth (m):
Latitude: 43.8282907319415
Longitude: -80.5324047527623
Path: 716\7163571.pdf

Bore Hole Information

Bore Hole ID:	1003513614	Elevation:	454.791046
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537597.00
Code OB Desc:		North83:	4852908.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	3
Date Completed:	17-May-2011 00:00:00	UTMRC Desc:	margin of error : 10 - 30 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

101	1 of 2	WSW/270.9	455.9 / -8.97	Union Gas Limited 7999 Wellington Road 109, Arthur Wellington North ON	SPL
Ref No:	1113-AQNRBG	Discharger Report:			
Site No:	NA	Material Group:			
Incident Dt:	8/28/2017	Health/Env Conseq:	2 - Minor Environment		
Year:		Client Type:	Corporation		
Incident Cause:		Sector Type:	Miscellaneous Industrial		
Incident Event:	Leak/Break	Agency Involved:			
Contaminant Code:	35	Nearest Watercourse:			
Contaminant Name:	NATURAL GAS (METHANE)	Site Address:	7999 Wellington Road 109, Arthur		
Contaminant Limit 1:		Site District Office:	Guelph		
Contam Limit Freq 1:		Site Postal Code:			
Contaminant UN No 1:	1075	Site Region:	West Central		
Environment Impact:		Site Municipality:	Wellington North		
Nature of Impact:		Site Lot:			
Receiving Medium:		Site Conc:			
Receiving Env:	Air	Northing:			
MOE Response:	No	Easting:			
Dt MOE Arvl on Scn:		Site Geo Ref Accu:			
MOE Reported Dt:	8/28/2017	Site Map Datum:			
Dt Document Closed:		SAC Action Class:	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill		
Incident Reason:	Operator/Human Error	Source Type:	Pipeline/Components		
Site Name:	Plaza<UNOFFICIAL>				
Site County/District:	County of Wellington				
Site Geo Ref Meth:					
Incident Summary:	TSSA - Union Gas, 2" plastic main line damaged, made safe				
Contaminant Qty:	0 other - see incident description				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
101	2 of 2	WSW/270.9	455.9 / -8.97	PIPELINE HIT 2" 7999 WELLINGTON RD 109,,ARTHUR,ON,,CA ON	PINC
Incident ID: Incident No: 2144284 Incident Reported Dt: 8/29/2017 Type: FS-Pipeline Incident Status Code: Tank Status: Pipeline Damage Reason Est Task No: Spills Action Centre: Fuel Type: Fuel Occurrence Tp: Date of Occurrence: Occurrence Start Dt: Depth: Customer Acct Name: PIPELINE HIT 2" Incident Address: 7999 WELLINGTON RD 109,,ARTHUR,ON,,CA Operation Type: Pipeline Type: Regulator Type: Summary: Reported By: Affiliation: Occurrence Desc: Damage Reason: Notes:		Pipe Material: Fuel Category: Health Impact: Environment Impact: Property Damage: Service Interrupt: Enforce Policy: Public Relation: Pipeline System: PSIG: Attribute Category: Regulator Location: Method Details:			

102	1 of 1	W/299.6	451.9 / -12.89	ON	BORE
Borehole ID: 851938 OGF ID: 215574620 Status: Decommissioned Type: Borehole Use: Geotechnical/Geological Investigation Completion Date: 17-AUG-1959 Static Water Level: Primary Water Use: Sec. Water Use: Total Depth m: 6.4 Depth Ref: Ground Surface Depth Elev: Drill Method: Boring Orig Ground Elev m: 445 Elev Reliabil Note: DEM Ground Elev m: 448 Concession: Location D: Highway 6, Conestoga River, Arthur. Survey D: Comments:		Inclin FLG: No SP Status: Initial Entry Surv Elev: No Piezometer: No Primary Name: Municipality: Lot: Township: Latitude DD: 43.828688 Longitude DD: -80.532638 UTM Zone: 17 Easting: 537578 Northing: 4852952 Location Accuracy: Accuracy: Within 10 metres			

Borehole Geology Stratum

Geology Stratum ID: 220428992 Top Depth: 0 Bottom Depth: 1.2 Material Color: Material 1: Fill Material 2: Stones Material 3: Sand Material 4: Gravel		Mat Consistency: Material Moisture: Material Texture: Coarse Non Geo Mat Type: Geologic Formation: Geologic Group: Geologic Period: Depositional Gen: fill	
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Gsc Material Description:					
Stratum Description:		Stones, sand, coarse gravel, top fill.			
Geology Stratum ID:	220428993			Mat Consistency:	Dense
Top Depth:	1.2			Material Moisture:	
Bottom Depth:	6.4			Material Texture:	
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:	Boulders			Geologic Group:	
Material 3:	Sand			Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:		Very dense to hard light grey to light brown sandy till, scattered boulders.			

103	1 of 1	W/304.7	451.9 / -12.89	ON	BORE
Borehole ID:	851935			Inclin FLG:	No
OGF ID:	215574617			SP Status:	Initial Entry
Status:	Decommissioned			Surv Elev:	No
Type:	Borehole			Piezometer:	No
Use:	Geotechnical/Geological Investigation			Primary Name:	
Completion Date:	17-AUG-1959			Municipality:	
Static Water Level:				Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.828787
Total Depth m:	15.1			Longitude DD:	-80.532674
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	537575
Drill Method:	Boring			Northing:	4852963
Orig Ground Elev m:	445			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Within 10 metres
DEM Ground Elev m:	449				
Concession:					
Location D:	Highway 6, Conestoga River, Arthur.				
Survey D:					
Comments:					

Borehole Geology Stratum

Geology Stratum ID:	220428986			Mat Consistency:	Hard
Top Depth:	1.8			Material Moisture:	
Bottom Depth:	12.8			Material Texture:	
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:	Boulders			Geologic Group:	
Material 3:	Sand			Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:		Light grey to light brown hard sandy till, scattered boulders.			
Geology Stratum ID:	220428987			Mat Consistency:	Dense
Top Depth:	12.8			Material Moisture:	
Bottom Depth:	15.1			Material Texture:	Medium
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Sand			Geologic Formation:	
Material 2:	Gravel			Geologic Group:	
Material 3:				Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:		Dense grey medium to coarse sand and gravel.			
Geology Stratum ID:	220428985			Mat Consistency:	
Top Depth:	0			Material Moisture:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Bottom Depth:	1.8			Material Texture: Coarse	
Material Color:	Grey			Non Geo Mat Type:	
Material 1:	Gravel			Geologic Formation:	
Material 2:	Sand			Geologic Group:	
Material 3:	Boulders			Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Coarse grey gravel, sand, boulder pieces.				

104	1 of 1	WSW/295.1	458.6 / -6.25	s.21<UNOFFICIAL> 7995 Wellington Road 109 Wellington North ON	SPL
Ref No:	5831-BB6L97			Discharger Report:	
Site No:	NA			Material Group:	
Incident Dt:	4/12/2019			Health/Env Conseq:	2 - Minor Environment
Year:				Client Type:	
Incident Cause:				Sector Type:	
Incident Event:				Agency Involved:	
Contaminant Code:	15			Nearest Watercourse:	
Contaminant Name:	MOTOR OIL			Site Address:	7995 Wellington Road 109
Contaminant Limit 1:				Site District Office:	Guelph
Contam Limit Freq 1:				Site Postal Code:	
Contaminant UN No 1:	1993			Site Region:	West Central
Environment Impact:				Site Municipality:	Wellington North
Nature of Impact:				Site Lot:	
Receiving Medium:				Site Conc:	
Receiving Env:				Northing:	
MOE Response:	Yes			Easting:	
Dt MOE Arvl on Scn:	4/15/2019			Site Geo Ref Accu:	
MOE Reported Dt:	4/12/2019			Site Map Datum:	
Dt Document Closed:	4/18/2019			SAC Action Class:	
Incident Reason:				Source Type:	
Site Name:	7995 Wellington Road 109<UNOFFICIAL>				
Site County/District:	County of Wellington				
Site Geo Ref Meth:					
Incident Summary:	Resident allowing run-off of motor vehicle fluids				
Contaminant Qty:					

105	1 of 2	W/482.4	461.9 / -2.97	244 ISABELLA lot 29 con 1 ARTHUR ON	WWIS
Well ID:	7363656			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	7/24/2020
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Abandoned-Other			Abandonment Rec:	Yes
Water Type:				Contractor:	7366
Casing Material:				Form Version:	9
Audit No:	4L2BI7RE			Owner:	
Tag:	A294993			Street Name:	244 ISABELLA
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	ARTHUR TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	029
Well Depth:				Concession:	01
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Bore Hole Information

Bore Hole ID:	1008372711	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537499.00
Code OB Desc:		North83:	4853203.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	24-Jul-2020 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID:	1008372813
Layer:	1
Color:	
General Color:	
Mat1:	
Most Common Material:	
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	
Formation End Depth UOM:	ft

**Annular Space/Abandonment
Sealing Record**

Plug ID:	1008372868
Layer:	1
Plug From:	
Plug To:	
Plug Depth UOM:	ft

**Annular Space/Abandonment
Sealing Record**

Plug ID:	1008372906
Layer:	1
Plug From:	0
Plug To:	20
Plug Depth UOM:	ft

Pipe Information

Pipe ID:	1008372755
Casing No:	0
Comment:	
Alt Name:	

Results of Well Yield Testing

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test ID: 1008372756 Pump Set At: Static Level: Final Level After Pumping: Recommended Pump Depth: Pumping Rate: Flowing Rate: Recommended Pump Rate: Levels UOM: ft Rate UOM: GPM Water State After Test Code: Water State After Test: Pumping Test Method: Pumping Duration HR: Pumping Duration MIN: Flowing:					
Hole Diameter					
Hole ID: 1008372850 Diameter: 3.9000000953674316 Depth From: 0.0 Depth To: 20.0 Hole Depth UOM: ft Hole Diameter UOM: inch					

[105](#) 2 of 2 **W/482.4** **461.9 / -2.97** **244 ISABELLA lot 29 con 1 ARTHUR ON** **WWIS**

Well ID: 7360349 Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Observation Wells Water Type: Casing Material: Audit No: BMY2XQEA Tag: A294993 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:	Data Entry Status: Data Src: Date Received: 5/15/2020 Selected Flag: True Abandonment Rec: Contractor: 7366 Form Version: 9 Owner: Street Name: 244 ISABELLA County: WELLINGTON Municipality: ARTHUR TOWNSHIP Site Info: Lot: 029 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2020/04/29
Year Completed: 2020
Depth (m): 6.096
Latitude: 43.830951738885
Longitude: -80.5336028601329
Path:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Bore Hole Information

Bore Hole ID:	1008301853	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537499.00
Code OB Desc:		North83:	4853203.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	29-Apr-2020 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	1008301946
Layer:	3
Color:	2
General Color:	GREY
Mat1:	06
Most Common Material:	SILT
Mat2:	28
Mat2 Desc:	SAND
Mat3:	
Mat3 Desc:	
Formation Top Depth:	13.0
Formation End Depth:	20.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301944
Layer:	1
Color:	6
General Color:	BROWN
Mat1:	01
Most Common Material:	FILL
Mat2:	28
Mat2 Desc:	SAND
Mat3:	
Mat3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	6.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301945
Layer:	2
Color:	6
General Color:	BROWN
Mat1:	34
Most Common Material:	TILL
Mat2:	
Mat2 Desc:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:		6.0			
Formation End Depth:		13.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302053			
Layer:		2			
Plug From:		9			
Plug To:		20			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302018			
Layer:		1			
Plug From:					
Plug To:					
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302052			
Layer:		1			
Plug From:		0			
Plug To:		9			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1008301911			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1008301891			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1008301986			
Layer:		1			
Slot:		10			
Screen Top Depth:		10			
Screen End Depth:		20			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.55999994277954			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Results of Well Yield Testing

Pump Test ID: 1008301892
Pump Set At:
Static Level:
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Hole Diameter

Hole ID: 1008302001
Diameter: 4.0
Depth From: 0.0
Depth To: 20.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

106	1 of 1	W/481.8	461.9 / -2.97	242 ISABELLA lot 29 con 1 ARTHUR ON	WWIS
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Well ID: 7360352 Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Observation Wells Water Type: Casing Material: Audit No: WXHC9MH3 Tag: A294992 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:	Data Entry Status: Data Src: Date Received: 5/15/2020 Selected Flag: True Abandonment Rec: Contractor: 7366 Form Version: 9 Owner: Street Name: 242 ISABELLA County: WELLINGTON Municipality: ARTHUR TOWNSHIP Site Info: Lot: 029 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2020/04/29
Year Completed: 2020
Depth (m): 6.096
Latitude: 43.8308531066312
Longitude: -80.5337031286766
Path:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	1008301862			Elevation:	
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	537491.00
Code OB Desc:				North83:	4853192.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	29-Apr-2020 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1008301953				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	01				
Most Common Material:	FILL				
Mat2:	11				
Mat2 Desc:	GRAVEL				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	6.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1008301954				
Layer:	2				
Color:	6				
General Color:	BROWN				
Mat1:	34				
Most Common Material:	TILL				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	6.0				
Formation End Depth:	13.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1008301955				
Layer:	3				
Color:	2				
General Color:	GREY				
Mat1:	06				
Most Common Material:	SILT				
Mat2:	28				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		13.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302058			
Layer:		1			
Plug From:		0			
Plug To:		9			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302021			
Layer:		1			
Plug From:					
Plug To:					
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302059			
Layer:		2			
Plug From:		9			
Plug To:		20			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1008301914			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1008301897			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1008301989			
Layer:		1			
Slot:		10			
Screen Top Depth:		10			
Screen End Depth:		20			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.55999994277954			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Results of Well Yield Testing

Pump Test ID: 1008301898
Pump Set At:
Static Level:
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Hole Diameter

Hole ID: 1008302004
Diameter: 4.0
Depth From: 0.0
Depth To: 20.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

[107](#) 1 of 1 **W/488.9** **461.9 / -2.97** **242 ISABELLA lot 29 con 1 ARTHUR ON** **WWIS**

<p> Well ID: 7360351 Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Observation Wells Water Type: Casing Material: Audit No: OYVTQ3W4 Tag: A294989 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy: </p>	<p> Data Entry Status: Data Src: Date Received: 5/15/2020 Selected Flag: True Abandonment Rec: Contractor: 7366 Form Version: 9 Owner: Street Name: 242 ISABELLA County: WELLINGTON Municipality: ARTHUR TOWNSHIP Site Info: Lot: 029 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability: </p>
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2020/04/29
Year Completed: 2020
Depth (m): 4.572
Latitude: 43.8309342394276
Longitude: -80.5337273721429
Path:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Bore Hole Information

Bore Hole ID:	1008301859	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537489.00
Code OB Desc:		North83:	4853201.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	29-Apr-2020 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	1008301952
Layer:	3
Color:	2
General Color:	GREY
Mat1:	06
Most Common Material:	SILT
Mat2:	28
Mat2 Desc:	SAND
Mat3:	
Mat3 Desc:	
Formation Top Depth:	11.0
Formation End Depth:	15.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301951
Layer:	2
Color:	6
General Color:	BROWN
Mat1:	34
Most Common Material:	TILL
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	7.0
Formation End Depth:	11.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301950
Layer:	1
Color:	6
General Color:	BROWN
Mat1:	01
Most Common Material:	FILL

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		77			
Mat3 Desc:		LOOSE			
Formation Top Depth:		0.0			
Formation End Depth:		7.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302057			
Layer:		2			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302020			
Layer:		1			
Plug From:					
Plug To:					
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302056			
Layer:		1			
Plug From:		0			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1008301913			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1008301895			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1008301988			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		1.55999994277954			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Results of Well Yield Testing

Pump Test ID: 1008301896
Pump Set At:
Static Level:
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Hole Diameter

Hole ID: 1008302003
Diameter: 4.0
Depth From: 0.0
Depth To: 15.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

108	1 of 1	W/496.7	461.9 / -2.97	242 ISABELLA lot 29 con 1 ARTHUR ON	WWIS
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Well ID: 7360350 Construction Date: Primary Water Use: Sec. Water Use: Final Well Status: Observation Wells Water Type: Casing Material: Audit No: CTMH27X6 Tag: A294991 Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:	Data Entry Status: Data Src: Date Received: 5/15/2020 Selected Flag: True Abandonment Rec: Contractor: 7366 Form Version: 9 Owner: Street Name: 242 ISABELLA County: WELLINGTON Municipality: ARTHUR TOWNSHIP Site Info: Lot: 029 Concession: 01 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:
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PDF URL (Map):

Additional Detail(s) (Map)

Well Completed Date: 2020/04/29
Year Completed: 2020
Depth (m): 4.572
Latitude: 43.8309795612553
Longitude: -80.5338016447926

Path:

Bore Hole Information

Bore Hole ID:	1008301856	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	537483.00
Code OB Desc:		North83:	4853206.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	29-Apr-2020 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	1008301949
Layer:	3
Color:	2
General Color:	GREY
Mat1:	28
Most Common Material:	SAND
Mat2:	06
Mat2 Desc:	SILT
Mat3:	
Mat3 Desc:	
Formation Top Depth:	11.0
Formation End Depth:	15.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301948
Layer:	2
Color:	6
General Color:	BROWN
Mat1:	34
Most Common Material:	TILL
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	7.0
Formation End Depth:	11.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	1008301947
Layer:	1
Color:	6
General Color:	BROWN
Mat1:	01

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:					
Mat2:		FILL			
Mat2 Desc:		28			
Mat3:		SAND			
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		7.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302019			
Layer:		1			
Plug From:					
Plug To:					
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302054			
Layer:		1			
Plug From:		0			
Plug To:		4			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1008302055			
Layer:		2			
Plug From:		4			
Plug To:		15			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1008301912			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1008301893			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1008301987			
Layer:		1			
Slot:		10			
Screen Top Depth:		5			
Screen End Depth:		15			
Screen Material:		5			
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Screen Diameter: 1.55999994277954

Results of Well Yield Testing

Pump Test ID: 1008301894
Pump Set At:
Static Level:
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Hole Diameter

Hole ID: 1008302002
Diameter: 4.0
Depth From: 0.0
Depth To: 15.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

[109](#) 1 of 1 W/402.4 456.0 / -8.83 ON [WWIS](#)

Well ID: 6700002	Data Entry Status:
Construction Date:	Data Src: 1
Primary Water Use: Municipal	Date Received: 1/17/1951
Sec. Water Use: 0	Selected Flag: True
Final Well Status: Water Supply	Abandonment Rec:
Water Type:	Contractor: 2414
Casing Material:	Form Version: 1
Audit No:	Owner:
Tag:	Street Name:
Construction Method:	County: WELLINGTON
Elevation (m):	Municipality: ARTHUR VILLAGE
Elevation Reliability:	Site Info:
Depth to Bedrock:	Lot:
Well Depth:	Concession:
Overburden/Bedrock:	Concession Name:
Pump Rate:	Easting NAD83:
Static Water Level:	Northing NAD83:
Flowing (Y/N):	Zone:
Flow Rate:	UTM Reliability:
Clear/Cloudy:	

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6700002.pdf

Additional Detail(s) (Map)

Well Completed Date: 1950/06/28
Year Completed: 1950
Depth (m): 92.964
Latitude: 43.8291517888551

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Longitude:			-80.53379970338		
Path:			670\6700002.pdf		
<u>Bore Hole Information</u>					
Bore Hole ID:	10464150			Elevation:	454.013916
DP2BR:	159.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	537484.30
Code OB Desc:	Bedrock			North83:	4853003.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	9
Date Completed:	28-Jun-1950 00:00:00			UTMRC Desc:	unknown UTM
Remarks:				Location Method:	p9
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932603126				
Layer:	13				
Color:	1				
General Color:	WHITE				
Mat1:	26				
Most Common Material:	ROCK				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	259.0				
Formation End Depth:	267.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932603116				
Layer:	3				
Color:	6				
General Color:	BROWN				
Mat1:	08				
Most Common Material:	FINE SAND				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	35.0				
Formation End Depth:	50.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932603130				
Layer:	17				
Color:	3				
General Color:	BLUE				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		288.0			
Formation End Depth:		305.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603115			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		5.0			
Formation End Depth:		35.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603121			
Layer:		8			
Color:		1			
General Color:		WHITE			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		183.0			
Formation End Depth:		187.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603125			
Layer:		12			
Color:		3			
General Color:		BLUE			
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		240.0			
Formation End Depth:		259.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:			932603128		
Layer:			15		
Color:			2		
General Color:			GREY		
Mat1:			26		
Most Common Material:			ROCK		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			269.0		
Formation End Depth:			273.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932603122		
Layer:			9		
Color:			3		
General Color:			BLUE		
Mat1:			26		
Most Common Material:			ROCK		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:			187.0		
Formation End Depth:			194.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932603118		
Layer:			5		
Color:			3		
General Color:			BLUE		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:			09		
Mat2 Desc:			MEDIUM SAND		
Mat3:					
Mat3 Desc:					
Formation Top Depth:			60.0		
Formation End Depth:			155.0		
Formation End Depth UOM:			ft		
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			932603117		
Layer:			4		
Color:			3		
General Color:			BLUE		
Mat1:			05		
Most Common Material:			CLAY		
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation Top Depth:		50.0			
Formation End Depth:		60.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603120			
Layer:		7			
Color:		6			
General Color:		BROWN			
Mat1:		15			
Most Common Material:		LIMESTONE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		159.0			
Formation End Depth:		183.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603129			
Layer:		16			
Color:		6			
General Color:		BROWN			
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		273.0			
Formation End Depth:		288.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603123			
Layer:		10			
Color:		2			
General Color:		GREY			
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		194.0			
Formation End Depth:		203.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603119			
Layer:		6			
Color:					
General Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		155.0			
Formation End Depth:		159.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603124			
Layer:		11			
Color:		6			
General Color:		BROWN			
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		203.0			
Formation End Depth:		240.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603127			
Layer:		14			
Color:		3			
General Color:		BLUE			
Mat1:		26			
Most Common Material:		ROCK			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		267.0			
Formation End Depth:		269.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932603114			
Layer:		1			
Color:					
General Color:					
Mat1:		01			
Most Common Material:		FILL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		5.0			
Formation End Depth UOM:		ft			

Method of Construction & Well

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Use</u>					
Method Construction ID:		966700002			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11012720			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930754091			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		305			
Casing Diameter:		10			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930754090			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		159			
Casing Diameter:		10			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996700002			
Pump Set At:					
Static Level:		30.0			
Final Level After Pumping:		130.0			
Recommended Pump Depth:					
Pumping Rate:		70.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		8			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933951941			
Layer:		1			
Kind Code:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind:		FRESH			
Water Found Depth:		285.0			
Water Found Depth UOM:		ft			

110	1 of 1	W/479.8	460.9 / -3.97	ENBRIDGE GAS INC 270 GEORGE ST,,ARTHUR,ON,N0G 1A0,CA ON	PINC
Incident ID:				Pipe Material:	
Incident No:	3034834			Fuel Category:	
Incident Reported Dt:	4/1/2021			Health Impact:	
Type:	FS-Pipeline Incident			Environment Impact:	
Status Code:				Property Damage:	
Tank Status:	Pipeline Damage Reason Est			Service Interrupt:	
Task No:				Enforce Policy:	
Spills Action Centre:				Public Relation:	
Fuel Type:				Pipeline System:	
Fuel Occurrence Tp:				PSIG:	
Date of Occurrence:				Attribute Category:	
Occurrence Start Dt:				Regulator Location:	
Depth:				Method Details:	
Customer Acct Name:	ENBRIDGE GAS INC				
Incident Address:	270 GEORGE ST,,ARTHUR,ON,N0G 1A0,CA				
Operation Type:					
Pipeline Type:					
Regulator Type:					
Summary:					
Reported By:					
Affiliation:					
Occurrence Desc:					
Damage Reason:					
Notes:					

111	1 of 1	WSW/485.4	468.6 / 3.73	lot 23 con B ON	WWIS
Well ID:	6701960			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	7/16/1956
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1723
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	WELLINGTON
Elevation (m):				Municipality:	PEEL TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	023
Well Depth:				Concession:	B
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):	https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6701960.pdf				
Additional Detail(s) (Map)					
Well Completed Date:	1956/05/10				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Year Completed:		1956			
Depth (m):		73.7616			
Latitude:		43.8246537212395			
Longitude:		-80.5325301461243			
Path:		670\6701960.pdf			

Bore Hole Information

Bore Hole ID:	10466105	Elevation:	467.823333
DP2BR:	238.00	Elevrc:	
Spatial Status:		Zone:	17
Code OB:	r	East83:	537589.20
Code OB Desc:	Bedrock	North83:	4852504.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	10-May-1956 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	932611306
Layer:	1
Color:	
General Color:	
Mat1:	05
Most Common Material:	CLAY
Mat2:	12
Mat2 Desc:	STONES
Mat3:	
Mat3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	94.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	932611308
Layer:	3
Color:	
General Color:	
Mat1:	05
Most Common Material:	CLAY
Mat2:	12
Mat2 Desc:	STONES
Mat3:	
Mat3 Desc:	
Formation Top Depth:	150.0
Formation End Depth:	238.0
Formation End Depth UOM:	ft

Overburden and Bedrock

Materials Interval

Formation ID:	932611307
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Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		94.0			
Formation End Depth:		150.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932611309			
Layer:		4			
Color:					
General Color:					
Mat1:		17			
Most Common Material:		SHALE			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		238.0			
Formation End Depth:		242.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966701960			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11014675			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930757947			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:					
Depth To:		238			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930757948			
Layer:		2			
Material:		4			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		242			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996701960			
Pump Set At:					
Static Level:		54.0			
Final Level After Pumping:		80.0			
Recommended Pump Depth:					
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:		1			
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:		No			
<u>Water Details</u>					
Water ID:		933954254			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		242.0			
Water Found Depth UOM:		ft			

[112](#) 1 of 1 **W/417.6** **458.6 / -6.25** **lot 23 con B ON** **WWIS**

Well ID:	6701958	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	12/8/1950
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	4314
Casing Material:		Form Version:	1
Audit No:		Owner:	
Tag:		Street Name:	
Construction Method:		County:	WELLINGTON
Elevation (m):		Municipality:	PEEL TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	023
Well Depth:		Concession:	B
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/670\6701958.pdf

Additional Detail(s) (Map)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Well Completed Date: 1950/08/17
Year Completed: 1950
Depth (m): 30.7848
Latitude: 43.8274692026157
Longitude: -80.5340739734324
Path: 670\6701958.pdf

Bore Hole Information

Bore Hole ID:	10466103	Elevation:	460.969604
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	537463.30
Code OB Desc:	Overburden	North83:	4852816.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	17-Aug-1950 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

**Overburden and Bedrock
Materials Interval**

Formation ID: 932611299
Layer: 4
Color:
General Color:
Mat1: 09
Most Common Material: MEDIUM SAND
Mat2: 05
Mat2 Desc: CLAY
Mat3: 14
Mat3 Desc: HARDPAN
Formation Top Depth: 50.0
Formation End Depth: 90.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 932611298
Layer: 3
Color:
General Color:
Mat1: 05
Most Common Material: CLAY
Mat2: 14
Mat2 Desc: HARDPAN
Mat3: 12
Mat3 Desc: STONES
Formation Top Depth: 20.0
Formation End Depth: 50.0
Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		932611301			
Layer:		6			
Color:					
General Color:					
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		94.0			
Formation End Depth:		98.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932611297			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		14.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932611296			
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Mat2 Desc:		STONES			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		14.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932611302			
Layer:		7			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		98.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation End Depth:		101.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932611300			
Layer:		5			
Color:					
General Color:					
Mat1:		12			
Most Common Material:		STONES			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		90.0			
Formation End Depth:		94.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966701958			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11014673			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930757944			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		101			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996701958			
Pump Set At:					
Static Level:		34.0			
Final Level After Pumping:		55.0			
Recommended Pump Depth:					
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
<i>Pumping Duration HR:</i>		5			
<i>Pumping Duration MIN:</i>		0			
<i>Flowing:</i>		No			

Water Details

Water ID: 933954251
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 101.0
Water Found Depth UOM: ft

Unplottable Summary

Total: **76** Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	The Corporation of the Township of Wellington North	Charles Street, Catherine Street, Tucker Street	Wellington North ON	
CA	ARTHUR VILL. 3-1256-88-006	300 M. E. OF ELIZA ST.	ARTHUR VILL. ON	
CA	WELLINGTON COUNTY	CHARLES STREET	ARTHUR VILL. ON	
CA	The Corporation of the Township of Wellington North	Francis St E	Wellington North ON	
CA	The Corporation of the Township of Wellington North	Jones Baseline and George Street (Hwy 6)	Wellington North ON	
CA	JMB HOLDINGS	STREET A ELIZA STREET	ARTHUR VILL. ON	
CA	JMB HOLDINGS	STREET A ELIZA ST.	ARTHUR VILL. ON	
CA	ARTHUR VILL.	CHARLES STREET	ARTHUR VILL. ON	
CA	2073022 Ontario Inc.	Eastview Drive and Carrol Street Part of Lot 1, Concession 1, Arthur	Wellington North ON	
CONV	ONTARIO CLEAN WATER AGENCY		ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
DTNK	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
DTNK	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
DTNK	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	

DTNK	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
DTNK	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	N0G 1A0
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	
DTNK	CANGO INC**	HWY 6 & 9 CORNERS	ARTHUR ON	
ECA	2073022 Ontario Inc.	Schmidt Dr Town of Arthur	Wellington North ON	N0G 1A0
ECA	The Corporation of the Township of Wellington North	Jones Baseline and George St (Hwy 6)	Wellington North ON	
ECA	2073022 Ontario Inc.	Schmidt Dr	Wellington North ON	N0G 1A0
ECA	The Corporation of the Township of Wellington North	Isabella Street East	Wellington North ON	N0G 2E0
ECA	The Corporation of the Township of Wellington North	George Street/ Hwy No. 6 & County Rd. 109	Wellington North ON	
ECA	The Corporation of the Township of Wellington North	Jones Baseline and George St (Hwy 6)	Wellington North ON	
ECA	2073022 Ontario Inc.	Eastview Drive and Carrol Street Part of Lot 1, Concession 1, Arthur	Wellington North ON	N0G 1A0
EXP		HWY 6 & 9 CORNERS ARTHUR N0G 1A0	ON	
EXP		HWY 6 & 9 CORNERS ARTHUR N0G 1A0	ON	
EXP		HWY 6 & 9 CORNERS ARTHUR N0G 1A0	ON	
FST	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
FST	INTER COUNTY MILK TRANSPORT LTD	LOT 23 CON B WELLINGTON ARTHUR TWP N0G 1A0 ON CA	ON	

FST	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
FST	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
FST	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
FST	CANGO INC**	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA	ON	
FST	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
FST	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
FST	PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO	PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA	ON	
GEN	Bell Canada	VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION	(SEE SCHEDULE "B") ON	
GEN	UNION GAS LTD	VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION	(SEE SCHEDULE "B") ON	
GEN	Bell Canada	VARIOUS BELL MANHOLES AND ACCESS CHAMBERS WITHIN MOE S.W. REGION	(SEE SCHEDULE "B") ON	K1P 6L9
GEN	TRANSCANADA PIPELINES LTD.	VARIOUS SITES WITHIN THE MOEE W.C. REGION	(SEE SCHEDULE "B") ON	
GEN	TRANSCANADA PIPELINES LTD.	VARIOUS SITES WITHIN THE MOEE S.W. REGION	(SEE SCHEDULE "B") ON	
GEN	UNION GAS	VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION	(SEE SCHEDULE "B") ON	
GEN	UNION GAS LTD	VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION	(SEE SCHEDULE "B") ON	N7M 5M1
GEN	CANADIAN NATIONAL RAILWAY	VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION	(SEE SCHEDULE "B") ON	
GEN	ST. LAWRENCE SEAWAY MANAGEMENT	VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION	(SEE SCHEDULE "B") ON	
GEN	ENBRIDGE GAS DISTRIBUTION	VARIOUS SITES WITHIN THE MOEE WEST-CENTRAL REGION	(SEE SCHEDULE "B") ON	M1K 5E3
GEN	ENBRIDGE GAS DISTRIBUTION	VARIOUS SITES WITHIN THE MOEE SOUTHWESTERN REGION	(SEE SCHEDULE "B") ON	M2J 1P6
GEN	Bell Canada	VARIOUS BELL MANHOLES AND ACCESS CHAMBERS WITHIN MOE S.W. REGION	(SEE SCHEDULE "B") ON	

GEN	UNION GAS	VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION	(SEE SCHEDULE "B" ON	
GEN	UNION GAS LTD	VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION	(SEE SCHEDULE "B" ON	N7M 5M1
GEN	UNION GAS LTD	VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION	(SEE SCHEDULE "B" ON	N7M 5M1
GEN	UNION GAS	VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION	(SEE SCHEDULE "B" ON	
GEN	UNITED CO-OPERATIVES (SEE&USE ON1446976)	LOT 2 PT.PLAN CROWN SURVEY	ARTHUR ON	
GEN	UNITED CO (SEE & USE ON1446976) 39-180	LOT 2 PT.PLAN CROWN SURVEY, VILLAGE OF ARTHUR,C/O SMITH ST. NORTH	ARTHUR ON	N0G 1A0
GEN	UNITED CO-OPERATIVES OF ONTARIO	LOT 2 PT.PLAN CROWN SURVEY, VILLAGE OF ARTHUR,C/O SMITH ST. NORTH	ARTHUR ON	N0G 1A0
LIMO	Ontario Liquid Disposal Site Ontario Liquid Waste Disposal Inc Guelph-Eramosa	Township Lot 2, Concession 1 Division B; 850m Southwest of intersection of Whitelaw and	County Road 24 Wellington ON	
PES	LONG'S HOME HDWR BLDG CENTRE / DIV 1007954 ONT INC	WELLINGTON ROAD 109 E, PO BOX 280	ARTHUR ON	N0G1A0
PES	LONG'S HOME HDWE. BLDG. CENTRE/DIV. 1007954 ONT. INC	WELLINGTON ROAD 109 EAST	ARTHUR ON	N0G 1A0
PES	LONG'S HOME HDWR BLDG CENTRE / DIV 1007954 ONT INC	WELLINGTON ROAD 109 E, PO BOX 280	ARTHUR ON	N0G 1A0
SPL	The Corporation of the County of Wellington	Hwy 6 at Side Rd 9	Wellington North ON	
SPL	Jim Brown Trucking<UNOFFICIAL>	Northeast Corner of Wellington Road 109 and Wellington Road 16	Wellington North ON	
SPL	PUC	CHARLES STREET STORAGE TANK	ARTHUR VILLAGE ON	
SPL	PETRO-CANADA	SERVICE STATION	WELLINGTON NORTH TOWNSHIP ON	
SPL		Lot 35, Schmidt Drive	Wellington North ON	
SPL	ONTARIO HYDRO	LOT 2, CONCESSION 1 TRANSFORMER	WEST LUTHER TOWNSHIP ON	
WWIS		NA PRESTON STREET NORTH lot 29 con 1	ARTHUR ON	
WWIS		NA PRESTON STREET NORTH lot 29 con 1	ARTHUR ON	
WWIS		NA PRESTON STREET NORTH lot 29 con 1	ARTHUR ON	

Unplottable Report

Site: *The Corporation of the Township of Wellington North
Charles Street, Catherine Street, Tucker Street Wellington North ON*

Database:
[CA](#)

Certificate #: 1601-78GGQ5
Application Year: 2007
Issue Date: 10/30/2007
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: *ARTHUR VILL. 3-1256-88-006
300 M. E. OF ELIZA ST. ARTHUR VILL. ON*

Database:
[CA](#)

Certificate #: 8-2214-89-
Application Year: 89
Issue Date: 8/10/1990
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: PROJ. #3-0680 S.T.P.
Contaminants:
Emission Control:

Site: *WELLINGTON COUNTY
CHARLES STREET ARTHUR VILL. ON*

Database:
[CA](#)

Certificate #: 3-1212-87-
Application Year: 87
Issue Date: 9/1/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: *The Corporation of the Township of Wellington North
Francis St E Wellington North ON*

Database:
[CA](#)

Certificate #: 2508-8GZPXQ

Application Year: 2011
Issue Date: 5/24/2011
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: *The Corporation of the Township of Wellington North
Jones Baseline and George Street (Hwy 6) Wellington North ON*

Database:
[CA](#)

Certificate #: 3461-5RYGAV
Application Year: 2003
Issue Date: 10/3/2003
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: *JMB HOLDINGS
STREET A ELIZA STREET ARTHUR VILL. ON*

Database:
[CA](#)

Certificate #: 3-0534-89-
Application Year: 89
Issue Date: 7/18/1989
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: *JMB HOLDINGS
STREET A ELIZA ST. ARTHUR VILL. ON*

Database:
[CA](#)

Certificate #: 7-0472-89-
Application Year: 89
Issue Date: 7/18/1989
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ARTHUR VILL.
CHARLES STREET ARTHUR VILL. ON

Database:
CA

Certificate #: 7-1002-87-
Application Year: 87
Issue Date: 8/26/1987
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: 2073022 Ontario Inc.
Eastview Drive and Carrol Street Part of Lot 1, Concession 1, Arthur Wellington North ON

Database:
CA

Certificate #: 5329-6XGQ66
Application Year: 2007
Issue Date: 1/16/2007
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ONTARIO CLEAN WATER AGENCY
ON

Database:
CONV

File No:
Crown Brief No: 98-0204-0248
Court Location:
Publication City:
Publication Title:
Act:
Act(s):
First Matter:
Second Matter:
Investigation 1:
Investigation 2:
Penalty Imposed:
Description: DISCHARGE OF MATERIAL, NAMELY SODIUM HYPOCHLORITE SOLUTION, INTO OR IN THE CHALMERS DRAIN, THAT MAY IMPAIR QUALITY OF THE WATER.
Background:
URL:

Location:
Region: SOUTH WEST REGION
Ministry District: SARNIA & HURON COUNTY

Additional Details

Publication Date:
Count: 1
Act: OWRA
Regulation:
Section: 30(1)
Act/Regulation/Section: OWRA- -30(1)
Date of Offence:

Date of Conviction:
Date Charged: 11/10/00
Charge Disposition: SUSPENDED SENTENCE
Fine: \$10,000.00
Synopsis:

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
DTNK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
DTNK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
DTNK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
DTNK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
DTNK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
DTNK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
DTNK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
DTNK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON N0G 1A0

Database:
DTNK

**Delisted Expired Fuel Safety
Facilities**

Instance No: 10000183
Status: EXPIRED
Instance ID:
Instance Type: FS Facility
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:
ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:

Expired Date: 5/21/2009
Max Hazard Rank:
Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description:
Original Source: EXP
Record Date: Up to May 2013

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON

Database:
DTNK

Delisted Expired Fuel Safety
Facilities

Instance No:	63309358	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	347102	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	
ULC Standard:		Piping Steel:	
Quantity:		Piping Galvanized:	
Unit of Measure:		Tank Single Wall St:	
Overfill Prot Type:		Piping Underground:	
Creation Date:		Tank Underground:	
Next Periodic Str DT:		Source:	
TSSA Base Sched Cycle 2:			
TSSA Max Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			
TSSA Statutory Interval:			
TSSA Recd Insp Interva:			
TSSA Recd Tolerance:			
TSSA Program Area:			
TSSA Program Area 2:			
Description:	FS Piping		
Original Source:	EXP		
Record Date:	Up to Mar 2012		

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON

Database:
DTNK

Delisted Expired Fuel Safety
Facilities

Instance No:	63309359	Expired Date:	
Status:	EXPIRED	Max Hazard Rank:	
Instance ID:	348293	Facility Location:	
Instance Type:	FS Piping	Facility Type:	
Instance Creation Dt:		Fuel Type 2:	
Instance Install Dt:		Fuel Type 3:	
Item Description:		Panam Related:	
Manufacturer:		Panam Venue Nm:	
Model:		External Identifier:	
Serial No:		Item:	

ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Piping
Original Source: EXP
Record Date: Up to Mar 2012

Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON

Database:
DTNK

**Delisted Expired Fuel Safety
Facilities**

Instance No: 63309357
Status: EXPIRED
Instance ID: 348939
Instance Type: FS Piping
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:
ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Piping
Original Source: EXP
Record Date: Up to Mar 2012

Expired Date:
Max Hazard Rank:
Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON

Database:
DTNK

**Delisted Expired Fuel Safety
Facilities**

Instance No: 11153729
Status: EXPIRED

Expired Date:
Max Hazard Rank:

Instance ID: 71295
Instance Type: FS Piping
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:
ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Piping
Original Source: EXP
Record Date: Up to Mar 2012

Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR ON

Database:
DTNK

**Delisted Expired Fuel Safety
Facilities**

Instance No: 11581956
Status: EXPIRED
Instance ID: 92485
Instance Type: FS Piping
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:
ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Piping
Original Source: EXP
Record Date: Up to Mar 2012

Expired Date:
Max Hazard Rank:
Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: 2073022 Ontario Inc.
Schmidt Dr Town of Arthur Wellington North ON N0G 1A0

Database:
ECA

Approval No: 2800-BKFLN4
Approval Date: 2020-01-21
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: 2073022 Ontario Inc.
Address: Schmidt Dr Town of Arthur
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/3122-BCWKJL-14.pdf>

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: *The Corporation of the Township of Wellington North
Jones Baseline and George St (Hwy 6) Wellington North ON*

Database:
ECA

Approval No: 3461-5RYGAV
Approval Date: 2003-10-03
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: The Corporation of the Township of Wellington North
Address: Jones Baseline and George St (Hwy 6)
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/8788-5Q8KCG-14.pdf>

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: *2073022 Ontario Inc.
Schmidt Dr Wellington North ON N0G 1A0*

Database:
ECA

Approval No: 7603-BJ2KYR
Approval Date: 2019-12-11
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: 2073022 Ontario Inc.
Address: Schmidt Dr
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/6458-BCVRB6-14.pdf>

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: *The Corporation of the Township of Wellington North
Isabella Street East Wellington North ON N0G 2E0*

Database:
ECA

Approval No: 0465-BGALCQ
Approval Date: 2019-09-29
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: The Corporation of the Township of Wellington North
Address: Isabella Street East
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/5664-B9MNPA-13.pdf>

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: The Corporation of the Township of Wellington North
George Street/ Hwy No. 6 & County Rd. 109 Wellington North ON

Database:
ECA

Approval No: 4527-5CXPKC
Approval Date: 2002-08-14
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: The Corporation of the Township of Wellington North
Address: George Street/ Hwy No. 6 & County Rd. 109
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/4005-5BEJMJ-14.pdf>

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: The Corporation of the Township of Wellington North
Jones Baseline and George St (Hwy 6) Wellington North ON

Database:
ECA

Approval No: 4915-5RYG7K
Approval Date: 2003-10-03
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-Municipal Drinking Water Systems
Project Type: Municipal Drinking Water Systems
Business Name: The Corporation of the Township of Wellington North
Address: Jones Baseline and George St (Hwy 6)
Full Address:
Full PDF Link:

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Site: 2073022 Ontario Inc.
Eastview Drive and Carrol Street Part of Lot 1, Concession 1, Arthur Wellington North ON N0G 1A0

Database:
ECA

Approval No: 5329-6XGQ66
Approval Date: 2007-01-16
Status: Revoked and/or Replaced
Record Type: ECA
Link Source: IDS
SWP Area Name: Grand River
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Business Name: 2073022 Ontario Inc.
Address: Eastview Drive and Carrol Street Part of Lot 1, Concession 1, Arthur
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/3672-6W9NN8-14.pdf>

MOE District: Guelph
City:
Longitude: -80.5287
Latitude: 43.8347
Geometry X:
Geometry Y:

Site: HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON

Database:
EXP

Instance No: 33576110
Status: Dismantled
Instance ID:
Instance Type:
Instance Creation Dt:
Instance Install Dt:
Item: FS GASOLINE STATION - SELF SERVE
Item Description:
Facility Type:
Overfill Prot Type:
Creation Date:
Expired Date:
Manufacturer:

Model:
Quantity:
Unit of Measure:
Fuel Type2:
Fuel Type3:
Piping Steel: 0
Piping Galvanized: 0
Tank Single Wall St: 4
Piping Underground: 5
Tank Underground: 4
Panam Related:
Panam Venue Nm:

Description:
Serial No:
Ulc Standard:
Facility Location: HWY 6 & 9 CORNERS ARTHUR NOG 1A0
Source: FS All Facility

Site: HWY 6 & 9 CORNERS ARTHUR NOG 1A0 ON

Database:
EXP

Instance No:	33576110	Model:	
Status:	Dismantled	Quantity:	
Instance ID:		Unit of Measure:	
Instance Type:		Fuel Type2:	
Instance Creation Dt:		Fuel Type3:	
Instance Install Dt:		Piping Steel:	0
Item:	FS GASOLINE STATION - SELF SERVE	Piping Galvanized:	0
Item Description:		Tank Single Wall St:	0
Facility Type:	FS Piping	Piping Underground:	5
Overfill Prot Type:		Tank Underground:	0
Creation Date:		Panam Related:	
Expired Date:		Panam Venue Nm:	
Manufacturer:			
Description:			
Serial No:			
Ulc Standard:			
Facility Location:	HWY 6 & 9 CORNERS ARTHUR NOG 1A0		
Source:	FS Expired Facilities		

Site: HWY 6 & 9 CORNERS ARTHUR NOG 1A0 ON

Database:
EXP

Instance No:	33576110	Model:	
Status:	Dismantled	Quantity:	
Instance ID:		Unit of Measure:	
Instance Type:		Fuel Type2:	
Instance Creation Dt:		Fuel Type3:	
Instance Install Dt:		Piping Steel:	0
Item:	FS GASOLINE STATION - SELF SERVE	Piping Galvanized:	0
Item Description:		Tank Single Wall St:	4
Facility Type:	FS Liquid Fuel Tank	Piping Underground:	0
Overfill Prot Type:		Tank Underground:	4
Creation Date:		Panam Related:	
Expired Date:		Panam Venue Nm:	
Manufacturer:			
Description:			
Serial No:			
Ulc Standard:			
Facility Location:	HWY 6 & 9 CORNERS ARTHUR NOG 1A0		
Source:	FS Expired Facilities		

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
FST

Instance No:	10542130	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:	FS Liquid Fuel Tank	Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Gasoline
Tank Type:	Single Wall UST	Fuel Type2:	NULL
Install Date:	4/30/1992	Fuel Type3:	NULL
Install Year:	1990	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	

Description:
Capacity: 25000
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS GASOLINE STATION - FULL SERVE
Facility Location:
Device Installed Location: PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA

Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
Item: FS LIQUID FUEL TANK

Site: INTER COUNTY MILK TRANSPORT LTD
LOT 23 CON B WELLINGTON ARTHUR TWP N0G 1A0 ON CA ON

Database:
FST

Instance No: 10542385
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Single Wall UST
Install Date: 1/10/1990
Install Year: 1989
Years in Service:
Model: NULL
Description:
Capacity: 50000
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: Fuels Safety Private Fuel Outlet - Self Serve
Facility Location:
Device Installed Location: LOT 23 CON B WELLINGTON ARTHUR TWP N0G 1A0 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Diesel
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: INTER COUNTY MILK TRANSPORT LTD

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: INTER COUNTY MILK TRANSPORT LTD
Item: FS LIQUID FUEL TANK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
FST

Instance No: 11153692
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Single Wall UST

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL

Install Date: 5/20/2009 **Fuel Type3:** NULL
Install Year: 1990 **Piping Steel:**
Years in Service: **Piping Galvanized:**
Model: NULL **Tanks Single Wall St:**
Description: **Piping Underground:**
Capacity: 25000 **Num Underground:**
Tank Material: Steel **Panam Related:**
Corrosion Protect: **Panam Venue:**
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS Gasoline Station - Self Serve
Facility Location:
Device Installed Location: HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA

Fuel Storage Tank Details

Owner Account Name: CANGO INC**

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: CANGO INC**
Item: FS LIQUID FUEL TANK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
FST

Instance No: 11153710 **Manufacturer:**
Status: **Serial No:**
Cont Name: **Ulc Standard:**
Instance Type: FS Liquid Fuel Tank **Quantity:**
Item: FS LIQUID FUEL TANK **Unit of Measure:**
Item Description: FS Liquid Fuel Tank **Fuel Type:** Gasoline
Tank Type: Single Wall UST **Fuel Type2:** NULL
Install Date: 5/20/2009 **Fuel Type3:** NULL
Install Year: 1990 **Piping Steel:**
Years in Service: **Piping Galvanized:**
Model: NULL **Tanks Single Wall St:**
Description: **Piping Underground:**
Capacity: 25000 **Num Underground:**
Tank Material: Steel **Panam Related:**
Corrosion Protect: **Panam Venue:**
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS Gasoline Station - Self Serve
Facility Location:
Device Installed Location: HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA

Fuel Storage Tank Details

Owner Account Name: CANGO INC**

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: CANGO INC**
Item: FS LIQUID FUEL TANK

Site: CANGO INC**
HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
FST

Instance No: 11150422 **Manufacturer:**
Status: **Serial No:**
Cont Name: **Ulc Standard:**

Instance Type:	FS Liquid Fuel Tank	Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Gasoline
Tank Type:	Single Wall UST	Fuel Type2:	NULL
Install Date:	5/20/2009	Fuel Type3:	NULL
Install Year:	1990	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	
Capacity:	25000	Num Underground:	
Tank Material:	Steel	Panam Related:	
Corrosion Protect:		Panam Venue:	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:	FS Gasoline Station - Self Serve		
Facility Location:			
Device Installed Location:	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA		

Fuel Storage Tank Details

Owner Account Name: CANGO INC**

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: CANGO INC**
Item: FS LIQUID FUEL TANK

Site: CANGO INC**
 HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA ON

Database:
 FST

Instance No:	11153680	Manufacturer:	
Status:		Serial No:	
Cont Name:		Ulc Standard:	
Instance Type:	FS Liquid Fuel Tank	Quantity:	
Item:	FS LIQUID FUEL TANK	Unit of Measure:	
Item Description:	FS Liquid Fuel Tank	Fuel Type:	Gasoline
Tank Type:	Single Wall UST	Fuel Type2:	NULL
Install Date:	5/20/2009	Fuel Type3:	NULL
Install Year:	1990	Piping Steel:	
Years in Service:		Piping Galvanized:	
Model:	NULL	Tanks Single Wall St:	
Description:		Piping Underground:	
Capacity:	25000	Num Underground:	
Tank Material:	Steel	Panam Related:	
Corrosion Protect:		Panam Venue:	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:	FS Gasoline Station - Self Serve		
Facility Location:			
Device Installed Location:	HWY 6 & 9 CORNERS ARTHUR N0G 1A0 ON CA		

Fuel Storage Tank Details

Owner Account Name: CANGO INC**

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: CANGO INC**
Item: FS LIQUID FUEL TANK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
 PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
 FST

Instance No: 10542157
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Single Wall UST
Install Date: 4/30/1992
Install Year: 1990
Years in Service:
Model: NULL
Description:
Capacity: 25000
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS GASOLINE STATION - FULL SERVE
Facility Location:
Device Installed Location: PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
Item: FS LIQUID FUEL TANK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
 PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
 FST

Instance No: 10542099
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Single Wall UST
Install Date: 4/30/1992
Install Year: 1990
Years in Service:
Model: NULL
Description:
Capacity: 25000
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS GASOLINE STATION - FULL SERVE
Facility Location:
Device Installed Location: PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
Item: FS LIQUID FUEL TANK

Site: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA ON

Database:
FST

Instance No: 10542190
Status:
Cont Name:
Instance Type: FS Liquid Fuel Tank
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Single Wall UST
Install Date: 4/30/1992
Install Year: 1990
Years in Service:
Model: NULL
Description:
Capacity: 25000
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type: FS GASOLINE STATION - FULL SERVE
Facility Location:
Device Installed Location: PRT LOT 37 CON 1 HWYS 6 & 9 ARTHUR M6B 3Y1 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO

Liquid Fuel Tank Details

Overfill Protection:
Owner Account Name: PIONEER CANGO MANAGEMENT INC C/O COOPERS AND LYBRAND - D. DAL BELLO
Item: FS LIQUID FUEL TANK

Site: Bell Canada
VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION (SEE
SCHEDULE "B") ON

Database:
GEN

Generator No: ONR000302
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 517110, 517210, 517510
SIC Description: WIRED TELECOMMUNICATIONS CARRIERS, WIRELESS TELECOMMUNICATIONS CARRIERS (EXCEPT SATELLITE)

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 150
Waste Class Desc: INERT INORGANIC WASTES

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Site: UNION GAS LTD
VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION (SEE SCHEDULE "B" ON

Database:
GEN

Generator No: ONR001001
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: NATURAL GAS DISTRIBUTION

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Site: Bell Canada
VARIOUS BELL MANHOLES AND ACCESS CHAMBERS WITHIN MOE S.W. REGION (SEE SCHEDULE "B") ON K1P
6L9

Database:
GEN

Generator No: ONR000301
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 517110, 517210, 517510
SIC Description: Wired Telecommunications Carriers, Wireless Telecommunications Carriers (except Satellite), Cable and Other Program Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 150
Waste Class Desc: INERT INORGANIC WASTES

Site: TRANSCANADA PIPELINES LTD.
VARIOUS SITES WITHIN THE MOEE W.C. REGION (SEE SCHEDULE "B") ON

Database:
GEN

Generator No: ONR000202
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 486210
SIC Description: Pipeline Transportation of Natural Gas

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Waste Class: 123
Waste Class Desc: ALKALINE PHOSPHATES

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 134
Waste Class Desc: SULPHIDE-CONTAINING WASTES

Waste Class: 112
Waste Class Desc: ACID WASTE - HEAVY METALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 121
Waste Class Desc: ALKALINE WASTES - HEAVY METALS

Waste Class: 222
Waste Class Desc: HEAVY FUELS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 269
Waste Class Desc: NON-HALOGENATED PESTICIDES

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 262
Waste Class Desc: DETERGENTS/SOAPS

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 114
Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 331
Waste Class Desc: WASTE COMPRESSED GASES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 267
Waste Class Desc: ORGANIC ACIDS

Waste Class: 268
Waste Class Desc: AMINES

Waste Class: 242
Waste Class Desc: HALOGENATED PESTICIDES

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 211
Waste Class Desc: AROMATIC SOLVENTS

Site: TRANSCANADA PIPELINES LTD.
VARIOUS SITES WITHIN THE MOEE S.W. REGION (SEE SCHEDULE "B") ON

Database:
GEN

Generator No: ONR000201
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 486210
SIC Description: Pipeline Transportation of Natural Gas

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 123
Waste Class Desc: ALKALINE PHOSPHATES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 262
Waste Class Desc: DETERGENTS/SOAPS

Waste Class: 268
Waste Class Desc: AMINES

Waste Class: 134
Waste Class Desc: SULPHIDE-CONTAINING WASTES

Waste Class: 331
Waste Class Desc: WASTE COMPRESSED GASES

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 267
Waste Class Desc: ORGANIC ACIDS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 269
Waste Class Desc: NON-HALOGENATED PESTICIDES

Waste Class: 242
Waste Class Desc: HALOGENATED PESTICIDES

Waste Class: 222
Waste Class Desc: HEAVY FUELS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 211
Waste Class Desc: AROMATIC SOLVENTS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 114
Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 121
Waste Class Desc: ALKALINE WASTES - HEAVY METALS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 112
Waste Class Desc: ACID WASTE - HEAVY METALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Site: UNION GAS
 VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION (SEE SCHEDULE "B" ON

Database:
 GEN

Generator No: ONR001002
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Site: UNION GAS LTD
 VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION (SEE SCHEDULE "B" ON N7M 5M1

Database:
 GEN

Generator No: ONR001001
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Site: CANADIAN NATIONAL RAILWAY
VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION (SEE SCHEDULE "B") ON

Database:
GEN

Generator No: ONR000702
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 482113
SIC Description: Mainline Freight Rail Transportation

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 121
Waste Class Desc: ALKALINE WASTES - HEAVY METALS

Waste Class: 268
Waste Class Desc: AMINES

Waste Class: 269
Waste Class Desc: NON-HALOGENATED PESTICIDES

Waste Class: 222
Waste Class Desc: HEAVY FUELS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 331
Waste Class Desc: WASTE COMPRESSED GASES

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 233
Waste Class Desc: OTHER POLYMERIC WASTES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 112
Waste Class Desc: ACID WASTE - HEAVY METALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 113
Waste Class Desc: ACID WASTE - OTHER METALS

Waste Class: 266
Waste Class Desc: PHENOLIC WASTES

Waste Class: 231
Waste Class Desc: LATEX WASTES

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 254
Waste Class Desc: TRANSFER STATION OILS WASTES

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 270
Waste Class Desc: OTHER SPECIFIED ORGANICS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Site: ST. LAWRENCE SEAWAY MANAGEMENT
 VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION (SEE SCHEDULE "B") ON

Database:
 GEN

Generator No:	ONR000602	PO Box No:	
Status:		Country:	
Approval Years:	2012	Choice of Contact:	
Contam. Facility:		Co Admin:	
MHSW Facility:		Phone No Admin:	
SIC Code:	488390		
SIC Description:	Other Support Activities for Water Transportation		

Detail(s)

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Waste Class: 121
Waste Class Desc: ALKALINE WASTES - HEAVY METALS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 331
Waste Class Desc: WASTE COMPRESSED GASES

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 112
Waste Class Desc: ACID WASTE - HEAVY METALS

Site: ENBRIDGE GAS DISTRIBUTION
VARIOUS SITES WITHIN THE MOEE WEST-CENTRAL REGION (SEE SCHEDULE "B") ON M1K 5E3

Database:
GEN

Generator No: ONR000502
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Site: ENBRIDGE GAS DISTRIBUTION
VARIOUS SITES WITHIN THE MOEE SOUTHWESTERN REGION (SEE SCHEDULE "B") ON M2J 1P6

Database:
GEN

Generator No: ONR000501
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 252

Waste Class Desc: WASTE OILS & LUBRICANTS
Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS
Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES
Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS
Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS
Waste Class: 221
Waste Class Desc: LIGHT FUELS

Site: **Bell Canada**
VARIOUS BELL MANHOLES AND ACCESS CHAMBERS WITHIN MOE S.W. REGION (SEE SCHEDULE "B") ON

Database:
GEN

Generator No: ONR000301
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 517110, 517210, 517510
SIC Description: WIRED TELECOMMUNICATIONS CARRIERS, WIRELESS TELECOMMUNICATIONS CARRIERS (EXCEPT SATELLITE)
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 150
Waste Class Desc: INERT INORGANIC WASTES
Waste Class: 221
Waste Class Desc: LIGHT FUELS
Waste Class: 253
Waste Class Desc: EMULSIFIED OILS
Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES
Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Site: **UNION GAS**
VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION (SEE SCHEDULE "B") ON

Database:
GEN

Generator No: ONR001002
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS
Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Site: UNION GAS LTD
VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION (SEE SCHEDULE "B" ON N7M 5M1)

Database:
GEN

Generator No: ONR001001
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Site: UNION GAS LTD
VARIOUS SITES WITHIN THE MOE SOUTHWESTERN REGION (SEE SCHEDULE "B" ON N7M 5M1)

Database:
GEN

Generator No: ONR001001
Status:
Approval Years: 2010
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Site: UNION GAS
VARIOUS SITES WITHIN THE MOE WEST-CENTRAL REGION (SEE SCHEDULE "B" ON

Database:
GEN

Generator No: ONR001002
Status:
Approval Years: 2010
Contam. Facility:
MHSW Facility:
SIC Code: 221210
SIC Description: Natural Gas Distribution

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Site: UNITED CO-OPERATIVES (SEE&USE ON1446976)

Database:
GEN

LOT 2 PT.PLAN CROWN SURVEY ARTHUR ON

Generator No: ON0178418
Status:
Approval Years: 98
Contam. Facility:
MHSW Facility:
SIC Code: 5111
SIC Description: PETROLEUM PROD., WH.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Site: **UNITED CO (SEE & USE ON1446976) 39-180**
LOT 2 PT.PLAN CROWN SURVEY, VILLAGE OF ARTHUR,C/O SMITH ST. NORTH ARTHUR ON N0G 1A0

Database:
GEN

Generator No: ON0178418
Status:
Approval Years: 92,93,94,95,96,97
Contam. Facility:
MHSW Facility:
SIC Code: 5111
SIC Description: PETROLEUM PROD., WH.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Site: **UNITED CO-OPERATIVES OF ONTARIO**
LOT 2 PT.PLAN CROWN SURVEY, VILLAGE OF ARTHUR,C/O SMITH ST. NORTH ARTHUR ON N0G 1A0

Database:
GEN

Generator No: ON0178418
Status:
Approval Years: 86,87,88,89,90
Contam. Facility:
MHSW Facility:
SIC Code: 5111
SIC Description: PETROLEUM PROD., WH.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Site: **Ontario Liquid Disposal Site Ontario Liquid Waste Disposal Inc Guelph-Eramosa**
Township Lot 2, Concession 1 Division B; 850m Southwest of intersection of Whitelaw and County Road 24
Wellington ON

Database:
LIMO

ECA/Instrument No: A171501
Oper Status 2016: Closed
C of A Issue Date:
C of A Issued to:
Lndfl Gas Mgmt (P):
Lndfl Gas Mgmt (F):
Lndfl Gas Mgmt (E):
Lndfl Gas Mgmt Sys:
Landfill Gas Mntr:
Leachate Coll Sys:
ERC Est Vol (m3):
ERC Volume Unit:
ERC Dt Last Det:
Landfill Type:

Natural Attenuation:
Liners:
Cover Material:
Leachate Off-Site:
Leachate On Site:
Req Coll Lndfl Gas:
Lndfl Gas Coll:
Total Waste Rec:
TWR Methodology:
TWR Unit:
Tot Aprv Cap Unit:
Financial Assurance:
Last Report Year:
MOE Region:

Source File Type:
Fill Rate:
Fill Rate Unit:
Tot Fill Area (ha):
Tot Site Area (ha):
Footprint:
Tot Apprv Cap (m3):
Contam Atten Zone:
Grndwtr Mntr:
Surf Wtr Mntr:
Air Emis Monitor:
Approved Waste Type:
Client Site Name:
ERC Methodology:
Site Name:

Ontario Liquid Disposal Site
Ontario Liquid Waste Disposal Inc
Guelph-Eramosa Township

MOE District:
Site County:
Lot:
Concession:
Latitude:
Longitude:
Easting:
Northing:
UTM Zone:
Data Source:

Site Location Details:
Service Area:
Page URL:

Site: LONG'S HOME HDWR BLDG CENTRE / DIV 1007954 ONT INC
WELLINGTON ROAD 109 E, PO BOX 280 ARTHUR ON N0G1A0

Database:
[PES](#)

Detail Licence No:
Licence No:
Status:
Approval Date:
Report Source:
Licence Type: Vendor
Licence Type Code:
Licence Class:
Licence Control:
Latitude:
Longitude:
Lot:
Concession:
Region:
District:
County:
Trade Name:
PDF Link:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region:
Operator District:
Operator County:
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: LONG'S HOME HDWE. BLDG. CENTRE/DIV. 1007954 ONT. INC
WELLINGTON ROAD 109 EAST ARTHUR ON N0G 1A0

Database:
[PES](#)

Detail Licence No: 23-01-08966-0
Licence No: 08966
Status:
Approval Date:
Report Source:
Licence Type: Limited Vendor
Licence Type Code: 23
Licence Class: 01
Licence Control: 0
Latitude:
Longitude:
Lot:
Concession:
Region: 2
District: 2
County: 67
Trade Name:
PDF Link:

Operator Box: 820
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region: 2
Operator District: 2
Operator County: 67
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: LONG'S HOME HDWR BLDG CENTRE / DIV 1007954 ONT INC
WELLINGTON ROAD 109 E, PO BOX 280 ARTHUR ON N0G 1A0

Database:
PES

Detail Licence No:
Licence No:
Status:
Approval Date:
Report Source:
Licence Type: Limited Vendor
Licence Type Code: 23
Licence Class:
Licence Control:
Latitude:
Longitude:
Lot:
Concession:
Region:
District:
County:
Trade Name:
PDF Link:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region:
Operator District:
Operator County:
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: The Corporation of the County of Wellington
Hwy 6 at Side Rd 9 Wellington North ON

Database:
SPL

Ref No: 2512-9E4TRL
Site No:
Incident Dt: 2013/12/05
Year:
Incident Cause: Fire/Explosion
Incident Event:
Contaminant Code: 46
Contaminant Name: FOAM
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Not Anticipated
Nature of Impact: Soil Contamination
Receiving Medium:
Receiving Env:
MOE Response: No Field Response
Dt MOE Arvl on Scn:
MOE Reported Dt: 2013/12/05
Dt Document Closed: 2013/12/09
Incident Reason: Unknown / N/A
Site Name: shoulder <UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: County of Wellington: roll off bin fire, foam to shoulder
Contaminant Qty: 0 other - see incident description

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type: Truck - Transport/Hauling
Agency Involved:
Nearest Watercourse:
Site Address: Hwy 6 at Side Rd 9
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: Wellington North
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class: Land Spills
Source Type:

Site: Jim Brown Trucking<UNOFFICIAL>
Northeast Corner of Wellington Road 109 and Wellington Road 16 Wellington North ON

Database:
SPL

Ref No: 1842-94QT8K
Site No:
Incident Dt: 08-FEB-13
Year:
Incident Cause: Collision/Accident
Incident Event:
Contaminant Code: 43
Contaminant Name: SALT
Contaminant Limit 1:
Contam Limit Freq 1:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type: Truck - Transport/Hauling
Agency Involved:
Nearest Watercourse:
Site Address: Northeast Corner of Wellington Road 109 and Wellington Road 16
Site District Office:
Site Postal Code:

Contaminant UN No 1:
Environment Impact: Not Anticipated
Nature of Impact: Soil Contamination
Receiving Medium:
Receiving Env:
MOE Response: No Field Response
Dt MOE Arvl on Scn:
MOE Reported Dt: 08-FEB-13
Dt Document Closed: 12-FEB-13
Incident Reason: Weather Conditions
Site Name: Wellington Road 109<UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: Jim Brown Truck: truckload of road salt to ditch, contained
Contaminant Qty: 0 other - see incident description

Site Region:
Site Municipality: Wellington North
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class: Land Spills
Source Type:

Site: PUC **Database:** SPL
CHARLES STREET STORAGE TANK ARTHUR VILLAGE ON

Ref No: 112746
Site No:
Incident Dt: 5/5/1995
Year:
Incident Cause: UNDERGROUND TANK LEAK
Incident Event:
Contaminant Code:
Contaminant Name:
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: POSSIBLE
Nature of Impact: Soil contamination
Receiving Medium: LAND
Receiving Env:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 5/5/1995
Dt Document Closed:
Incident Reason: DAMAGE BY MOVING EQUIPMENT
Site Name:
Site County/District:
Site Geo Ref Meth:
Incident Summary: ARTHUR VILLAGE-UKN QTY FURNACE OIL TO GRND,TANK STRUCK DURING EXCAVATION
Contaminant Qty:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved:
Nearest Watercourse:
Site Address:
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: 75501
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class:
Source Type:

Site: PETRO-CANADA **Database:** SPL
SERVICE STATION WELLINGTON NORTH TOWNSHIP ON

Ref No: 195902
Site No:
Incident Dt: 3/3/2001
Year:
Incident Cause: UNKNOWN
Incident Event:
Contaminant Code:
Contaminant Name:
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Confirmed
Nature of Impact: Water course or lake
Receiving Medium: Water, Land
Receiving Env:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 3/3/2001

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved: FIRE AND WORKS DEPARTMENTS
Nearest Watercourse:
Site Address:
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: 75617
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:

Dt Document Closed:
Incident Reason: UNKNOWN
Site Name:
Site County/District:
Site Geo Ref Meth:
Incident Summary: PETRO CANADA: 58.5 L GAS TO STORM AND THEN TO SAU -GEEN RIVER. NOT CLEANED.
Contaminant Qty:

SAC Action Class:
Source Type:

Site: Lot 35, Schmidt Drive Wellington North ON

Database:
 SPL

<p> Ref No: 0123-9CSU4Y Site No: Incident Dt: 2013/10/24 Year: Incident Cause: Leak/Break Incident Event: Contaminant Code: 35 Contaminant Name: NATURAL GAS (METHANE) Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Confirmed Nature of Impact: Air Pollution Receiving Medium: Receiving Env: MOE Response: Referral to others Dt MOE Arvl on Scn: MOE Reported Dt: 2013/10/24 Dt Document Closed: 2013/11/01 Incident Reason: Unknown / N/A Site Name: Lot 35, Schmidt Drive, Arthur<UNOFFICIAL> Site County/District: Site Geo Ref Meth: Incident Summary: TSSA- Spill- 1.25" plastic main hit by contractor Contaminant Qty: 0 other - see incident description </p>	<p> Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Pipeline/Components Agency Involved: Nearest Watercourse: Site Address: Lot 35, Schmidt Drive Site District Office: Site Postal Code: Site Region: Site Municipality: Wellington North Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill Source Type: </p>
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Site: ONTARIO HYDRO
 LOT 2, CONCESSION 1 TRANSFORMER WEST LUTHER TOWNSHIP ON

Database:
 SPL

<p> Ref No: 107136 Site No: Incident Dt: 11/7/1994 Year: Incident Cause: COOLING SYSTEM LEAK Incident Event: Contaminant Code: Contaminant Name: Contaminant Limit 1: Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: NOT ANTICIPATED Nature of Impact: Receiving Medium: LAND Receiving Env: MOE Response: Dt MOE Arvl on Scn: MOE Reported Dt: 11/7/1994 Dt Document Closed: Incident Reason: STORM/FLOOD/WIND Site Name: Site County/District: Site Geo Ref Meth: Incident Summary: ONTARIO HYDRO-10L NON-PCBOIL TO SOIL FROM FALLEN TRANSFORMER Contaminant Qty: </p>	<p> Discharger Report: Material Group: Health/Env Conseq: Client Type: Sector Type: Agency Involved: Nearest Watercourse: Site Address: Site District Office: Site Postal Code: Site Region: Site Municipality: 75606 Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: Source Type: </p>
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Site:

NA PRESTON STREET NORTH lot 29 con 1 ARTHUR ON

Database:
WWIS

Well ID: 7362917
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use:
Final Well Status: Monitoring and Test Hole
Water Type:
Casing Material:
Audit No: 7D4JPUGO
Tag: A287472
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src:
Date Received: 7/17/2020
Selected Flag: True
Abandonment Rec:
Contractor: 7190
Form Version: 9
Owner:
Street Name: NA PRESTON STREET NORTH
County: WELLINGTON
Municipality: ARTHUR TOWNSHIP
Site Info: ROLL # 2349000013076030000
Lot: 029
Concession: 01
Concession Name: CON
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 1008349739
DP2BR:
Spatial Status:
Code OB:
Code OB Desc:
Open Hole:
Cluster Kind:
Date Completed: 28-Jan-2020 00:00:00
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 17
East83: 536618.00
North83: 4853591.00
Org CS: UTM83
UTMRC: 4
UTMRC Desc: margin of error : 30 m - 100 m
Location Method: wwr

Overburden and Bedrock**Materials Interval**

Formation ID: 1008349911
Layer: 3
Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3:
Mat3 Desc:
Formation Top Depth: 18.0
Formation End Depth: 30.0
Formation End Depth UOM: ft

Overburden and Bedrock**Materials Interval**

Formation ID: 1008349910
Layer: 2

Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 34
Mat2 Desc: TILL
Mat3: 66
Mat3 Desc: DENSE
Formation Top Depth: 1.0
Formation End Depth: 18.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1008349909
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 1.0
Formation End Depth UOM: ft

Annular Space/Abandonment
Sealing Record

Plug ID: 1008350045
Layer: 3
Plug From: 18
Plug To: 30
Plug Depth UOM: ft

Annular Space/Abandonment
Sealing Record

Plug ID: 1008350044
Layer: 2
Plug From: 1
Plug To: 18
Plug Depth UOM: ft

Annular Space/Abandonment
Sealing Record

Plug ID: 1008350043
Layer: 1
Plug From: 0
Plug To: 1
Plug Depth UOM: ft

Annular Space/Abandonment
Sealing Record

Plug ID: 1008350010
Layer: 1
Plug From:
Plug To:
Plug Depth UOM: ft

Method of Construction & Well Use

Method Construction ID: 1008349824
Method Construction Code: 2
Method Construction: Rotary (Convent.)
Other Method Construction:

Method of Construction & Well Use

Method Construction ID: 1008349825
Method Construction Code: E
Method Construction: Auger
Other Method Construction:

Pipe Information

Pipe ID: 1008349787
Casing No: 0
Comment:
Alt Name:

Construction Record - Screen

Screen ID: 1008349972
Layer: 1
Slot: 010
Screen Top Depth: 20
Screen End Depth: 30
Screen Material: 5
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 2

Results of Well Yield Testing

Pump Test ID: 1008349788
Pump Set At:
Static Level: 22.0
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Water Details

Water ID: 1008349867
Layer: 1
Kind Code: 8
Kind: Untested
Water Found Depth: 22.0
Water Found Depth UOM: ft

Hole Diameter

Hole ID: 1008349991
Diameter: 6.5
Depth From: 0.0
Depth To: 30.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

Site:

NA PRESTON STREET NORTH lot 29 con 1 ARTHUR ON

Database:
WWIS

Well ID: 7362918
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use:
Final Well Status: Monitoring and Test Hole
Water Type:
Casing Material:
Audit No: 9FH2R3L8
Tag: A287473
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src:
Date Received: 7/17/2020
Selected Flag: True
Abandonment Rec:
Contractor: 7190
Form Version: 9
Owner:
Street Name: NA PRESTON STREET NORTH
County: WELLINGTON
Municipality: ARTHUR TOWNSHIP
Site Info: ROLL # 2349000013027500000
Lot: 029
Concession: 01
Concession Name: CON
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 1008349742
DP2BR:
Spatial Status:
Code OB:
Code OB Desc:
Open Hole:
Cluster Kind:
Date Completed: 27-Jan-2020 00:00:00
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 17
East83: 536422.00
North83: 4853852.00
Org CS: UTM83
UTMRC: 4
UTMRC Desc: margin of error : 30 m - 100 m
Location Method: wwr

Overburden and Bedrock

Materials Interval

Formation ID: 1008349912
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 1.0

Formation End Depth UOM: ft

**Overburden and Bedrock
Materials Interval**

Formation ID: 1008349913
Layer: 2
Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 74
Mat3 Desc: LAYERED
Formation Top Depth: 1.0
Formation End Depth: 20.0
Formation End Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350047
Layer: 2
Plug From: 1
Plug To: 9
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350011
Layer: 1
Plug From:
Plug To:
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350048
Layer: 3
Plug From: 9
Plug To: 20
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350046
Layer: 1
Plug From: 0
Plug To: 1
Plug Depth UOM: ft

**Method of Construction & Well
Use**

Method Construction ID: 1008349827
Method Construction Code: E
Method Construction: Auger
Other Method Construction:

Method of Construction & Well Use

Method Construction ID: 1008349826
Method Construction Code: 2
Method Construction: Rotary (Convent.)
Other Method Construction:

Pipe Information

Pipe ID: 1008349789
Casing No: 0
Comment:
Alt Name:

Construction Record - Screen

Screen ID: 1008349973
Layer: 1
Slot: 010
Screen Top Depth: 10
Screen End Depth: 20
Screen Material: 5
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 2

Results of Well Yield Testing

Pump Test ID: 1008349790
Pump Set At:
Static Level: 15.0
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Water Details

Water ID: 1008349868
Layer: 1
Kind Code: 8
Kind: Untested
Water Found Depth: 15.0
Water Found Depth UOM: ft

Hole Diameter

Hole ID: 1008349992
Diameter: 6.5
Depth From: 0.0
Depth To: 20.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

Site:

NA PRESTON STREET NORTH lot 29 con 1 ARTHUR ON

Database:
WWIS

Well ID: 7362920
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use:
Final Well Status: Monitoring and Test Hole
Water Type:
Casing Material:
Audit No: OT7JHFQK
Tag: A287480
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src:
Date Received: 7/17/2020
Selected Flag: True
Abandonment Rec:
Contractor: 7190
Form Version: 9
Owner:
Street Name: NA PRESTON STREET NORTH
County: WELLINGTON
Municipality: ARTHUR TOWNSHIP
Site Info: ROLL # 2349000013076030000
Lot: 029
Concession: 01
Concession Name: CON
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 1008349748
DP2BR:
Spatial Status:
Code OB:
Code OB Desc:
Open Hole:
Cluster Kind:
Date Completed: 28-Jan-2020 00:00:00
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 17
East83: 536447.00
North83: 4853997.00
Org CS: UTM83
UTMRC: 4
UTMRC Desc: margin of error : 30 m - 100 m
Location Method: wwr

Overburden and Bedrock
Materials Interval

Formation ID: 1008349917
Layer: 2
Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 74
Mat3 Desc: LAYERED
Formation Top Depth: 1.0
Formation End Depth: 20.0
Formation End Depth UOM: ft

Overburden and Bedrock
Materials Interval

Formation ID: 1008349916
Layer: 1
Color: 6
General Color: BROWN

Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 1.0
Formation End Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350052
Layer: 1
Plug From: 0
Plug To: 1
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350013
Layer: 1
Plug From:
Plug To:
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350054
Layer: 3
Plug From: 9
Plug To: 20
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350053
Layer: 2
Plug From: 1
Plug To: 9
Plug Depth UOM: ft

**Method of Construction & Well
Use**

Method Construction ID: 1008349831
Method Construction Code: E
Method Construction: Auger
Other Method Construction:

**Method of Construction & Well
Use**

Method Construction ID: 1008349830
Method Construction Code: 2
Method Construction: Rotary (Convent.)
Other Method Construction:

Pipe Information

Pipe ID: 1008349793
Casing No: 0
Comment:
Alt Name:

Construction Record - Screen

Screen ID: 1008349975
Layer: 1
Slot: 010
Screen Top Depth: 10
Screen End Depth: 20
Screen Material: 5
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 2

Results of Well Yield Testing

Pump Test ID: 1008349794
Pump Set At:
Static Level: 11.0
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Water Details

Water ID: 1008349870
Layer: 1
Kind Code: 8
Kind: Untested
Water Found Depth: 11.0
Water Found Depth UOM: ft

Hole Diameter

Hole ID: 1008349994
Diameter: 6.5
Depth From: 0.0
Depth To: 20.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

Site: NA PRESTON STREET NORTH lot 29 con 1 ARTHUR ON

Database:
WWIS

Well ID: 7362919
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use:
Final Well Status: Monitoring and Test Hole
Water Type:
Casing Material:

Data Entry Status:
Data Src:
Date Received: 7/17/2020
Selected Flag: True
Abandonment Rec:
Contractor: 7190
Form Version: 9

Audit No: D2WDWUZV
Tag: A287479
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Owner:
Street Name: NA PRESTON STREET NORTH
County: WELLINGTON
Municipality: ARTHUR TOWNSHIP
Site Info: ROLL # 2349000013076030000
Lot: 029
Concession: 01
Concession Name: CON
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 1008349745
DP2BR:
Spatial Status:
Code OB:
Code OB Desc:
Open Hole:
Cluster Kind:
Date Completed: 27-Jan-2020 00:00:00
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 17
East83: 536365.00
North83: 4853685.00
Org CS: UTM83
UTMRC: 4
UTMRC Desc: margin of error : 30 m - 100 m
Location Method: wwr

Overburden and Bedrock

Materials Interval

Formation ID: 1008349915
Layer: 2
Color: 2
General Color: GREY
Mat1: 06
Most Common Material: SILT
Mat2: 28
Mat2 Desc: SAND
Mat3: 74
Mat3 Desc: LAYERED
Formation Top Depth: 1.0
Formation End Depth: 20.0
Formation End Depth UOM: ft

Overburden and Bedrock

Materials Interval

Formation ID: 1008349914
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2:
Mat2 Desc:
Mat3:
Mat3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 1.0
Formation End Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350012
Layer: 1
Plug From:
Plug To:
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350049
Layer: 1
Plug From: 0
Plug To: 1
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350051
Layer: 3
Plug From: 9
Plug To: 20
Plug Depth UOM: ft

**Annular Space/Abandonment
Sealing Record**

Plug ID: 1008350050
Layer: 2
Plug From: 1
Plug To: 9
Plug Depth UOM: ft

**Method of Construction & Well
Use**

Method Construction ID: 1008349829
Method Construction Code: E
Method Construction: Auger
Other Method Construction:

**Method of Construction & Well
Use**

Method Construction ID: 1008349828
Method Construction Code: 2
Method Construction: Rotary (Convent.)
Other Method Construction:

Pipe Information

Pipe ID: 1008349791
Casing No: 0
Comment:
Alt Name:

Construction Record - Screen

Screen ID: 1008349974

Layer: 1
Slot: 010
Screen Top Depth: 10
Screen End Depth: 20
Screen Material: 5
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 2

Results of Well Yield Testing

Pump Test ID: 1008349792
Pump Set At:
Static Level: 12.0
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Water Details

Water ID: 1008349869
Layer: 1
Kind Code: 8
Kind: Untested
Water Found Depth: 12.0
Water Found Depth UOM: ft

Hole Diameter

Hole ID: 1008349993
Diameter: 6.5
Depth From: 0.0
Depth To: 20.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory:

Provincial [AGR](#)

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2020

Abandoned Mine Information System:

Provincial [AMIS](#)

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Oct 2018

Anderson's Waste Disposal Sites:

Private [ANDR](#)

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Aboveground Storage Tanks:

Provincial [AST](#)

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

Government Publication Date: May 31, 2014

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Sep 30, 2021

Borehole:

Provincial [BORE](#)

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2018

Certificates of Approval:

Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Dry Cleaning Facilities:

Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2019

Commercial Fuel Oil Tanks:

Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.

Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Chemical Manufacturers and Distributors:

Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-Jan 31, 2020

Chemical Register:

Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-Sep 30, 2021

Compressed Natural Gas Stations:

Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 -Aug 2021

Inventory of Coal Gasification Plants and Coal Tar Sites:

Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions:

Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Jul 2021

Certificates of Property Use:

Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994 - Sep 30, 2021

Drill Hole Database:Provincial [DRL](#)

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886 - Sep 2020**Delisted Fuel Tanks:**Provincial [DTNK](#)

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

Government Publication Date: May 31, 2021**Environmental Activity and Sector Registry:**Provincial [EASR](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 2011- Sep 30, 2021**Environmental Registry:**Provincial [EBR](#)

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994- Sep 30, 2021**Environmental Compliance Approval:**Provincial [ECA](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011- Aug 31, 2021**Environmental Effects Monitoring:**Federal [EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007***ERIS Historical Searches:**Private [EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jun 30, 2021**Environmental Issues Inventory System:**Federal [EIIS](#)

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event:

Provincial **EMHE**

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

Environmental Penalty Annual Report:

Provincial **EPAR**

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land / water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2020

List of Expired Fuels Safety Facilities:

Provincial **EXP**

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2020

Federal Convictions:

Federal **FCON**

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal **FCS**

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Aug 2021

Fisheries & Oceans Fuel Tanks:

Federal **FOFT**

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2019

Federal Identification Registry for Storage Tank Systems (FIRSTS):

Federal **FRST**

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Fuel Storage Tank:

Provincial **FST**

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Fuel Storage Tank - Historic:

Provincial

[FSTH](#)

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary:

Provincial

[GEN](#)

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Apr 30, 2021

Greenhouse Gas Emissions from Large Facilities:

Federal

[GHG](#)

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013-Dec 2019

TSSA Historic Incidents:

Provincial

[HINC](#)

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks:

Federal

[IAFT](#)

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Fuel Oil Spills and Leaks:

Provincial

[INC](#)

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing is a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Landfill Inventory Management Ontario:

Provincial

[LIMO](#)

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Feb 28, 2019

Canadian Mine Locations:

Private

[MINE](#)

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences:

Provincial [MNR](#)

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Dec 2020

National Analysis of Trends in Emergencies System (NATES):

Federal [NATE](#)

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports:

Provincial [NCPL](#)

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: Dec 31, 2019

National Defense & Canadian Forces Fuel Tanks:

Federal [NDFT](#)

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills:

Federal [NDSP](#)

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal [NDWD](#)

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal [NEBI](#)

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Jun 30, 2021

National Energy Board Wells:

Federal [NEBP](#)

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

[NEES](#)

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory:

Federal

[NPCB](#)

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory:

Federal

[NPRI](#)

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Oil and Gas Wells:

Private

[OGWE](#)

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Feb 28, 2021

Ontario Oil and Gas Wells:

Provincial

[OOGW](#)

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Jan 2021

Inventory of PCB Storage Sites:

Provincial

[OPCB](#)

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013

Orders:

Provincial

[ORD](#)

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Sep 30, 2021

Canadian Pulp and Paper:

Private

[PAP](#)

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014

Parks Canada Fuel Storage Tanks:

Federal

[PCFT](#)

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register:

Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: Oct 2011- Aug 31, 2021

Pipeline Incidents:

Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing in an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Private and Retail Fuel Storage Tanks:

Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water:

Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994 - Sep 30, 2021

Ontario Regulation 347 Waste Receivers Summary:

Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-1990, 1992-2018

Record of Site Condition:

Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.

RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Sep 2021

Retail Fuel Storage Tanks:

Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Sep 30, 2021

Scott's Manufacturing Directory:

Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills:

Provincial SPL

List of spills and incidents made available the Ministry of the Environment, Conservation and Parks. This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Aug 2020

Wastewater Discharger Registration Database:

Provincial [SRDS](#)

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-Dec 31, 2018

Anderson's Storage Tanks:

Private [TANK](#)

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks:

Federal [TCFT](#)

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970 - Dec 2020

Variations for Abandonment of Underground Storage Tanks:

Provincial [VAR](#)

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered underground storage tanks must be removed within two years of disuse; if removal of a tank is not feasible, an application may be sought for a variance from this code requirement.

Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Waste Disposal Sites - MOE CA Inventory:

Provincial [WDS](#)

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 2011- Aug 31, 2021

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial [WDSH](#)

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System:

Provincial [WWIS](#)

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Apr 30, 2021

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

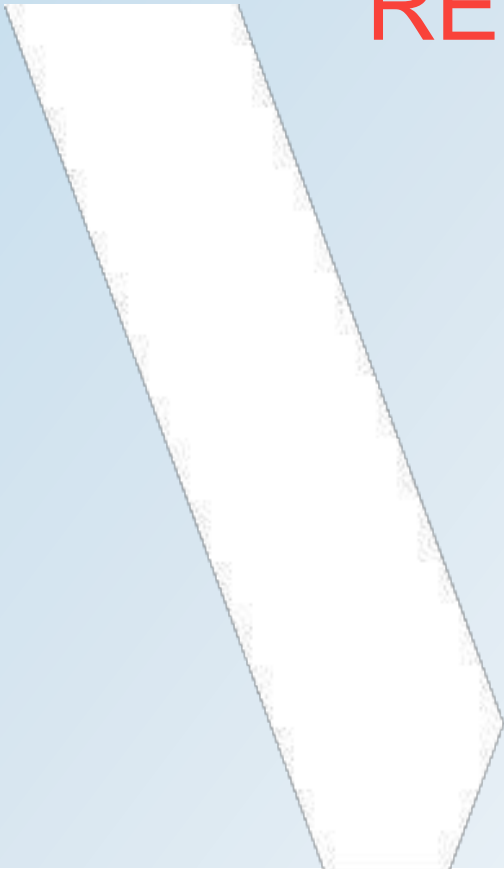
The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX

C

GEOTECHNICAL
REPORTS



GEOTECHNICAL INVESTIGATION

**RECONSTRUCTION OF CONESTOGO RIVER
BRIDGE NO. 6, STRUCTURE B109132
WELLINGTON ROAD 109
ARTHUR, ONTARIO
COUNTY OF WELLINGTON**

CMT Project 21-368(b).R01

PREPARED FOR:

County of Wellington

November 30, 2021





CMT Engineering Inc.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

November 30, 2021

21-368(b).R01

County of Wellington
74 Woolwich Street
Guelph, Ontario
N1H 3T9

Attention: Mr. Joe de Koning

Dear Sir:

**Re: Geotechnical Investigation
Reconstruction of Conestogo River Bridge No. 6, Structure B109132
Wellington Road 109
County of Wellington, Ontario**

As requested, CMT Engineering Inc. conducted a geotechnical investigation at the above-referenced site, and we are pleased to present the enclosed report.

We trust that this information meets your present requirements, and we thank you for this opportunity to have been of service. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

Brandon Figg

Brandon R Figg, C. Tech.

ks

1cc: WSP Canada - Jamie Yeung, P.Eng., Ph.D.

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Drawing 1 – Location Map

Drawing 2 – Survey Drawing Showing Borehole Locations

Appendix A – Borehole Logs

Appendix B – Grain Size Analyses

1.0 INTRODUCTION

The services of CMT Engineering Inc. were retained by Mr. Jamie Yeung, P. Eng., Ph.D. of WSP Canada, to carry out a geotechnical investigation for the proposed Reconstruction of Bridge No. 6, Structure B109132 located on Wellington Road 109 in the County of Wellington, Ontario.

It is understood that the bridge reconstruction is to comprise the removal of the existing concrete parapet walls/railings, and construction of the new bridge abutments, which will be located outside of the existing abutments (which are intended to be left in place). It was also unclear at the time of the investigation if a temporary bridge will be installed adjacent the existing bridge for traffic flow. The location of the structure is shown on Drawing 1.

The purpose of the geotechnical investigation was to assess the existing soil and groundwater conditions encountered in the boreholes. Included in the assessment are the soil classification and groundwater observations, as well as comments and recommendations regarding geotechnical resistance (bearing capacity); serviceability limit states (anticipated settlement); dewatering considerations; site classification for seismic site response; soil properties; recommendations for site grading, excavations and backfilling; pavement design; and a summary of the laboratory results.

The recommendations in this report are solely based on the soil conditions encountered in the boreholes located at the subject site.

2.0 EXISTING SITE CONDITIONS

Wellington Road 109 is a paved two-lane highway with typically steep side slopes down into existing roadside ditches. The existing structure comprises a concrete structure with an approximate span of 32.0 m and approximately 5.1 m from the paved driving surface to the river bottom. The location of the site is shown on Drawing 1.

3.0 FIELD AND LABORATORY PROCEDURES

Prior to the commencement of the field drilling program, public underground service locates (Ontario One Call) were undertaken to ensure that underground utilities would not be damaged, or personnel were injured.

The field investigation was conducted on August 9, 2021 and comprised the advancement of two (2) boreholes (referenced as Borehole 1 and Borehole 2) utilizing a Geoprobe 7822DT drillrig operated by CMT Drilling Inc. Boreholes 1 and 2 were advanced to approximate depths of 9.75 m (32.0 ft) below the ground surface elevation. Borehole 1 was located approximately 3.5 m south and 10.5 m west of the northwest corner of the existing structure, on the northwest side of the existing bridge structure, while Borehole 2 was located approximately 3.7 m south and 5.0 m east of the northeast corner of the existing structure, on the northeast side of the existing bridge structure.

Standard penetration testing and sampling was carried out in the boreholes using 38 mm inside diameter split spoon sampling equipment and an automatic hammer, in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". SPT soil sampling was generally conducted at 0.76 m (2.50 ft) intervals to 3.05 m (10.00 ft), and every 1.52 m (5.00 ft) thereafter, to borehole termination. Macro core (MC5) direct push sampling was generally conducted between the SPT soil samples obtained below 3.05 m (10.00 ft) depth. Technical staff from CMT Inc. observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations.

Representative soil samples from the following boreholes and depths were submitted to the CMT Inc. laboratory in St. Clements, Ontario for grain size analyses:

- Borehole 1: depth – 3.66 m to 4.57 m (12.00 ft to 15.00 ft)
- Borehole 2: depth – 9.14 m to 9.75 m (30.00 ft to 32.00 ft)

The borehole logs are provided in Appendix A. The resulting grain size analyses are presented in Appendix B.

The ground surface elevations (geodetic) at the borehole locations were surveyed by WSP staff and reported to CMT Inc. on November 4, 2021. The ground surface elevations (geodetic) at the borehole locations ranged from approximately 452.69 m to 452.76 m. The locations of the boreholes are shown on Drawing 2.

4.0 SUBSOIL CONDITIONS

The soils encountered in the boreholes are described briefly below with a more detailed stratigraphic description provided on the borehole logs in Appendix A. The following paragraphs have been simplified into terms of major soil strata. The soil boundaries indicated have been inferred from non-continuous samples and observations of sampling and drilling resistance and typically represent transitions from one soil type to another rather than exact planes of geological change. Further, the subsurface conditions are anticipated to vary beyond the borehole locations.

4.1 Asphaltic Concrete

Asphaltic concrete (asphalt) was encountered at the surface of both boreholes. The thickness of the asphalt at the borehole locations ranged from approximately 125 mm to 325 mm (average 225 mm). The asphalt thickness is anticipated to vary throughout the project area.

4.2 Granular Fill

Compact to very dense, brown granular fill was encountered underlying the asphalt in both boreholes. The thickness of the granular fill at the borehole locations ranged from approximately 170 mm to 850 mm (average 510 mm). The thickness of the granular fill is anticipated to vary throughout the project area.

4.3 Concrete

A 125 mm thick layer of concrete was encountered underlying the granular fill in Borehole 1. It is unknown if this concrete is associated with the construction of the existing bridge, and as such, it should be anticipated that more concrete may be encountered during construction.

4.4 Silty Sand Fill

Dark brown silty sand fill was encountered underlying the concrete at Borehole 1 and underlying the buried topsoil in Borehole 2. The silty sand fill was considered to be loose, with SPT N-values ranging from 6 to 9 blows per 0.30 m (average 8 blows per 0.30 m). The silty sand fill was considered to be moist, with moisture contents ranging from about 15.5% to 27.8% (average 21.7%).

4.5 Buried Topsoil

Dark brown, silty organic topsoil was encountered below the silty sand fill at Borehole 1 and underlying the granular fill at Borehole 2. The thickness of the buried topsoil ranged between approximately 1,050 mm and 1,870 mm (average 1,460 mm). The buried topsoil was considered to be very loose, with SPT N-values ranging from 1 to 2 blows per 0.30 m (average 2 blows per 0.30 m). The topsoil was considered to be moist, with moisture contents ranging from about 26.9% to 43.8% (average 35.4%). It should be expected that the topsoil thickness may vary throughout the project area. Materials noted as topsoil in this report were classified based on visual and textural evidence. Testing of organic content or for other nutrients was not carried out.

4.6 Sandy Silt Till

Brown sandy silt till, with some clay and trace gravel was encountered underlying the buried topsoil in Borehole 1 and underlying the fill soils in Borehole 2. The sandy silt till was considered to be loose to very dense, with SPT N-values ranging from approximately 7 to greater than 100 blows per 0.30 m (average 54 blows per 0.30 m). The sandy silt till

was considered to be moist, with moisture contents ranging from about 5.5% to 7.9% (average 6.7%).

4.7 Groundwater

Groundwater was not observed within the boreholes during the investigation. Although the existing sandy silt till soils encountered in the boreholes are typically low in permeability and have the potential to create perched water conditions, these perched conditions would be expected to occur near the interface of the more permeable upper soils and the less permeable lower soils. It should be noted that groundwater conditions (particularly perched water) are generally dependent on the water level of the river, amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume. Groundwater levels and very moist to wet soil conditions encountered during construction could make some excavations difficult. It should be expected that caving or sloughing of the excavation walls will occur, especially when excavating into very moist, wet or saturated soils.

The following table summarizes the groundwater observations at each borehole:

Borehole No.	Ground Surface Elevation (m)	Estimated Zone of Wet to Saturated Zones (m)	Bottom of Borehole Elevation (m)
1	452.76	452.20 to 449.42	443.01
2	452.69	451.51 to 449.64	442.94

Recommendations with respect to dewatering conditions are provided in Section 5.7 of this report.

5.0 DISCUSSION AND RECOMMENDATIONS

This section of the report provides CMT Inc.'s interpretation of the factual geotechnical data obtained during the investigation and is intended for the guidance of the owner and design engineer. Where comments are made on construction, they are provided only to highlight those aspects which could affect the design of the project. Contractors bidding on or undertaking the work should make their own independent interpretation of the factual subsurface information provided as it affects their proposed construction means and methods, equipment selection, scheduling, pricing, and the like.

Utilizing the information gathered during the geotechnical investigation and assuming that the borehole information is representative of the subsoil conditions throughout the site, the following comments and recommendations are provided.

5.1 Serviceability and Ultimate Limit Pressure

Based on the information obtained from the boreholes, the following table provides a summary of the estimated geotechnical reaction at the Serviceability Limit State (SLS) and the factored geotechnical resistance at the Ultimate Limit State (ULS) at the various elevations, including soil type:

BH No.	Ground Surface Elevation (m)	SLS kPa (psf)	ULS kPa (psf)	Estimated Highest Founding Elevations (m)	Depth Below Existing Grade to Founding Elevation (m)	Soil Type
1	452.76	250 (5,000)	325 (6,500)	449.42 to 443.01 (termination)	3.34	Sandy Silt Till
2	452.69	250 (5,000)	325 (6,500)	448.12 to 442.94 (termination)	4.57	Sandy Silt Till

Note: The founding soils are recommended to be in a drained state at the time of construction.

Based on the bearing capacities and elevations provided in the table above, suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 250 kPa (5,000 psf) at SLS and 325 kPa (6,500 psf) at ULS can be found below an approximate depth of 3.34 m at Borehole 1 and below an approximate depth of 4.57 m at Borehole 2.

Provisions for site dewatering and soil stabilization through the placement of a crushed clear stone base or concrete mud mat (as required) should be included in the tender documents.

It is recommended that the founding soils be assessed at the time of construction by qualified geotechnical personnel in order to confirm their founding suitability. Should the soils be unsuitable to support the foundation at the proposed founding elevations, the unsuitable soils must be further subexcavated and either the footings be lowered to found on approved soils or the low bearing soil may be replaced with imported granular structural fill. Should footings be designed to be constructed at elevations higher than the elevations indicated in the table above, then structural fill will be required in order to achieve the design grades for the proposed foundations. The serviceability limit pressure for good quality structural fill (OPSS 1010 Granular 'A', OPSS 1010 Type II or Type III Granular 'B') placed and compacted in accordance with Section 5.5 of this report is estimated to be 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf). Alternatively, lean concrete fill could be used to achieve the design grades for the proposed foundations.

It should be noted that the footings require a minimum of 1.2 m (4.0 ft) of soil cover to provide against frost action. Additionally, the footings are recommended to be constructed at least 1.2 m below the maximum scour depth.

With respect to the Serviceability Limit State (SLS), the total differential footing settlements are not expected to exceed the generally acceptable limits of 25 mm (1") and 19 mm (3/4") respectively, assuming a minimum footing width of 0.6 m.

5.2 Seismic Site Classification

The site classification for seismic response in Table 4.1.8.4 of the 2012 Ontario Building Code relates to the average properties of the upper 30.0 m of strata. The information obtained in the geotechnical field investigation was gathered from the upper 11.28 m of strata. Based on the information gathered in the geotechnical field investigation, the site classification for seismic site response would be considered Site Class D (stiff soil) for structures founded on the native soils at the recommended founding elevations provided in Section 5.1 of this report. For foundations constructed on structural fill, placed in accordance with Section 5.5 of this report, the site classification for seismic site response would also be considered Site Class D (stiff soil).

The structural engineer responsible for the design of the structure should review the earthquake loads and effects.

5.3 Existing Bridge Demolition and Removal or Relocation of Existing Services

All concrete components of the existing structure, as well as all existing backfill material, must be removed from areas of the proposed replacement structure. The excavations must be inspected and backfilled (as required) according to the procedures outlined in Section 5.5 of this report. It is recommended that imported sand and gravel (OPSS 1010 Type II or III Granular 'B' or an approved alternative) be placed as structural fill to backfill the demolition area (as required).

Any existing underground services (if present) that may be located within the proposed new structure envelope should be removed/relocated. If left in place, the location of existing services must be reviewed to ensure that they do not conflict with proposed foundation locations. All terminated pipes must be completely sealed with watertight mechanical covers, concrete or grout at termination points to prevent the migration of soils into pipe voids which can result in potential settlement. All existing trench backfill material associated with any existing underground services must be subexcavated and the subsequent excavation should be backfilled with approved soils placed in accordance with Section 5.5 of this report.

5.4 Excavations

All excavations must be carried out in accordance with Ontario Regulation 213/91 (Reg 213/91) of the Occupational Health and Safety Act and Regulations for Construction Projects.

Type 3 Soils – The existing fill materials and the native soils encountered in the boreholes, in a drained state (not saturated) would be classified as Type 3 soils under Reg 213/91 and must be sloped to the bottom of the excavation at a minimum gradient of 1 horizontal to 1 vertical. Soils that are underlain by Type 4 soils that are exposed in the excavation or soils that are in a saturated condition must be treated as Type 4 soils (addressed below).

Type 4 Soils - In general, the saturated sand soils would be classified as Type 4 soils under Reg 213/91. Type 4 soils must be sloped from the bottom of the excavation at a minimum gradient of 3 horizontal to 1 vertical.

If it is not practical to excavate according to the above requirements, then a trench support system (designed in accordance with the Ontario Health and Safety Act Regulations) may be utilized. When using a temporary trench support system consisting of trench boxes to reduce the lateral extent of the excavations, it should be noted that the support system is intended primarily to protect workers as opposed to controlling lateral soil movement. Any voids between the excavation walls and the support system should be immediately filled to reduce the potential for loss of ground and to provide support to existing adjacent utilities and structures, and it is recommended that the excavation be carried out in short sections, with the support system installed immediately upon excavation completion.

Sloughing/caving of the excavation walls should be expected when excavating into very moist, wet and saturated soils. As such, it may be necessary to increase the width of the excavation to accommodate sloughing/caving soils.

5.5 Structural Fill

Currently, the design founding elevation of the replacement structure is not available. Following the subexcavation of all fill, any organic soils that may be encountered, and any loose, native soils deemed unsuitable to support the design bearing capacity, the exposed subgrade must be thoroughly inspected by qualified geotechnical personnel and any soft or unstable areas observed must be subexcavated and replaced with approved fill materials.

Any structural fill materials (if required) should be placed according to the following procedures:

- Prior to placement of any structural fill, the subgrade for the proposed foundations must be prepared large enough to accommodate a 1:1 slope commencing a distance of 1.0 m beyond the outside edges of the proposed foundations down to approved, competent native founding soils;
- If saturated founding soil conditions are encountered during construction, it will be necessary to construct either a crushed clear stone granular base (meeting the gradation and physical property requirements of OPSS 1004) or a concrete mud mat in order to prevent disturbance of the founding soils during construction. The contractor should have the crushed clear stone or concrete available for placement immediately following the completion of the excavation and subsequent inspection and approval by qualified geotechnical personnel;
- Imported granular fill (OPSS 1010 Type II or Type III Granular 'B' is recommended for use as structural fill) can be compacted utilizing adequate heavy vibratory smooth drum or padfoot compaction equipment (compaction with padfoot equipment requires that structural fill be placed a minimum 0.3 m above the design footing grade in order to account for the disturbance of the founding soils from the pads on the compaction equipment, or the final lift at the founding elevation can be compacted utilizing a smooth drum vibratory compactor or a large diesel vibratory plate compactor). Soils approved for use as structural fill must be placed in loose lifts not exceeding 0.3 m (12") in depth for granular soils (recommended fill materials) or the capacity of the compactor (whichever is less);
- Approved fill materials must be at suitable moisture contents to achieve the specified compaction. The saturated native soils observed in the borehole would require extensive air-drying in order to achieve the specified density and therefore, are not recommended for use as structural fill. Soil moisture will also be dependent on weather conditions at the time of construction;
- Approved structural fill materials that will support the structure must be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD);
- Approved bulk fill (backfill and bulk fill that will not support footings) must be compacted to a minimum 95% SPMDD.

All approved structural fill placed according to the above procedures is considered capable of supporting foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS.

It is imperative that when cohesive soils (clay and/or silt) are utilized as fill, the material must be broken down (pulverized) to minimize void space and reduce the potential for settlement. Problems associated with compacting cohesive soils include the potential for long-term settlement due to excessive void space caused by the generally blocky structure of the excavated soils. Therefore, the contractor must have equipment on-site that can effectively break down the cohesive excavated soil into workable sizes (as required). Backfilling utilizing this material must be performed in thin lifts with considerable compactive effort applied, thereby reducing the void space and minimizing long-term settlement. This process could be difficult and time-consuming. Based on the above, any cohesive silt/clayey silt soils should not be utilized as structural fill.

5.6 Foundation Subgrade Preparation

The native soils encountered in the boreholes are sensitive to changes in moisture content and can become loose/soft if the soils are subjected to additional water or precipitation. The native subgrade soils could also be easily disturbed if traveled on during construction. Once they become disturbed, they are no longer considered adequate for the support of shallow foundations. To ensure and protect the integrity of the founding soils during construction operations, the following is recommended:

- It is recommended to construct a concrete mud slab or crushed clear stone base to protect the structural integrity of the founding soils when cast-in-place footings are proposed. In the event that precast structures are proposed, a clear stone base is suggested in order to allow for more efficient levelling;
- During construction, the subgrade should be sloped or ditched (as required) to the outside of the structure footprint in the excavation to promote surface drainage of rainwater or seepage and the collected water should be pumped out of the excavation. It is critical that all water be controlled (not allowed to pond) and that the subgrade and foundation preparation commence in dry conditions;
- Construction equipment travel and foot traffic on the founding soils should be minimized;
- If construction is to be undertaken during subzero weather conditions, the founding native soils and any potential fill materials must be maintained above freezing;
- Prior to pouring concrete for the footings, the footing area must be cleaned of all disturbed or caved materials;
- The foundation formwork and concrete should be installed as soon as practical following the excavation, inspection and approval of the founding soils. The longer that the excavated soils remain open to weather conditions and groundwater seepage, the greater the potential for construction problems to occur;

- If it is expected that the founding soils will be left open to exposure for an extended period of time, it is recommended that a 75 mm concrete mud slab be poured in order to protect the structural integrity of the founding soils.

5.7 **Construction Dewatering**

Seepage control requirements and groundwater conditions during construction are generally dependent on the water level of the river, amount of precipitation, control of surface water, the time of year, the area of work on the site, as well as the depth of the excavations, and can fluctuate significantly in elevation and volume. As such, it is critical that provisions for site dewatering be part of the bridge reconstruction process. Seepage should generally be adequately controlled using conventional construction dewatering techniques such as ditching (as required) and pumping from sump pits. It may be required to excavate a larger working area in order to facilitate effective drainage of founding soils. Should heavy seepage be encountered, it may be necessary to increase the number of pumps during construction to effectively drain larger construction areas. Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils. It should also be expected that pumps and hoses may plug up with fine-grained soils, resulting in the requirement for continuous maintenance.

Dewatering works should be designed and constructed in accordance with requirements of regulatory agencies such as the Ministry of Natural Resources and the Ministry of the Environment, Conservation and Parks. Dewatering should be performed in accordance with OPSS 517 and the control of water must be in accordance with OPSS 518. It is the responsibility of the contractor to propose a suitable dewatering system based on the groundwater elevation at the time of construction. Collected water should discharge a sufficient distance away from the excavation to prevent re-entry. Sediment control measures must be installed at the discharge point of the dewatering system to avoid any potential adverse impacts on the environment.

Seasonal variations in the groundwater should be expected, with higher levels generally occurring during the wet weather seasons in the spring and fall, and lower levels occurring during dry weather conditions. Therefore, in order to minimize the amount of water encountered during construction, it is recommended that the construction be performed during the typically drier summer months. It will be necessary to utilize a temporary dam technique in order to divert the water away from the construction area and prevent any surface water from flowing into the excavations. Products such as Nilex Aqua Barrier are commonly used for this application. Aqua Barrier is a water-inflated dam system that acts as a barricade and prevents water from entering the work area. The controlled water is then pumped around the construction area.

5.8 Wing Walls

5.8.1 Culvert/Abutments and Wing Wall Backfilling

To promote drainage behind the abutments and wing walls (if constructed) and alleviate hydrostatic pressure, the structures are to be backfilled with a free-draining granular material such as Granular 'B' (OPSS 1010), extending out a minimum lateral distance of 1200 mm from the wall. The backfill should be placed in accordance to OPSD 3101.150. It should be noted that the soils that are expected to be encountered in the excavations are not considered to be free-draining.

The backfill material used against the structure walls must be placed so that the allowable lateral earth pressures on the walls are not exceeded. Backfilling operations should be carried out with the following minimum requirements:

- Adequate vibratory compaction equipment (suited to soil type and proximity to walls) should be used to compact the soils;
- Loose lift thicknesses should not exceed 0.3 m (12") for granular soils or the capacity of the compactor (whichever is less);
- The soils must be at suitable moisture contents to achieve compaction to a minimum 100% SPMDD underlying the pavement structure;
- Backfill materials beyond the 1200 mm distance from the structure walls and below the frost taper may consist of approved excavated native soils that are at suitable moisture contents to achieve the specified compaction and with no particles greater than 250 mm and no topsoil or other deleterious materials.

5.8.2 Abutment and Wing Wall Drainage

Drainage behind abutments and wing walls (if constructed) is of paramount importance. As such, it is recommended to install wall drains (as required) and a drainage system in accordance with OPSD 3101.150. It is recommended to install minimum 100 mm diameter perforated drainage tiles to collect and redirect water at the base of the abutments and wing walls. The perforated drainage tiles should be installed at a depth that provides optimal drainage but must also allow for positive drainage towards a gravity outlet. The drainage tiles should be wrapped completely in a geotextile filter fabric such as Terrafix 270 or equivalent. The drainage tiles will reduce the potential for future hydrostatic pressures acting on the structure. A rodent guard should be installed at the outlet(s).

5.8.3 Frost Tapers

Frost tapers must be constructed in order to reduce the effects of differential frost action in the bridge/culvert approaches. The frost tapers should be constructed in accordance with OPSD 3101.150. According to the OPSD requirements, the required length of the frost taper must be at least 6.0 m, as measured from the outer limit of the culvert/abutment backfill. The frost taper must be constructed on both sides utilizing the OPSS 1010 granular material that is used for the culvert/abutment and wing wall backfill.

5.8.4 Lateral Earth Pressure

Permanent subsurface walls are to be designed to resist lateral earth pressures, which can be calculated by the following:

$$P = K (\gamma h + q)$$

where: P = horizontal pressure at depth

h = depth of soil to footing (m)

K = earth pressure coefficient

γ = bulk unit weight of soil (kN/m³)

q = complete surcharge loading (kPa) (kN/m²)

This equation assumes that the backfill is free-draining and that an adequate drainage system with a positive drainage outlet have been placed below the footing level.

Computation should be performed in accordance with the latest edition of the Canadian Highway Bridge Design Code. Soil properties presented in the following section should be utilized in the computation.

5.8.5 Soil Design Parameters

The following table provides the estimated soil design parameters for imported granular fill, as well as the existing native soils encountered on-site. It should be noted that earth pressure coefficients (K_a , K_p , K_o) provided are for flat ground surface conditions and will differ for areas with slopes or embankments.

The estimated soil design parameters can be utilized for the design of perimeter shoring, foundations and retaining walls, as required:

Soil Type	Soil Density (kg/m ³)	Friction Angle (Degree)	Coefficient of Active Pressure (K _a)	Coefficient of Passive Pressure (K _p)	Coefficient of At-Rest Pressure (K _o)	Coefficient of Friction (μ)
Imported Granular 'A'/ Granular 'B' (OPSS 1010)	2,100	34°	0.28	3.54	0.44	0.45
Existing Fill	1,800	28°	0.36	2.77	0.53	0.35
Sandy Silt Till	1,850	32°	0.31	3.25	0.47	0.41

5.9 Service Pipe Bedding

The native soils encountered in the geotechnical investigation are generally considered suitable for the indirect support of site service pipes (if installed). Should instability due to saturated soil conditions be encountered, it may be necessary to increase the thickness of the granular base and utilize 19 mm clear stone to create an adequate supporting base for the service pipes and/or manholes.

Pipe embedment, cover and backfill for both flexible and rigid pipes should be in accordance with all current and applicable OPSD, OPSS and OBC standards and guidelines and as follows:

Flexible Pipes – The pipe bedding should be shaped to receive the bottom of the pipe. If necessary, pipe culvert frost treatment should be undertaken in accordance with OPSD-803.031. The trench excavations should be symmetrical with respect to the centreline of the pipe. The granular material placed under the haunches of the pipe must be compacted to 95% SPMDD prior to the continued placement and compaction of the embedment material. The homogeneous granular material used for embedment should be placed and compacted uniformly around the pipe. Should wet conditions be encountered at the base of the trench, then the pipe bedding should consist of 19 mm clear stone (meeting OPS Specifications) wrapped completely in a geotextile fabric such as Terrafix 270 or equivalent.

Rigid Pipes - In general, the pipe installation recommendations for rigid pipes are the same as those for flexible pipes, except that the minimum bedding depth below a rigid pipe should be $0.15D$ (where D is the pipe diameter). In no case should this dimension be less than 150 mm or greater than 300 mm.

Any service pipes that are not provided with sufficient frost coverage must be protected with the necessary equivalent thermal insulation. The general contractor is responsible to protect service piping from damage by heavy equipment.

5.10 Pavement Design

The existing granular base was not tested with respect to OPSS 1010 gradation requirements for Granular 'B'; however, typically granular base materials that have been in place over a prolonged period of time do not meet the gradation requirements of OPSS 1010 and are not generally considered suitable for reuse in the new pavement structure. In most cases, the materials exceed the allowable amount of fine soils (materials passing the #200 sieve). The elevated fines content can generally be attributed to mechanical breakdown of the aggregate which occurs over time due to vehicular traffic as well as freeze/thaw cycles. As such, it is recommended that imported OPSS 1010 Granular 'B' and OPSS 1010 Granular 'A' materials be utilized in any new pavement structure. It is recommended that the existing granular base be utilized as bulk fill, as required.

The native subgrade soils are sensitive to changes in moisture content and may become loose or soft if the soils are subject to inclement weather and seepage or severe drying. Furthermore, the subgrade soils could be easily disturbed if traveled on during construction. As such, where this material will be exposed, it is recommended that the granular subbase be placed immediately upon completion and inspection of the subgrade preparation to protect the structural integrity of the subgrade soils.

Prior to placement of the granular subbase, the subgrade soils should be proof-rolled, and any soft or unstable areas observed should be subexcavated and replaced with suitable drier materials, compacted to a minimum of 95% SPMDD. Frost tapers must be constructed as per Section 5.8.3 of this report.

Should wet conditions be encountered during construction, site assessments may be required to determine what options can be undertaken to construct a modified pavement base. These options may include subexcavation of wet soils and increasing the thickness of the granular base, the use of reinforcing geotextiles and/or geogrids, or a combination of all.

The subgrade should be graded smooth and be free of depressions with a minimum grade of 3% towards the roadside ditch.

The vegetation on the existing shoulder would be expected to impede drainage of the granular base/subbase as well as surface drainage which can result in ponding of surface water (rain as well as melted snow and ice). In order to improve drainage of the road structure, it is recommended that, if feasible, the granular subbase should daylight in the shoulder rounding which should be free of vegetation; the granular shoulder should also be sloped at 6% to the rounding breakpoint, all in accordance with OPSD 200.010,

OPSD 206.010 and/or OPSD 209.010. Consideration must be given in the road design to ensure that the gravel shoulder rounding is not subject to erosion by excessive overland flow of surface water.

It is assumed that the road may be subjected to both heavy loading (delivery trucks, school buses, tractors, snow removal and maintenance equipment, and emergency vehicles), as well as light passenger vehicles.

Considering anticipated loading and the frost-susceptibility of the subgrade soils, if the reconstructed road will receive an asphalt driving surface, the following pavement design is recommended:

Material	Recommended Thickness (Heavy Traffic)
Asphaltic Concrete	HL3 - 50 mm (2.0") HL4 or HL8 - 100 mm (4.0") (placed in 2 x 50 mm lifts)
Granular 'A' Base (OPSS 1010)	150 mm (6.0")
Granular 'B' Subbase (OPSS 1010)	450 mm (18.0")

The granular subbase material and frost tapers must be compacted to 100% SPMDD. Asphaltic concrete should be supplied, placed and compacted to a minimum 92.0% Marshall maximum relative density in accordance with OPSS 1150 and OPSS 310.

Construction joints in the surface asphalt must be offset a minimum of 150 mm to 300 mm (6" to 12") from construction joints in the binder asphalt so that longitudinal joints do not coincide.

In areas where new asphalt will abut the existing asphalt, it is recommended that any joints in the existing asphalt be sawcut in a straight line prior to being milled to a depth of 40 mm and a width of 150 mm as per OPSD 509.010. It is recommended that a tackcoat in conformance with OPSS 308 be applied to the edge and surface of all milled asphalt prior to placement of new asphalt.

The road should be designed to ensure that water will not pond on the road surface or road edge. It is imperative that a proper spillway be constructed to ensure that erosion of the shoulder rounding does not occur at all locations where surface flow is directed off the road surface and into the ditch.

Given that it is anticipated that only a portion of the roadway associated with the bridge replacement will be repaired, if the pavement structure presented above differs significantly from the existing pavement structure encountered on site, please contact CMT Inc. for further recommendations.

5.11 Chemical Analysis/Excess Soil Management

5.11.1 Chemical Testing NOT Undertaken

Generally, if surplus soils are to be exported off-site, it will be necessary to perform chemical analysis of the soils. Chemical analysis was not undertaken as part of this geotechnical investigation. Should chemical analysis tests be required, the required tests vary and will be dependent on the disposal site utilized by the general contractor.

5.11.2 Leachate Testing Requirement

If soils are transported off-site, additional chemical testing may be required. The extent of the leachate testing will be determined by the results of the initial chemical testing as well as the requirements of the disposal site.

When transporting soils off-site, the following is recommended:

- All chemical analyses and environmental assessment reports must be fully disclosed to the receiving site owners/authorities, whom must agree to receive the material;
- An environmental consultant must confirm the land use at the receiving site is compatible to receive the material;
- An environmental consultant must monitor the transportation and placement of the materials to ensure that the material is placed appropriately at the pre-approved site;
- The excess materials may not be transported to a site that has previously had a Record of Site Condition (RSC) filed, unless the material meets the criteria outlined in the RSC.

It should be noted that landfill sites will generally only accept laboratory test results that have been completed within 30 days of exporting. Therefore, it is recommended that provisions for chemical analysis be included in the tender documents. It should also be noted that the laboratory testing generally takes five (5) working days to process with a regular turnaround time.

6.0 SITE INSPECTIONS

Qualified geotechnical personnel should supervise excavation inspections as well as compaction testing for structural filling, site grading and site servicing. This will ensure that footings are founded in the proper strata and that proper material and techniques are used and the specified compaction is achieved. CMT Engineering Inc. would be pleased to review the design drawings and provide an inspection and testing program for the construction of the proposed development.

7.0 LIMITATIONS OF THE INVESTIGATION

The recommendations made in this report are in accordance with our present understanding of the project. We request that we be permitted to review our recommendations when the drawings and specifications are complete, or if the proposed construction should differ from that mentioned in this report.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments are based on the results obtained at the test locations only. It is therefore assumed that these results are representative of the subsoil conditions across the site. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations.

It should be noted that this report specifically addresses geotechnical aspects of the project and does not include any investigations or assessments relating to potential subsurface contamination. As such, there should be no assumptions or conclusions derived from this report with respect to potential soil or water contamination. Soil or water contamination is generally caused by the presence of xenobiotic (human-made) chemicals or other alteration processes in the natural soil and groundwater environment. If necessary, the investigation, assessment and rehabilitation of soil and water contaminants should be undertaken by qualified environmental specialists.

The samples obtained during the geotechnical investigation will be stored for a period of three months, after which time they will be disposed of unless alternative arrangements are made.

This report is intended solely for the client named. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the reliability of such third parties. The factual data, interpretation, and recommendations in this report pertain to a specific project as described in this report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, deviates from the assumptions stated herein, CMT Inc. should be given an opportunity to confirm that the recommendations are still valid. The subject geotechnical exploration and this report address only the geotechnical aspects of the proposed project; potential environmental impacts or related issues are beyond the defined scope of this work and have not been addressed.

We trust that this report meets with your present requirements. Should you have any questions, please do not hesitate to contact our office.

Prepared by:

Brandon Figg

Brandon R Figg, C. Tech.
Senior Soil Technician

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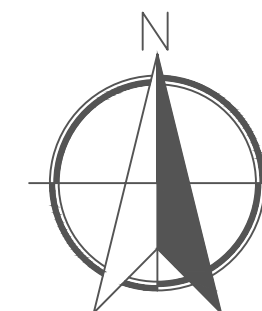
Reviewed by:

Nathan Chortos, P.Eng.
Senior Engineer



NOTES:

1. BASE MAP PROVIDED BY GOOGLE MAPS



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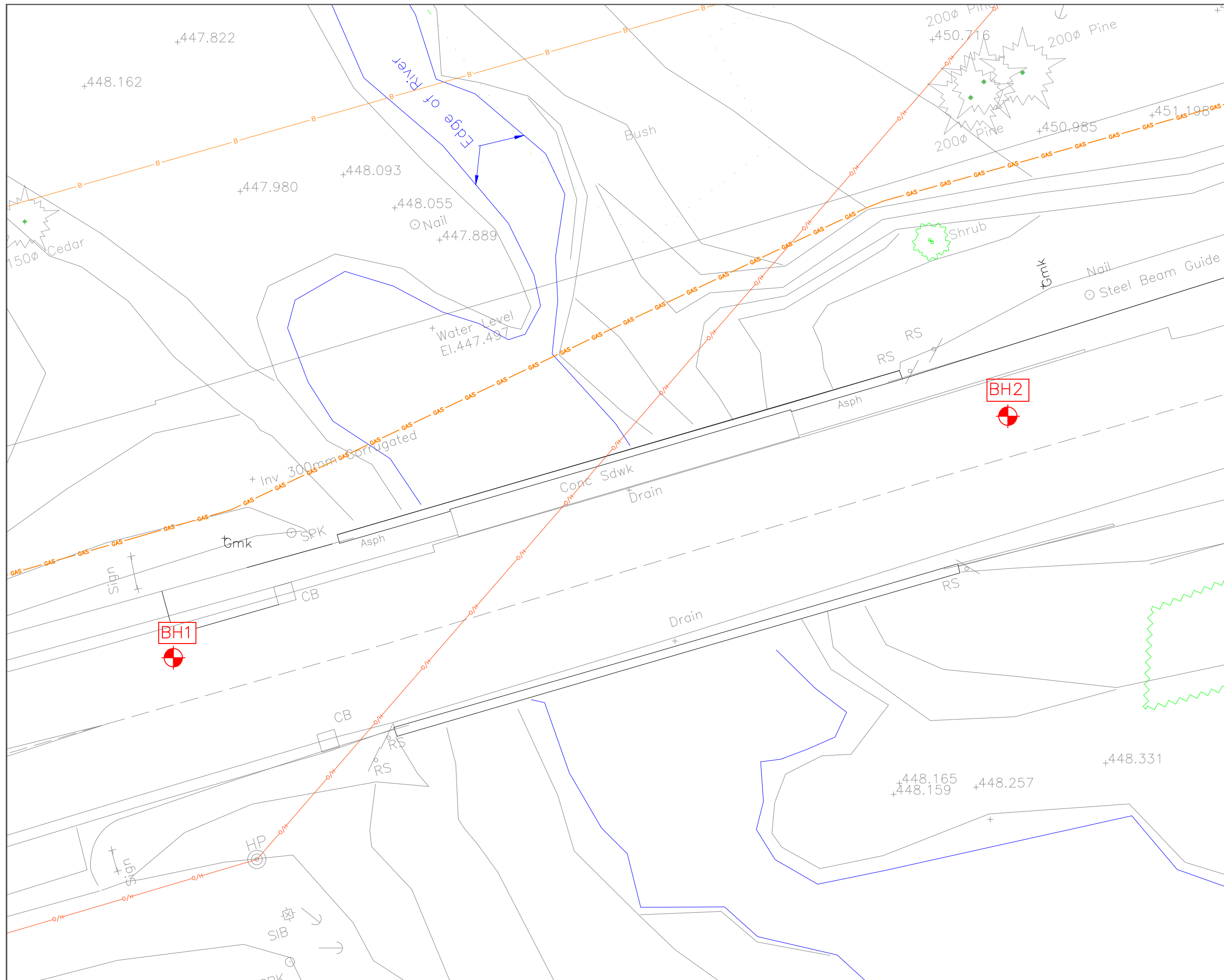
REVISIONS

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PROJECT:
 BRIDGE RECONSTRUCTION
 Wellington Road 109,
 Arthur, Ontario

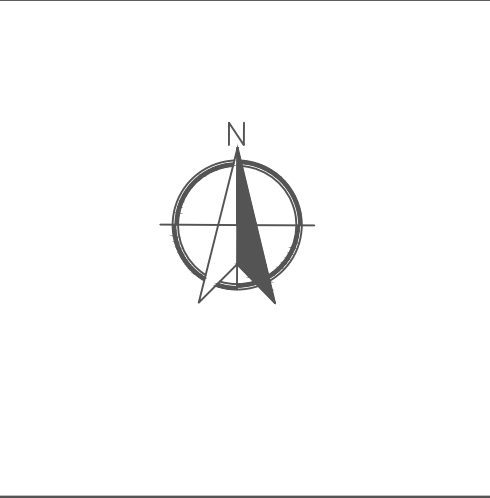
DRAWING
 TITLE:
 SITE LOCATIONS MAP

PROJECT NO.: 21-368(b)	DATE: November 16, 2021
SCALE: N.T.S.	DRAWING NO. 1



NOTES:
 Drawing provided by WSP.

Legend
 CMT Borehole (2021)



NO.	DESCRIPTION	DATE

REVISIONS

 CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
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PROJECT:
 Reconstruction of Bridge
 B109132
 Wellington Road 109,
 Arthur, Ontario

DRAWING TITLE:
 SURVEY DRAWING SHOWING
 BOREHOLE LOCATIONS

PROJECT NO.: 21-368(b) **DATE:** November 16, 2021

SCALE: N.T.S. **DRAWING NO.:** 2

APPENDIX A

BOREHOLE LOGS

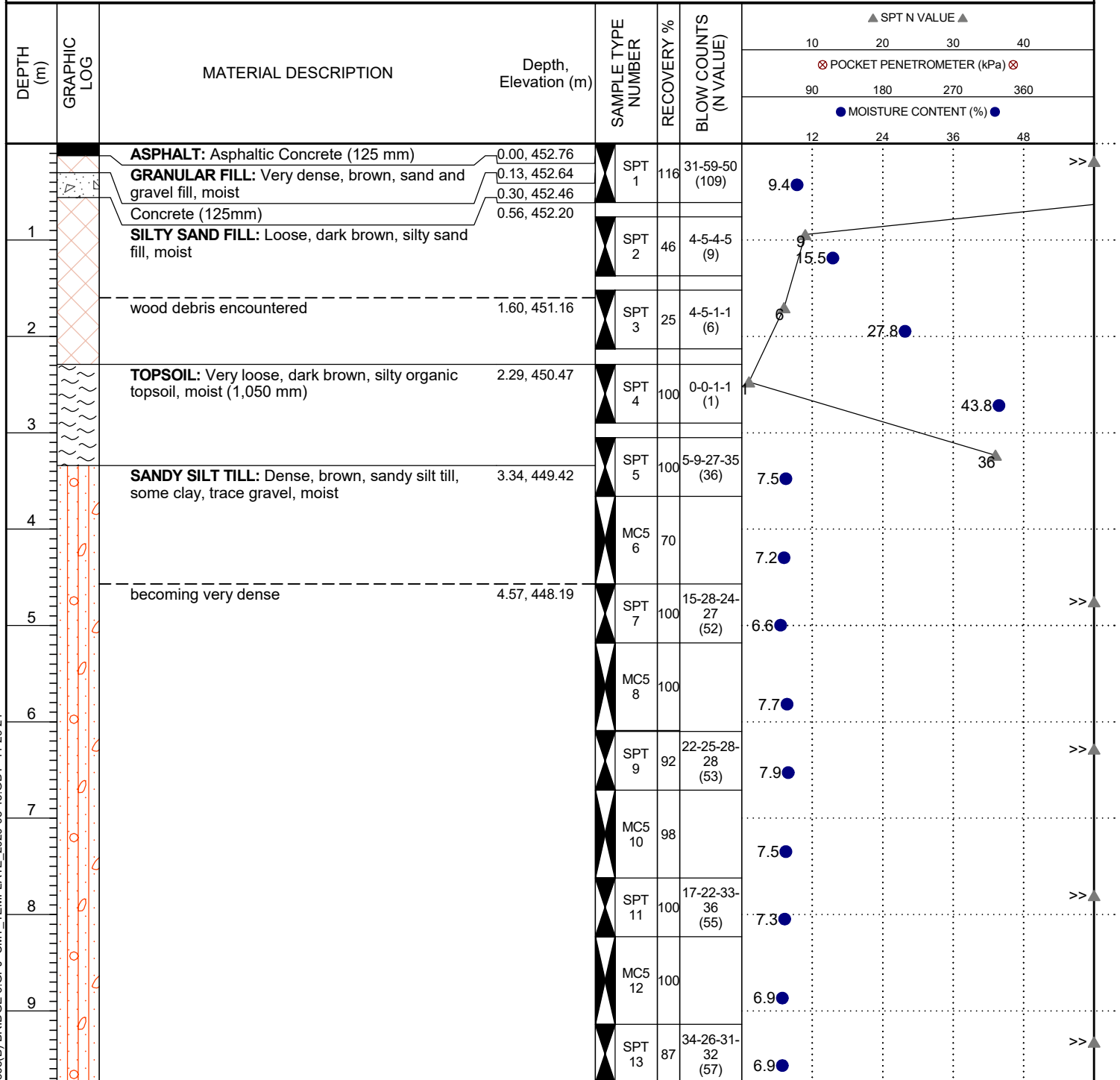


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BOREHOLE NUMBER BH1

PROJECT: Reconstruction of Bridge B109132
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 452.76 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(b)
DRILLING DATE: 8-9-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT



Caving was encountered upon completion of the borehole at a depth of approximately 9.45 m (El. 443.31 m) below ground surface.
 Bottom of borehole at 9.75 m, Elevation 443.01 m.

BOREHOLE LOG2 21-368(B) BRIDGE 6.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-29-21



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BOREHOLE NUMBER BH2

PROJECT: Reconstruction of Bridge B109132
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 452.69 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(b)
DRILLING DATE: 8-9-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
0.00	ASPHALT	Asphaltic Concrete (325 mm)	452.69	SPT 1	187	43-51	4.5			
0.33	GRANULAR FILL	Compact to dense, brown, sand and gravel fill, moist	452.37							
1.18	TOPSOIL	Very loose, dark brown, silty organic topsoil, moist (1,870 mm)	451.51	SPT 2	100	8-14-6-2 (20)	4.6		20	
1.18				SPT 3	100	1-1-1-1 (2)	2			
1.18				SPT 4	95	0-0-1-7 (1)				
3.05	SILTY SAND FILL	Loose, dark brown, silty sand fill, moist	449.64	SPT 5	100	1-1-6-12 (7)	7			
3.33	SANDY SILT TILL	Loose, brown, sandy silt till, some clay, trace gravel, moist	449.36	MC5 6	100		7.9			
4.57		becoming very dense	448.12	SPT 7	87	15-50/0.08	7.8			>>
				MC5 8	100		7.2			
				SPT 9	100	50/0.13	5.5			>>
				MC5 10	100		7.2			
				SPT 11	100	28-50/0.13	6.3			>>
				MC5 12	100		6.9			
				SPT 13	167	50	6.5			

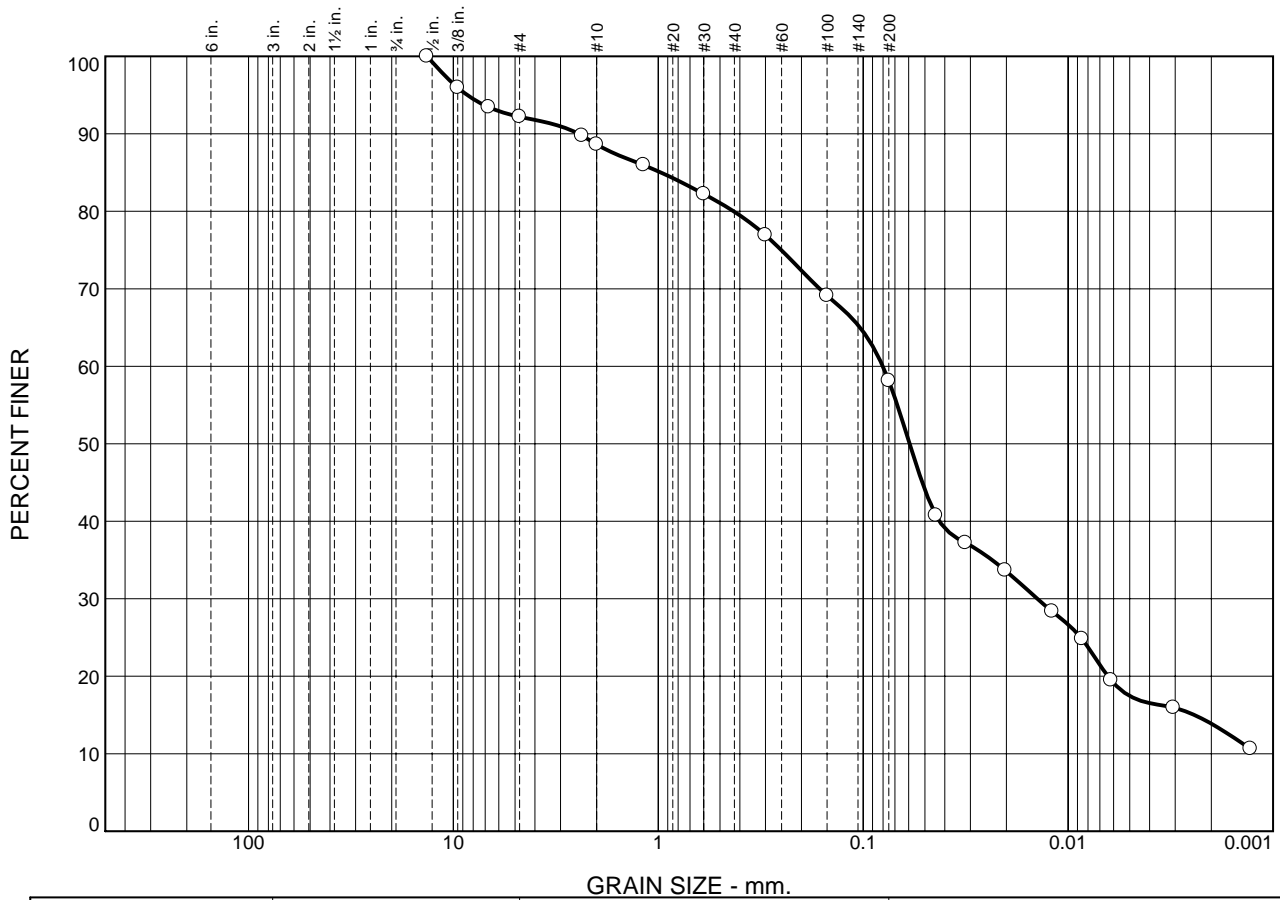
Caving was encountered upon completion of the borehole at a depth of approximately 8.84 m (El. 443.85 m) below ground surface.
 Bottom of borehole at 9.75 m, Elevation 442.94 m.

BOREHOLE LOG2 21-368(B) BRIDGE 6.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-29-21

APPENDIX B

GRAIN SIZE ANALYSES

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.8	3.6	8.7	21.8	44.2	13.9

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	6	3.66-4.57m	sandy silt, some clay, trace gravel	ML
				Sampled by BF of CMT Engineering Inc., August 9, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.

St. Clements, ON

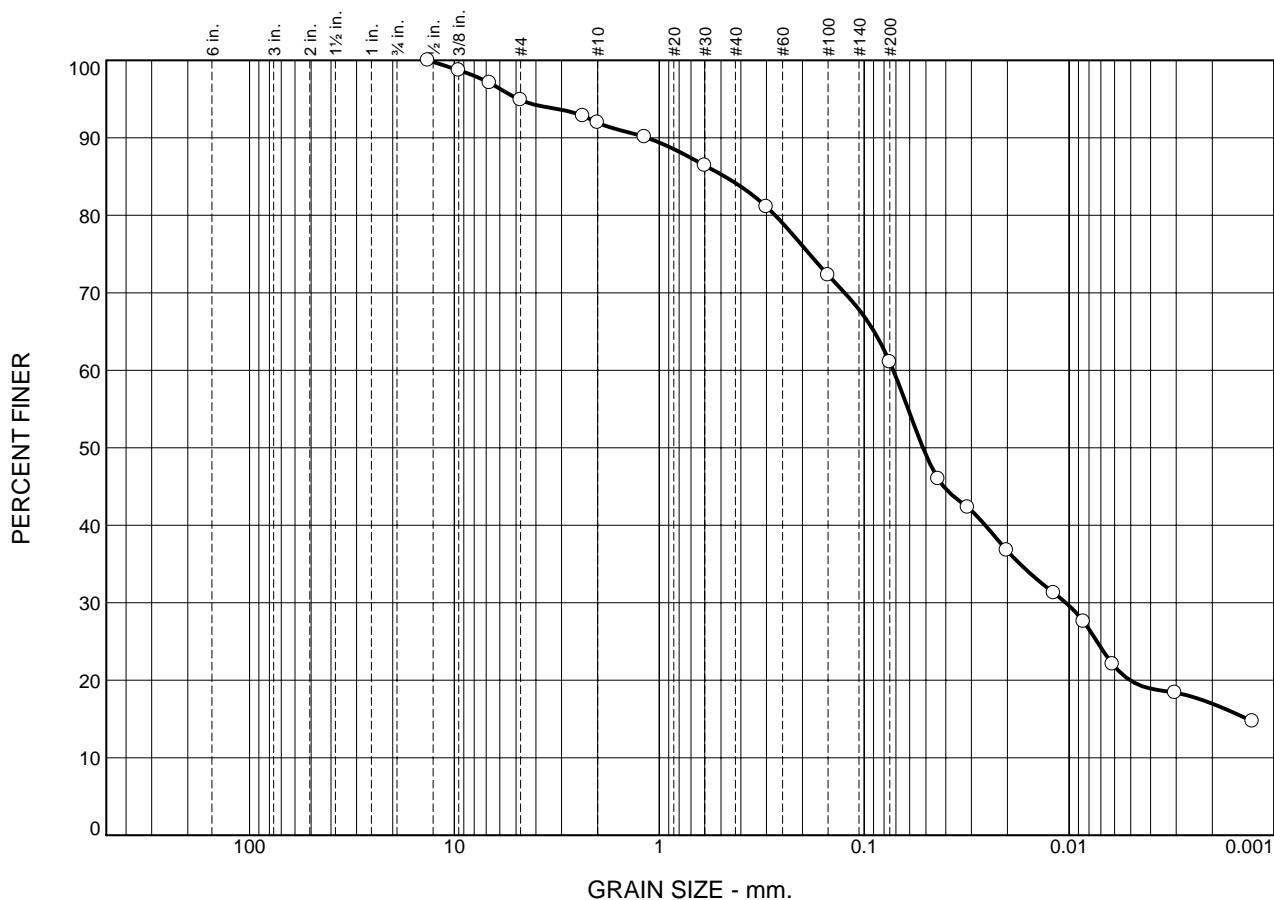
Client: County of Wellington

Project: Reconstruction of Conestogo River Bridge 6 (Structure B109132)
Wellington Road 109, Arthur, Ontario

Project No.: 21-368(b)

Figure 1

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	5.1	2.9	7.8	23.1	44.1	17.0

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	13	9.14-9.75m	sandy silt, some clay, trace gravel	ML
				Sampled by BF of CMT Engineering Inc., August 9, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: County of Wellington
Project: Reconstruction of Conestogo River Bridge 6 (Structure B109132)
 Wellington Road 109, Arthur, Ontario
Project No.: 21-368(b) **Figure** 2

GEOTECHNICAL INVESTIGATION

**RECONSTRUCTION OF CONESTOGO RIVER
BRIDGE NO. 5, STRUCTURE C109123
WELLINGTON ROAD 109
ARTHUR, ONTARIO
COUNTY OF WELLINGTON**

CMT Project 21-368(a).R01

PREPARED FOR:

County of Wellington

November 30, 2021





CMT Engineering Inc.
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November 30, 2021

21-368(a).R01

County of Wellington
74 Woolwich Street
Guelph, Ontario
N1H 3T9

Attention: Mr. Joe de Koning

Dear Sir:

**Re: Geotechnical Investigation
Reconstruction of Conestogo River Bridge No. 5, Structure 109123
Wellington Road 109
County of Wellington, Ontario**

As requested, CMT Engineering Inc. conducted a geotechnical investigation at the above-referenced site, and we are pleased to present the enclosed report.

We trust that this information meets your present requirements, and we thank you for this opportunity to have been of service. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

Brandon Figg

Brandon R Figg, C. Tech.

ks

1cc: WSP Canada - Jamie Yeung, P.Eng., Ph.D.

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Drawing 1 – Location Map

Drawing 2 – Survey Drawing Showing Borehole Locations

Appendix A – Borehole Logs

Appendix B – Grain Size Analyses

1.0 INTRODUCTION

The services of CMT Engineering Inc. were retained by Mr. Jamie Yeung, P.Eng., Ph.D. of WSP Canada, on behalf of the County of Wellington, to carry out a geotechnical investigation for the proposed Reconstruction of Bridge No. 5, Structure C109123 located on Wellington Road 109 in the County of Wellington, Ontario.

It is understood that the bridge reconstruction is to comprise the removal of the existing concrete parapet walls/railings and construction of the new bridge abutments that will be located outside of the existing abutments (which are intended to be left in place). It was also unclear at the time of the investigation if a temporary bridge will be installed adjacent the existing bridge for traffic flow. The location of the structure is provided on Drawing 1.

The purpose of the geotechnical investigation was to assess the existing soil and groundwater conditions encountered in the boreholes. Included in the assessment are the soil classification and groundwater observations, as well as comments and recommendations regarding geotechnical resistance (bearing capacity); serviceability limit states (anticipated settlement); dewatering considerations; site classification for seismic site response; soil properties; recommendations for site grading, excavations and backfilling; pavement design; and a summary of the laboratory results.

The recommendations in this report are solely based on the soil conditions encountered in the boreholes located at the subject site.

2.0 EXISTING SITE CONDITIONS

Wellington Road 109 is a paved two-lane highway with typically steep side slopes down into the adjacent roadside ditches. The existing bridge comprises a concrete structure with an approximate span of 31.5 m, and approximately 6.4 m from the existing paved driving surface to the river bottom. The location of the site is shown on Drawing 1.

3.0 FIELD AND LABORATORY PROCEDURES

Prior to the commencement of the field drilling program, public underground service locates (Ontario One Call) were undertaken to ensure that underground utilities would not be damaged, or personnel were injured.

The field investigation was conducted on August 9 to 10, 2021 and comprised the advancement of two (2) boreholes (referenced as Borehole 1 and Borehole 2) utilizing a Geoprobe 7822DT drillrig operated by CMT Drilling Inc. Boreholes 1 and 2 were advanced to approximate depths of 11.28 m (37.0 ft) below the ground surface elevation. Borehole 1 was located approximately 3.2 m south and 8.0 m west of the northwest corner of the existing structure, on the northwest side of the existing bridge structure, while Borehole 2 was located approximately 3.2 m south

and 7.0 m east of the northeast corner of the existing structure, on the northeast side of the existing bridge structure.

Standard penetration testing and sampling was carried out in the boreholes using 38 mm inside diameter split spoon sampling equipment and an automatic hammer, in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". SPT soil sampling was generally conducted at 0.76 m (2.50 ft) intervals to 3.05 m (10.00 ft), and every 1.52 m (5.00 ft) thereafter, to borehole termination. Macro core (MC5) direct push sampling was generally conducted between the SPT soil samples obtained below 3.05 m (10.00 ft) depth. Technical staff from CMT Inc. observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations.

Representative soil samples from the following boreholes and depths were submitted to the CMT Inc. laboratory in St. Clements, Ontario for grain size analyses:

- Borehole 1: depth – 2.29 m to 2.90 m (7.50 ft to 9.50 ft)
- Borehole 2: depth – 10.67 m to 11.28 m (35.00 ft to 37.00 ft)

The borehole logs are provided in Appendix A. The resulting grain size analyses are presented in Appendix B.

The ground surface elevations (geodetic) at the borehole locations were surveyed by WSP staff and reported to CMT Inc. on November 4, 2021. The ground surface elevations (geodetic) at the borehole locations ranged from approximately 457.86 m to 457.87 m. The locations of the boreholes are shown on Drawing 2.

4.0 SUBSOIL CONDITIONS

The soils encountered in the boreholes are described briefly below and a more detailed stratigraphic description is provided on the borehole logs in Appendix A. The following paragraphs have been simplified into terms of major soil strata. The soil boundaries indicated have been inferred from non-continuous samples and observations of sampling and drilling resistance and typically represent transitions from one soil type to another rather than exact planes of geological change. Further, the subsurface conditions are anticipated to vary beyond the borehole locations.

4.1 Asphaltic Concrete

Asphaltic concrete (asphalt) was encountered at the surface of both boreholes. The thickness of the asphalt at the borehole locations ranged from approximately 175 mm to 200 mm (average 188 mm). The asphalt thickness is anticipated to vary throughout the project area.

4.2 Granular Fill

Dense to very dense, brown granular fill was encountered underlying the asphalt in both boreholes. The thickness of the granular fill at the borehole locations ranged from approximately 200 mm to 300 mm (average 250 mm). The thickness of the granular fill is anticipated to vary throughout the project area.

4.3 Silty Sand Fill

Dark brown silty sand fill was encountered underlying the granular fill at both boreholes and within the buried topsoil in Borehole 2. The silty sand fill was considered to be very loose to compact, with SPT N-values ranging from 4 to 15 blows per 0.30 m (average 10 blows per 0.30 m). The silty sand fill was considered to be moist, with moisture contents ranging from about 11.1% to 26.6% (average 18.9%).

4.4 Buried Topsoil

Dark brown, silty organic topsoil was encountered below the silty sand fill at both boreholes. The thickness of the buried topsoil layers was observed to range between approximately 230 mm and 770 mm. The buried topsoil was considered to be very loose to loose, with SPT N-values ranging from 2 to 6 blows per 0.30 m (average 4 blows per 0.30 m). The topsoil was considered to be moist, with moisture contents ranging from about 16.4% to 41.5% (average 29.0%). It should be expected that the topsoil thickness will vary throughout the project area. Materials noted as topsoil in this report were classified based on visual and textural evidence. Testing of organic content or for other nutrients was not carried out.

4.5 Silt and Clay

Brown to grey silt and clay, with some sand and trace gravel was encountered underlying the buried topsoil in Borehole 1 and underlying the fill soils in Borehole 2. The silt and clay was considered to be compact to very dense, with SPT N-values ranging from 16 to greater than 100 blows per 0.30 m (average 58 blows per 0.30 m). The silt and clay was considered to be moist, with moisture contents ranging from about 9.3% to 15.4% (average 12.4%).

4.6 Silt and Clay Till

Brown silt and clay till, with some sand, trace gravel was encountered underlying the silt and clay in both boreholes. The silt and clay till was considered to be compact to very dense, with SPT N-values ranging from 30 to greater than 100 blows per 0.30 m (average 65 blows per 0.3 m). The silt and clay till was considered to be moist, with moisture contents ranging from approximately 6.4% to 14.8% (average 10.6%).

4.7 Gravel

Brown gravel, with some sand and silt was encountered underlying silt and clay till in Borehole 2. The gravel was considered to be very dense, with an SPT N-value of greater than 100 blows per 0.30 m. The gravel was considered to be moist, with a moisture content of approximately 7.8%.

4.8 Groundwater

A zone of wet to saturated soils was observed within Borehole 2. The existing silt and clay and/or silt and clay till soils encountered in the boreholes are typically low in permeability and have the potential to create perched water conditions. These perched conditions would be expected to occur near the interface of the more permeable upper soils and the less permeable lower soils. It should be noted that groundwater conditions (particularly perched water) are generally dependent on the water level of the river, amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume. The groundwater levels and wet soil conditions encountered in Borehole 2 could make some excavations difficult. It should be expected that caving or sloughing of the excavation walls will occur, especially when excavating into wet or saturated soils. The following table summarizes the groundwater observations at each borehole:

Borehole No.	Ground Surface Elevation (m)	Estimated Zone of Wet to Saturated Zones (m)	Bottom of Borehole Elevation (m)
1	457.87	--	446.59
2	457.86	447.19 to 446.58 (termination)	446.58

Recommendations with respect to dewatering conditions are provided in Section 5.7 of this report.

5.0 DISCUSSION AND RECOMMENDATIONS

This section of the report provides CMT Inc.'s interpretation of the factual geotechnical data obtained during the investigation and is intended for the guidance of the owner and design engineer. Where comments are made on construction, they are provided only to highlight those aspects which could affect the design of the project. Contractors bidding on or undertaking the work should make their own independent interpretation of the factual subsurface information provided as it affects their proposed construction means and methods, equipment selection, scheduling, pricing, and the like.

Utilizing the information gathered during the geotechnical investigation and assuming that the borehole information is representative of the subsoil conditions throughout the site, the following comments and recommendations are provided.

5.1 Serviceability and Ultimate Limit Pressure

Based on the information obtained from the boreholes, the following table provides a summary of the estimated geotechnical reaction at the Serviceability Limit State (SLS) and the factored geotechnical resistance at the Ultimate Limit State (ULS) at the various elevations, including soil type:

BH No.	Ground Surface Elevation (m)	SLS kPa (psf)	ULS kPa (psf)	Estimated Highest Founding Elevations (m)	Depth Below Existing Grade to Founding Elevation (m)	Soil Type
1	457.87	150 (3,000)	225 (4,500)	455.58 to 454.82	2.29	Silt and Clay
		250 (5,000)	325 (6,500)	454.82 to 446.59 (termination)	3.05	Silt and Clay/Silt and Clay Till
2	457.86	150 (3,000)	225 (4,500)	453.52 to 451.76	4.34	Silt and Clay/Silt and Clay Till
		250 (5,000)	325 (6,500)	451.76 to 446.59 (termination)	6.10	Silt and Clay Till/Gravel

Note: The founding soils are recommended to be in a drained state at the time of construction.

Based on the bearing capacities and elevations provided in the table above, suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS can be found below an approximate depth of 2.29 m at Borehole 1 and below an approximate depth of 4.34 m at Borehole 2, while suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 250 kPa (5,000 psf) at SLS and 325 kPa (6,500 psf) at ULS can be found below an approximate depth of 3.05 m at Borehole 1 and below an approximate depth of 6.10 m at Borehole 2.

Provisions for site dewatering and soil stabilization through the placement of a crushed clear stone base or concrete mud mat (as required) should be included in the tender documents.

It is recommended that the founding soils be assessed at the time of construction by qualified geotechnical personnel in order to confirm their founding suitability. Should the soils be unsuitable to support the foundation at the proposed founding elevations, the unsuitable soils must be further subexcavated and either the footings be lowered to found on approved soils or the low bearing soil may be replaced with imported granular structural fill. Should footings be designed to be constructed at elevations higher than the elevations indicated in the table above, then structural fill will be required in order to achieve the design grades for the proposed foundations. The serviceability limit pressure for good quality structural fill (OPSS 1010 Granular 'A', OPSS 1010 Type II or Type III Granular 'B') placed and compacted in accordance with Section 5.5 of this report is estimated to be 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf). Alternatively, lean mix concrete fill could be used to achieve the design grades for the proposed foundations.

It should be noted that the footings require a minimum of 1.2 m (4.0 ft) of soil cover to provide against frost action. Additionally, the footings are recommended to be constructed at least 1.2 m below the maximum scour depth.

With respect to the Serviceability Limit State (SLS), the total differential footing settlements are not expected to exceed the generally acceptable limits of 25 mm (1") and 19 mm (3/4") respectively, assuming a minimum footing width of 0.6 m.

5.2 Seismic Site Classification

The site classification for seismic response in Table 4.1.8.4 of the 2012 Ontario Building Code relates to the average properties of the upper 30.0 m of strata. The information obtained in the geotechnical field investigation was gathered from the upper 11.28 m of strata. Based on the information gathered in the geotechnical field investigation, the site classification for seismic site response would be considered Site Class D (stiff soil) for structures founded on the native soils at the recommended founding elevations provided in Section 5.1 of this report. For foundations constructed on structural fill, placed in accordance with Section 5.5 of this report, the site classification for seismic site response would also be considered Site Class D (stiff soil).

The structural engineer responsible for the design of the structure should review the earthquake loads and effects.

5.3 Existing Bridge Demolition and Removal or Relocation of Existing Services

All concrete components of the existing structure, as well as all existing backfill material, must be removed from areas of the proposed replacement structure. The excavations must be inspected and backfilled (as required) according to the procedures outlined in Section 5.5 of this report. It is recommended that imported sand and gravel (OPSS 1010 Type II or III Granular 'B' or an approved alternative) be placed as structural fill to backfill the demolition area (as required).

Any existing underground services (if present) that may be located within the proposed new structure envelope should be removed/relocated. If left in place, the location of existing services must be reviewed to ensure that they do not conflict with proposed foundation locations. All terminated pipes must be completely sealed with watertight mechanical covers, concrete or grout at termination points to prevent the migration of soils into pipe voids which can result in potential settlement. All existing trench backfill material associated with any existing underground services must be subexcavated and the subsequent excavation should be backfilled with approved soils placed in accordance with Section 5.5 of this report.

5.4 Excavations

All excavations must be carried out in accordance with Ontario Regulation 213/91 (Reg 213/91) of the Occupational Health and Safety Act and Regulations for Construction Projects.

Type 3 Soils – The existing fill material and the native soils, in a drained state (not saturated) would be classified as Type 3 soils under Reg 213/91 and must be sloped to the bottom of the excavation at a minimum gradient of 1 horizontal to 1 vertical. Soils that are underlain by Type 4 soils that are exposed in the excavation or soils that are in a saturated condition must be treated as Type 4 soils (addressed below).

Type 4 Soils - In general, the saturated sand soils would be classified as Type 4 soils under Reg 213/91. Type 4 soils must be sloped from the bottom of the excavation at a minimum gradient of 3 horizontal to 1 vertical.

If it is not practical to excavate according to the above requirements, then a trench support system (designed in accordance with the Ontario Health and Safety Act Regulations) may be utilized. When using a temporary trench support system consisting of trench boxes to reduce the lateral extent of the excavations, it should be noted that the support system is intended primarily to protect workers as opposed to controlling lateral

soil movement. Any voids between the excavation walls and the support system should be immediately filled to reduce the potential for loss of ground and to provide support to existing adjacent utilities and structures, and it is recommended that the excavation be carried out in short sections, with the support system installed immediately upon excavation completion.

Sloughing/caving of the excavation walls should be expected when excavating into very moist, wet and saturated soils. As such, it may be necessary to increase the width of the excavation to accommodate sloughing/caving soils.

5.5 Structural Fill

Currently, the design founding elevation of the replacement structure is not available. Following the subexcavation of all fill, any organic soils that may be encountered, and any loose, native soils deemed unsuitable to support the design bearing capacity, the exposed subgrade must be thoroughly inspected by qualified geotechnical personnel and any soft or unstable areas observed must be subexcavated and replaced with approved fill materials. Any structural fill materials (if required) should be placed according to the following procedures:

- Prior to placement of any structural fill, the subgrade for the proposed foundations must be prepared large enough to accommodate a 1:1 slope commencing a distance of 1.0 m beyond the outside edges of the proposed foundations down to approved, competent native founding soils;
- If saturated founding soil conditions are encountered during construction, it will be necessary to construct either a crushed clear stone granular base (meeting the gradation and physical property requirements of OPSS 1004) or a concrete mud mat in order to prevent disturbance of the founding soils during construction. The contractor should have the crushed clear stone or concrete available for placement immediately following the completion of the excavation and subsequent inspection and approval by qualified geotechnical personnel;
- Imported granular fill (OPSS 1010 Type II or Type III Granular 'B' is recommended for use as structural fill) can be compacted utilizing adequate heavy vibratory smooth drum or padfoot compaction equipment (compaction with padfoot equipment requires that structural fill be placed a minimum 0.3 m above the design footing grade in order to account for the disturbance of the founding soils from the pads on the compaction equipment, or the final lift at the founding elevation can be compacted utilizing a smooth drum vibratory compactor or a large diesel vibratory plate compactor). Soils approved for use as structural fill must be placed in loose lifts not exceeding 0.3 m (12") in depth for granular soils (recommended fill materials) or the capacity of the compactor (whichever is less);

- Approved fill materials must be at suitable moisture contents to achieve the specified compaction. The saturated native soils observed in the boreholes would require extensive air-drying in order to achieve the specified density and therefore, are not recommended for use as structural fill. Soil moisture will also be dependent on weather conditions at the time of construction;
- Approved structural fill materials that will support the structure must be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD);
- Approved bulk fill (backfill and bulk fill that will not support footings) must be compacted to a minimum 95% SPMDD.

All approved structural fill placed according to the above procedures will be considered capable of supporting foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS.

It is imperative that when cohesive soils (clay and/or silt) are utilized as fill, the material must be broken down (pulverized) to minimize void space and reduce the potential for settlement. Problems associated with compacting cohesive soils include the potential for long-term settlement due to excessive void space caused by the generally blocky structure of the excavated soils. Therefore, the contractor must have equipment on-site that can effectively break down the cohesive excavated soil into workable sizes (as required). Backfilling utilizing this material must be performed in thin lifts with considerable compactive effort applied, thereby reducing the void space and minimizing long-term settlement. This process could be difficult and time-consuming. Based on the above, any cohesive silt/clayey silt soils are not recommended to be utilized as structural fill.

5.6 Foundation Subgrade Preparation

The native soils encountered in the boreholes are sensitive to changes in moisture content and can become loose/soft if the soils are subjected to additional water or precipitation. The native subgrade soils could also be easily disturbed if traveled on during construction. Once they become disturbed, they are no longer considered adequate for the support of shallow foundations. To ensure and protect the integrity of the founding soils during construction operations, the following is recommended:

- It is recommended to construct a concrete mud slab or crushed clear stone base to protect the structural integrity of the founding soils when cast-in-place footings are proposed. In the event that precast structures are proposed, a clear stone base is suggested in order to allow for more efficient levelling;

- During construction, the subgrade should be sloped or ditched (as required) to the outside of the structure footprint in the excavation to promote surface drainage of rainwater or seepage and the collected water should be pumped out of the excavation. It is critical that all water be controlled (not allowed to pond) and that the subgrade and foundation preparation commence in dry conditions;
- Construction equipment travel and foot traffic on the founding soils should be minimized;
- If construction is to be undertaken during subzero weather conditions, the founding native soils and any potential fill materials must be maintained above freezing;
- Prior to placing concrete for the footings, the footing area must be cleaned of all disturbed or caved materials;
- The foundation formwork and concrete should be installed as soon as practical following the excavation, inspection and approval of the founding soils. The longer that the excavated soils remain open to weather conditions and groundwater seepage, the greater the potential for construction problems to occur;
- If it is expected that the founding soils will be left open to exposure for an extended period of time, it is recommended that a 75 mm concrete mud slab be placed in order to protect the structural integrity of the founding soils.

5.7 Construction Dewatering

Seepage control requirements and groundwater conditions during construction are generally dependent on the water level of the river, amount of precipitation, control of surface water, the time of year, the area of work on the site, as well as the depth of the excavations, and can fluctuate significantly in elevation and volume. As such, it is critical that provisions for site dewatering be part of the bridge reconstruction process. Seepage should generally be adequately controlled using conventional construction dewatering techniques such as ditching (as required) and pumping from sump pits. It may be required to excavate a larger working area in order to facilitate effective drainage of founding soils. Should heavy seepage be encountered, it may be necessary to increase the number of pumps during construction to effectively drain larger construction areas. Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils. It should also be expected that pumps and hoses may plug up with fine-grained soils, resulting in the requirement for continuous maintenance.

Dewatering works should be designed and constructed in accordance with requirements of regulatory agencies such as the Ministry of Natural Resources and the Ministry of the Environment, Conservation and Parks. Dewatering should be performed in accordance with OPSS 517 and the control of water must be in accordance with OPSS 518. It is the

responsibility of the contractor to propose a suitable dewatering system based on the groundwater elevation at the time of construction. Collected water should discharge a sufficient distance away from the excavation to prevent re-entry. Sediment control measures must be installed at the discharge point of the dewatering system to avoid any potential adverse impacts on the environment.

Seasonal variations in the groundwater should be expected, with higher levels generally occurring during the wet weather seasons in the spring and fall, and lower levels occurring during dry weather conditions. Therefore, in order to minimize the amount of water encountered during construction, it is recommended that the construction be performed during the typically drier summer months. It is anticipated that it will be necessary to utilize a temporary dam technique in order to divert the water away from the construction area and prevent any surface water from flowing into the excavations. Products such as Nilex Aqua Barrier are commonly used for this application. Aqua Barrier is a water-inflated dam system that acts as a barricade and prevents water from entering the work area. The controlled water is then pumped around the construction area.

5.8 Wing Walls

5.8.1 Culvert/Abutments and Wing Wall Backfilling

To promote drainage behind the abutments and wing walls (if constructed) and alleviate hydrostatic pressure, the structures are to be backfilled with a free-draining granular material such as Granular 'B' (OPSS 1010), extending out a minimum lateral distance of 1200 mm from the wall. The backfill should be placed in accordance to OPSD 3101.150. It should be noted that the soils that are expected to be encountered in the excavations are not considered to be free-draining.

The backfill material used against the structure walls must be placed so that the allowable lateral earth pressures on the walls are not exceeded. Backfilling operations should be carried out with the following minimum requirements:

- Adequate vibratory compaction equipment (suited to soil type and proximity to walls) should be used to compact the soils;
- Loose lift thicknesses should not exceed 0.3 m (12") for granular soils or the capacity of the compactor (whichever is less);
- The soils must be at suitable moisture contents to achieve compaction to a minimum 100% SPMDD underlying the pavement structure;

- Backfill materials beyond the 1200 mm distance from the structure walls and below the frost taper may consist of approved excavated native soils that are at suitable moisture contents to achieve the specified compaction and with no particles greater than 250 mm in diameter and contain no topsoil or other deleterious materials.

5.8.2 Abutment and Wing Wall Drainage

Drainage behind abutments and wing walls (if constructed) is of paramount importance. As such, it is recommended to install wall drains (as required) and a drainage system in accordance with OPSD 3101.150. It is recommended to install minimum 100 mm diameter perforated tiles to collect and redirect water at the base of the abutments and wing walls. The perforated tiles should be installed at a depth that provides optimal drainage but must also allow for positive drainage towards a gravity outlet. The drainage tiles should be wrapped completely in a geotextile filter fabric such as Terrafix 270 or equivalent. The drainage tiles will reduce the potential for future hydrostatic pressures acting on the structure. A rodent guard should be installed at the outlet(s).

5.8.3 Frost Tapers

Frost tapers must be constructed in order to reduce the effects of differential frost action in the bridge/culvert approaches. The frost tapers should be constructed in accordance with OPSD 3101.150. According to the OPSD requirements, the required length of the frost taper must be at least 6.0 m, as measured from the outer limit of the culvert/abutment backfill. The frost taper must be constructed on both sides utilizing the OPSS 1010 granular material that is used for the culvert/abutment and wing wall backfill.

5.8.4 Lateral Earth Pressure

Permanent subsurface walls are to be designed to resist lateral earth pressures, which can be calculated by the following:

$$P = K (\gamma h + q)$$

where: P = horizontal pressure at depth

h = depth of soil to footing (m)

K = earth pressure coefficient

γ = bulk unit weight of soil (kN/m³)

q = complete surcharge loading (kPa) (kN/m²)

This equation assumes that the backfill is free-draining and that an adequate drainage system with a positive drainage outlet have been placed below the footing level.

Computation should be performed in accordance with the latest edition of the Canadian Highway Bridge Design Code. Soil properties presented in the following section should be utilized in the computation.

5.8.5 Soil Design Parameters

The following table provides the estimated soil design parameters for imported granular fill, as well as the existing soils encountered on-site. It should be noted that earth pressure coefficients (K_a , K_p , K_o) provided are for flat ground surface conditions and will differ for areas with slopes or embankments. The estimated soil design parameters can be utilized for the design of perimeter shoring, foundations and retaining walls, as required:

Soil Type	Soil Density (kg/m ³)	Friction Angle (Degree)	Coefficient of Active Pressure (K_a)	Coefficient of Passive Pressure (K_p)	Coefficient of At-Rest Pressure (K_o)	Coefficient of Friction (μ)
Imported Granular 'A'/ Granular 'B' (OPSS 1010)	2,100	34°	0.28	3.54	0.44	0.45
Existing Fill	1,800	28°	0.36	2.77	0.53	0.35
Silt and Clay	1,800	28°	0.36	2.77	0.53	0.35
Silt and Clay Till	1,900	32°	0.31	3.25	0.47	0.42

5.9 Service Pipe Bedding

The native soils encountered in the geotechnical investigation are generally considered suitable for indirect support of site service pipes (if installed). Should instability due to saturated soil conditions be encountered, it may be necessary to increase the thickness of the granular base and utilize 19 mm clear stone to create an adequate supporting base for the service pipes and/or manholes.

Pipe embedment, cover and backfill for both flexible and rigid pipes should be in accordance with all current and applicable OPSD, OPSS and OBC standards and guidelines and as follows:

Flexible Pipes – The pipe bedding should be shaped to receive the bottom of the pipe. If necessary, pipe culvert frost treatment should be undertaken in accordance with OPSD-803.031. The trench excavations should be symmetrical with respect to the centreline of the pipe. The granular material placed under the haunches of the pipe must be compacted to 95% SPMDD prior to the continued placement and compaction of the embedment material. The homogeneous granular material used for embedment should be placed and compacted uniformly around the pipe. Should wet conditions be encountered at the base of the trench, then the pipe bedding should consist of 19 mm clear stone (meeting OPS Specifications) wrapped completely in a geotextile fabric such as Terrafix 270 or equivalent.

Rigid Pipes - In general, the pipe installation recommendations for rigid pipes are the same as those for flexible pipes, except that the minimum bedding depth below a rigid pipe should be $0.15D$ (where D is the pipe diameter). In no case should this dimension be less than 150 mm or greater than 300 mm.

Any service pipes that are not provided with sufficient frost coverage must be protected with the necessary equivalent thermal insulation. The general contractor is responsible to protect service piping from damage by heavy equipment.

5.10 Pavement Design

The existing granular base was not tested with respect to OPSS 1010 gradation requirements for Granular 'B'; however, typically granular base materials that have been in place over a prolonged period of time do not meet the gradation requirements of OPSS 1010 and are not generally considered suitable for reuse in the new pavement structure. In most cases, the materials exceed the allowable amount of fine soils (materials passing the #200 sieve). The elevated fines content can generally be attributed to mechanical breakdown of the aggregate which occurs over time due to vehicular traffic as well as freeze/thaw cycles. As such, it is recommended that imported OPSS 1010 Granular 'B' and OPSS 1010 Granular 'A' materials be utilized in any new pavement structure. It is recommended that the existing granular base be utilized as bulk fill, as required.

The native subgrade soils are sensitive to changes in moisture content and may become loose or soft if the soils are subject to inclement weather and seepage or severe drying. Furthermore, the subgrade soils could be easily disturbed if traveled on during construction. As such, where this material will be exposed, it is recommended that the granular subbase be placed immediately upon completion and inspection of the subgrade preparation to protect the structural integrity of the subgrade soils.

Prior to placement of the granular subbase, the subgrade soils should be proof-rolled, and any soft or unstable areas observed should be subexcavated and replaced with suitable drier materials, compacted to a minimum of 95% SPMDD. Frost tapers must be constructed as per Section 5.8.3 of this report.

Should wet conditions be encountered during construction, site assessments may be required to determine what options can be undertaken to construct a modified pavement base. These options may include subexcavation of wet soils and increasing the thickness of the granular base, the use of reinforcing geotextiles and/or geogrids, or a combination of all.

The subgrade should be graded smooth and be free of depressions with a minimum grade of 3% towards the roadside ditch.

The vegetation on the existing shoulder would be expected to impede drainage of the granular base/subbase as well as surface drainage which can result in ponding of surface water (rain as well as melted snow and ice). In order to improve drainage of the road structure, it is recommended that, if feasible, the granular subbase should daylight in the shoulder rounding which should be free of vegetation; the granular shoulder should also be sloped at 6% to the rounding breakpoint, all in accordance with OPSD 200.010, OPSD 206.010 and/or OPSD 209.010. Consideration must be given in the road design to ensure that the gravel shoulder rounding is not subject to erosion by excessive overland flow of surface water.

It is assumed that the road may be subjected to both heavy loading (delivery trucks, school buses, tractors, snow removal and maintenance equipment, and emergency vehicles), as well as light passenger vehicles.

Considering anticipated loading and the frost-susceptibility of the subgrade soils, if the reconstructed road will receive an asphalt driving surface, the following pavement design is recommended:

Material	Recommended Thickness (Heavy Traffic)
Asphaltic Concrete	HL3 - 50 mm (2.0") HL4 or HL8 - 100 mm (4.0") (two lifts of 50 mm)
Granular 'A' Base (OPSS 1010)	150 mm (6.0")
Granular 'B' Subbase (OPSS 1010)	450 mm (18.0")

The granular subbase material and frost tapers must be compacted to 100% SPMDD. Asphaltic concrete should be supplied, placed and compacted to a minimum 92.0% Marshall maximum relative density in accordance with OPSS 1150 and OPSS 310.

Construction joints in the surface asphalt must be offset a minimum of 150 mm to 300 mm (6" to 12") from construction joints in the binder asphalt so that longitudinal joints do not coincide.

In areas where new asphalt will abut the existing asphalt, it is recommended that any joints in the existing asphalt be sawcut in a straight line prior to being milled to a depth of 40 mm and a width of 150 mm as per OPSD 509.010. It is recommended that a tackcoat in conformance with OPSS 308 be applied to the edge and surface of all milled asphalt prior to placement of new asphalt.

The road should be designed to ensure that water will not pond on the road surface or road edge. It is imperative that a proper spillway be constructed to ensure that erosion of the shoulder rounding does not occur at all locations where surface flow is directed off the road surface and into the ditch.

Given that it is anticipated that only a portion of the roadway associated with the bridge replacement will be repaired, if the pavement structure presented above differs significantly from the existing pavement structure encountered on site, please contact CMT Inc. for further recommendations.

5.11 Chemical Analysis/Excess Soil Management

5.11.1 Chemical Testing NOT Undertaken

Generally, if surplus soils are to be exported off-site, it will be necessary to perform chemical analysis of the soils. Chemical analysis was **not** undertaken as part of this geotechnical investigation. Should chemical analysis tests be required, the required tests vary and will be dependent on the disposal site utilized by the general contractor.

5.11.2 Leachate Testing Requirement

If soils are transported off-site, additional chemical testing may be required. The extent of the leachate testing will be determined by the results of the initial chemical testing as well as the requirements of the disposal site.

The chemical analysis results would be compared to the site condition standards of Ontario Regulation 406/19.

When transporting soils off-site, the following is recommended:

- All chemical analyses and environmental assessment reports must be fully disclosed to the receiving site owners/authorities, whom must agree to receive the material;
- An environmental consultant must confirm the land use at the receiving site is compatible to receive the material;
- An environmental consultant must monitor the transportation and placement of the materials to ensure that the material is placed appropriately at the pre-approved site;
- The excess materials may not be transported to a site that has previously had a Record of Site Condition (RSC) filed, unless the material meets the criteria outlined in the RSC.

It should be noted that landfill sites will generally only accept laboratory test results that have been completed within 30 days of exporting. Therefore, it is recommended that provisions for chemical analysis be included in the tender documents. It should also be noted that the laboratory testing generally takes five (5) working days to process with a regular turnaround time.

6.0 SITE INSPECTIONS

Qualified geotechnical personnel should supervise excavation inspections as well as compaction testing for structural filling, site grading and site servicing. This will ensure that footings are founded in the proper strata and that proper material and techniques are used and the specified compaction is achieved. CMT Engineering Inc. would be pleased to review the design drawings and provide an inspection and testing program for the construction of the proposed development.

7.0 LIMITATIONS OF THE INVESTIGATION

The recommendations made in this report are in accordance with our present understanding of the project. We request that we be permitted to review our recommendations when the drawings and specifications are complete, or if the proposed construction should differ from that mentioned in this report.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments are based on the results obtained at the test locations only. It is therefore assumed that these results are representative of the subsoil conditions across the site. Should any conditions at the site be encountered which differ from those found at the test locations, we

request that we be notified immediately in order to permit a reassessment of our recommendations.

It should be noted that this report specifically addresses geotechnical aspects of the project and does not include any investigations or assessments relating to potential subsurface contamination. As such, there should be no assumptions or conclusions derived from this report with respect to potential soil or water contamination. Soil or water contamination is generally caused by the presence of xenobiotic (human-made) chemicals or other alteration processes in the natural soil and groundwater environment. If necessary, the investigation, assessment and rehabilitation of soil and water contaminants should be undertaken by qualified environmental specialists.

The samples obtained during the geotechnical investigation will be stored for a period of three months, after which time they will be disposed of unless alternative arrangements are made.

This report is intended solely for the client named. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the reliability of such third parties. The factual data, interpretation, and recommendations in this report pertain to a specific project as described in this report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, deviates from the assumptions stated herein, CMT Inc. should be given an opportunity to confirm that the recommendations are still valid. The subject geotechnical exploration and this report address only the geotechnical aspects of the proposed project; potential environmental impacts or related issues are beyond the defined scope of this work and have not been addressed.

We trust that this report meets with your present requirements. Should you have any questions, please do not hesitate to contact our office.

Prepared by:

Brandon Figg

Brandon R Figg, C. Tech.
Senior Soil Technician

ks

Reviewed by:

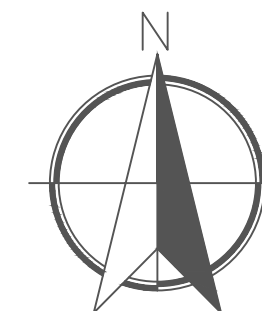


Nathan Chortos, P.Eng.
Senior Engineer



NOTES:

1. BASE MAP PROVIDED BY GOOGLE MAPS



NO.	DESCRIPTION	DATE
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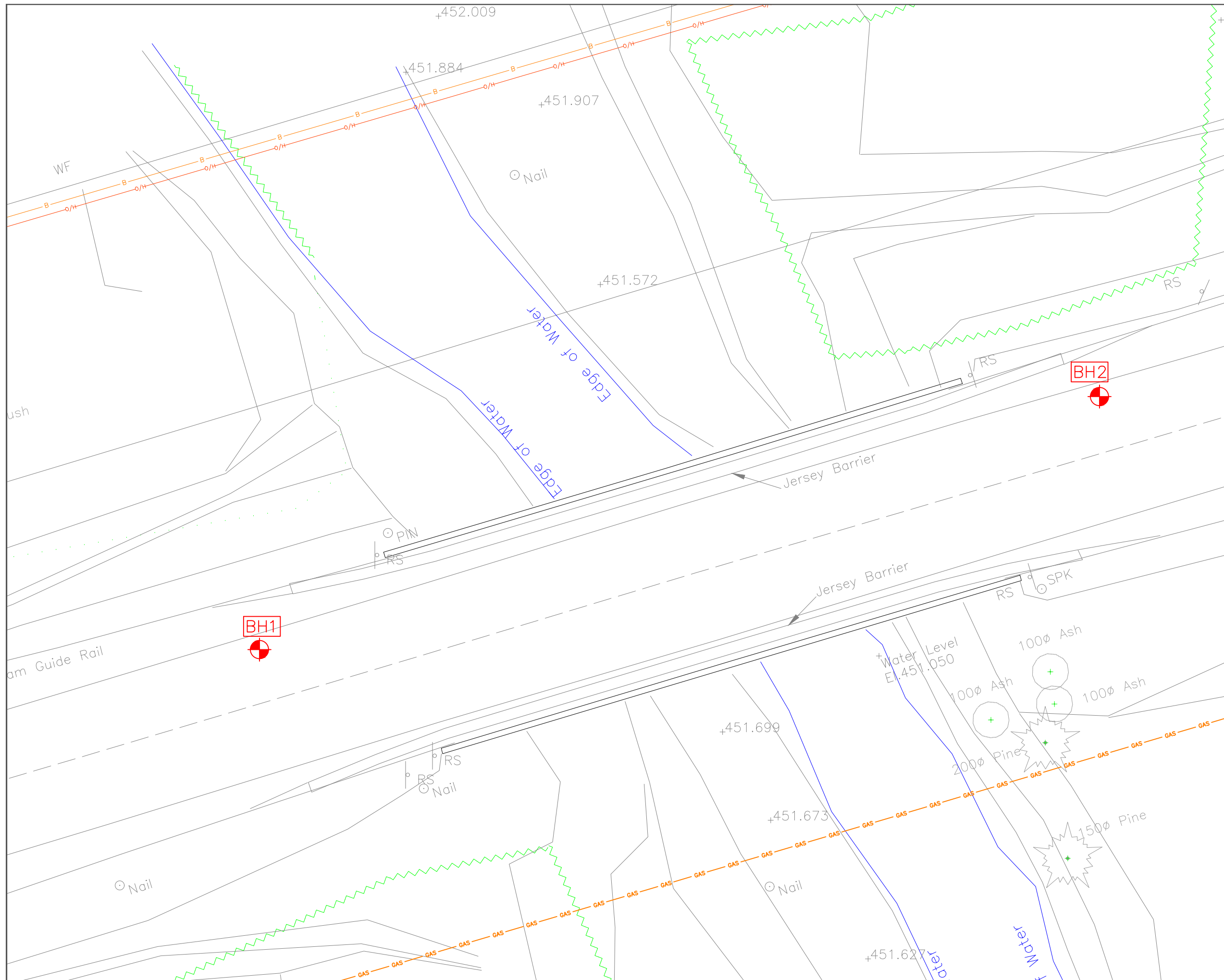
REVISIONS


CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario NOB 2M0
 Tel.: 519-699-5775
 Fax: 519-699-4664
 www.cmtinc.net

PROJECT:
 BRIDGE RECONSTRUCTION
 Wellington Road 109,
 Arthur, Ontario

DRAWING
 TITLE:
 SITE LOCATIONS MAP


PROJECT NO.: 21-368(a)	DATE: November 16, 2021
SCALE: N.T.S.	DRAWING NO. 1

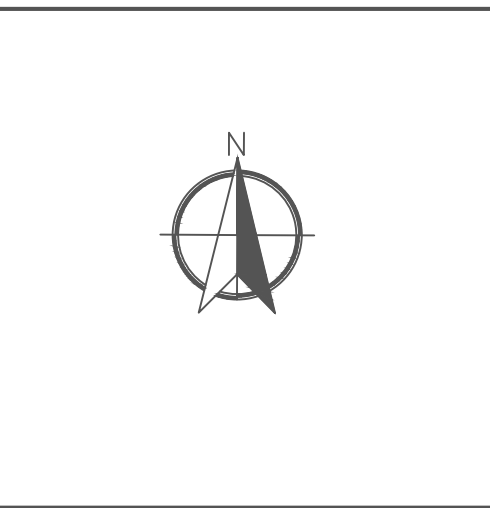


NOTES:

Drawing provided by WSP.

Legend

 CMT Borehole (2021)



NO.	DESCRIPTION	DATE

REVISIONS

 **CMT ENGINEERING INC.**
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario NOB 2M0
 Tel.: 519-699-5775
 Fax: 519-699-4664
 www.cmtinc.net

PROJECT:
 Reconstruction of Bridge
 C109123
 Wellington Road 109,
 Arthur, Ontario

DRAWING TITLE:
 SURVEY DRAWING SHOWING
 BOREHOLE LOCATIONS

PROJECT NO.: 21-368(a) **DATE:** November 16, 2021

SCALE: N.T.S. **DRAWING NO.:** 2

APPENDIX A

BOREHOLE LOGS



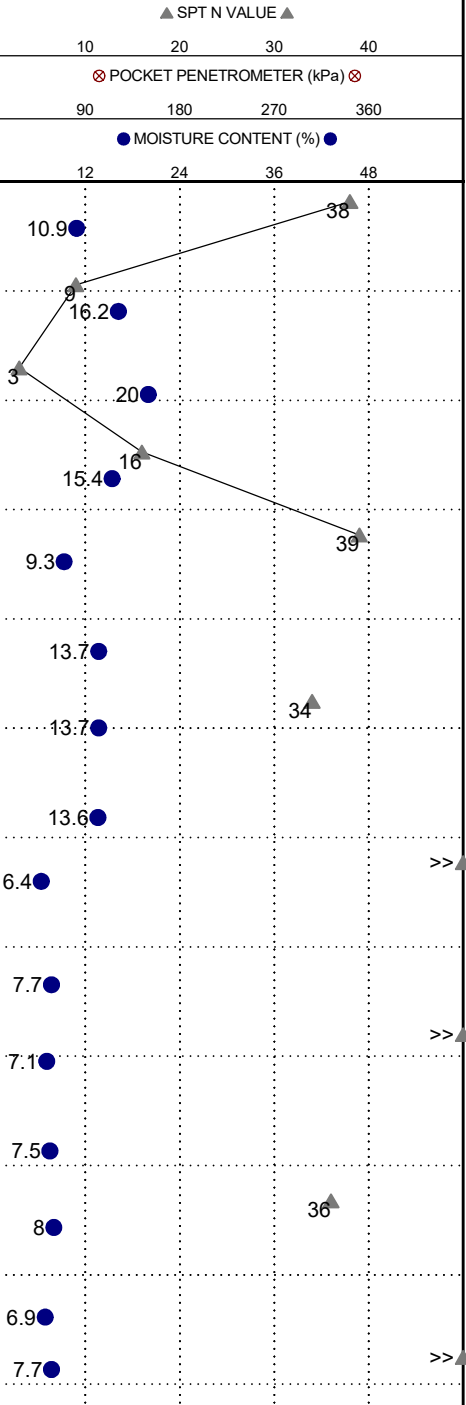
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER BH1

PROJECT: Reconstruction of Bridge C109123
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 457.87 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(a)
DRILLING DATE: 8-9-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
1		ASPHALT: Asphaltic Concrete (200 mm)	0.00, 457.87	SPT 1	92	26-21-17-6 (38)				
		GRANULAR FILL: Dense brown, sand and gravel fill, moist	0.20, 457.67							
		SILTY SAND FILL: Loose, dark brown, silty sand fill, moist with organics	0.50, 457.37							
2		TOPSOIL: Very loose, dark brown, silty organic topsoil, moist (770 mm)	1.52, 456.35	SPT 3	75	2-1-2-2 (3)				
3		SILT AND CLAY: Compact, brown, silt and clay, some sand, trace gravel, moist	2.29, 455.58	SPT 4	79	8-6-10-13 (16)				
		becoming dense	3.05, 454.82	SPT 5	100	8-17-22-20 (39)				
4		becoming grey	4.06, 453.81	MC5 6	100					
5				SPT 7	87	12-15-19-24 (34)				
				MC5 8	100					
6		becoming very dense	6.10, 451.77	SPT 9	142	25-21-50/0.13				
7		SILT AND CLAY TILL: Very dense, brown, silt and clay till, some sand, trace gravel, moist	6.58, 451.29	MC5 10	76					
				SPT 11	100	15-26-29-32 (55)				
8				MC5 12	100					
9				SPT 13	100	16-18-18-26 (36)				
				MC5 14	100					
10		becoming dense	9.14, 448.73	SPT 15	89	21-50/0.13				
11		becoming very dense	10.67, 447.20							



Caving was encountered upon completion of the borehole at a depth of approximately 10.62 m (El. 447.25 m) below ground surface.
 Bottom of borehole at 11.28 m, Elevation 446.59 m.

BOREHOLE LOG2 21-368(A) BH LOGS.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-29-21



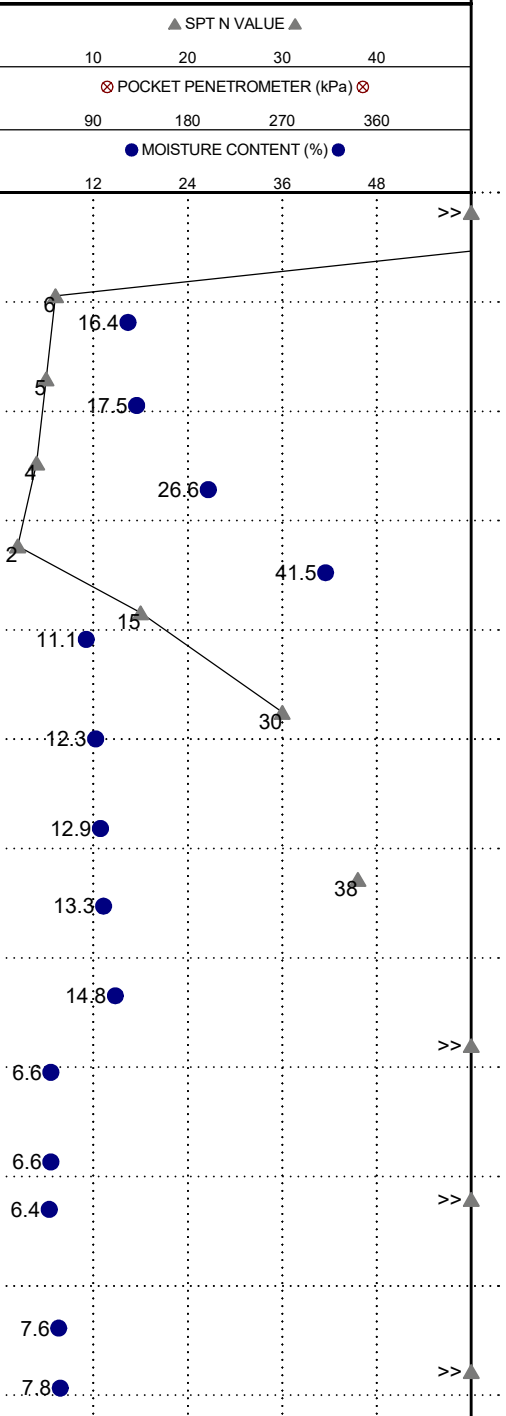
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER BH2

PROJECT: Reconstruction of Bridge C109123
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 457.86 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(a)
DRILLING DATE: 8-10-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
1	[Cross-hatched]	ASPHALT: Asphaltic Concrete (175 mm)	0.00, 457.86	SPT 1	62	37-47-41-11 (88)				
		GRANULAR FILL: Very dense, brown, sand and gravel fill, moist	0.18, 457.69							
		SILTY SAND FILL: Loose, dark brown, silty sand fill, moist	0.38, 457.49							
2	[Wavy]	TOPSOIL: Loose, dark brown, silty organic topsoil, moist (430 mm)	1.09, 456.77	SPT 2	75	4-3-3-4 (6)				
		SILTY SAND FILL: Loose, dark brown, silty sand fill, moist	1.52, 456.34	SPT 3	92	1-3-2-1 (5)				
3	[Wavy]	TOPSOIL: Loose, dark brown, silty organic topsoil, moist (230 mm)	2.06, 455.80	SPT 4	87	4-2-2-2 (4)				
		SILTY SAND FILL: Loose, dark brown, silty sand fill, moist	2.29, 455.57							
4	[Wavy]	TOPSOIL: Very loose, dark brown, silty organic topsoil, moist (760 mm)	3.05, 454.81	SPT 5	100	0-0-2-3 (2)				
		SILTY SAND FILL: Compact, dark brown, silty sand fill, moist	3.81, 454.05	SPT 6	87	4-6-9-10 (15)				
5	[Diagonal lines]	SILT AND CLAY: Compact, brown, silt and clay, some sand, trace gravel, moist	4.34, 453.52	SPT 7	100	7-12-18-18 (30)				
		SILT AND CLAY TILL: Compact, brown, silt and clay till, some sand, trace gravel, moist	4.57, 453.29							
6	[Diagonal lines]	becoming grey	5.59, 452.27	MC5 8	100					
		becoming dense	6.10, 451.76	SPT 9	100	7-16-22-25 (38)				
7	[Diagonal lines]			MC5 10	100					
				SPT 11	100	35-33-34-32 (67)				
8	[Diagonal lines]	becoming very dense	7.62, 450.24	MC5 12	100					
				SPT 13	65	32-50/0.08				
9	[Diagonal lines]			MC5 14	100					
				SPT 15	53	27-17-50/0.08				
11	[Diagonal lines]	GRAVEL: Very dense, brown, gravel, some sand and silt, trace clay, wet	10.67, 447.19	SPT 15	53	27-17-50/0.08				



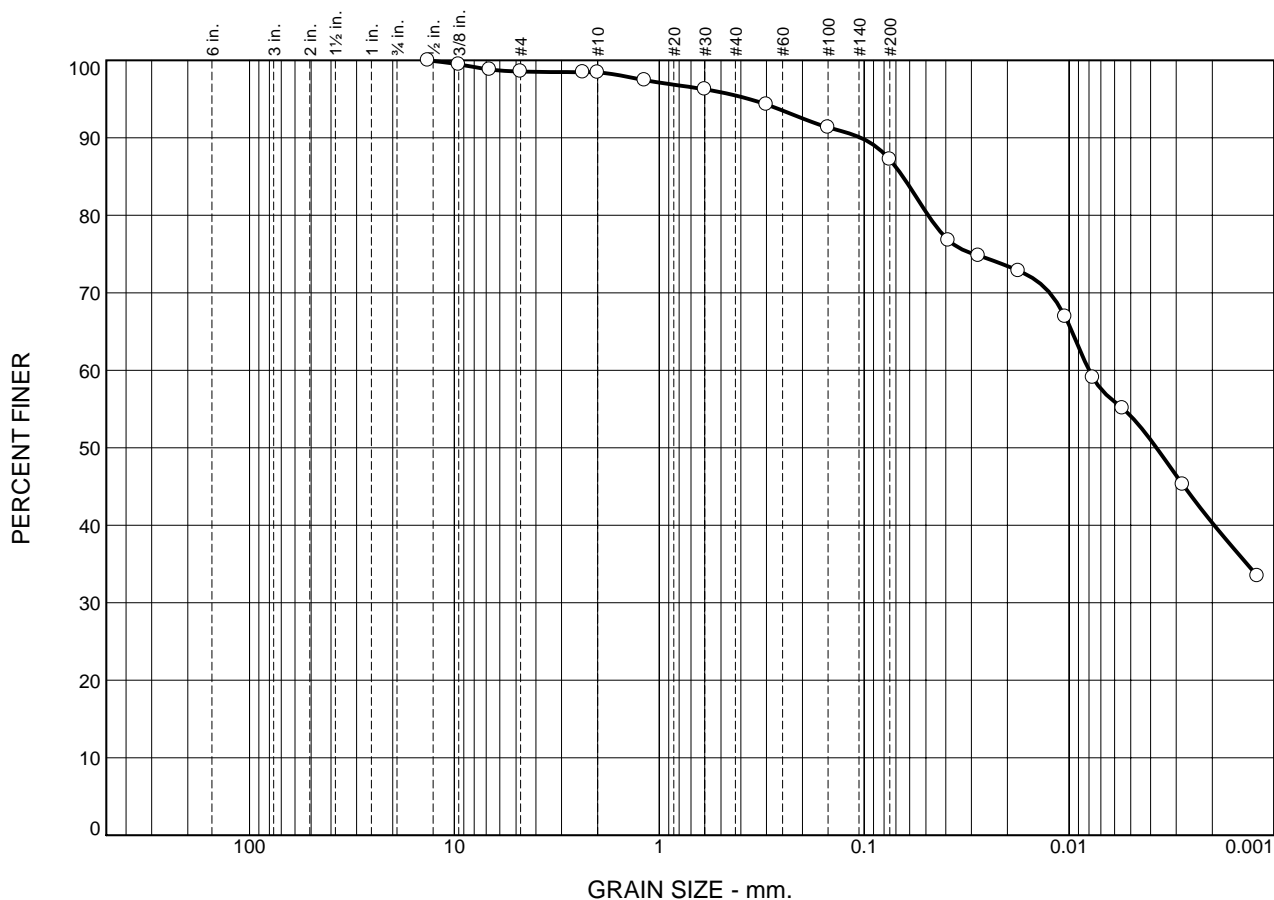
BOREHOLE LOG2 21-368(A) BH LOGS.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-29-21

Caving was encountered upon completion of the borehole at a depth of approximately 10.82 m (El. 447.04 m) below ground surface. Accumulated ground water was encountered in the borehole.
 Bottom of borehole at 11.28 m, Elevation 446.58 m.

APPENDIX B

GRAIN SIZE ANALYSES

Particle Size Distribution Report



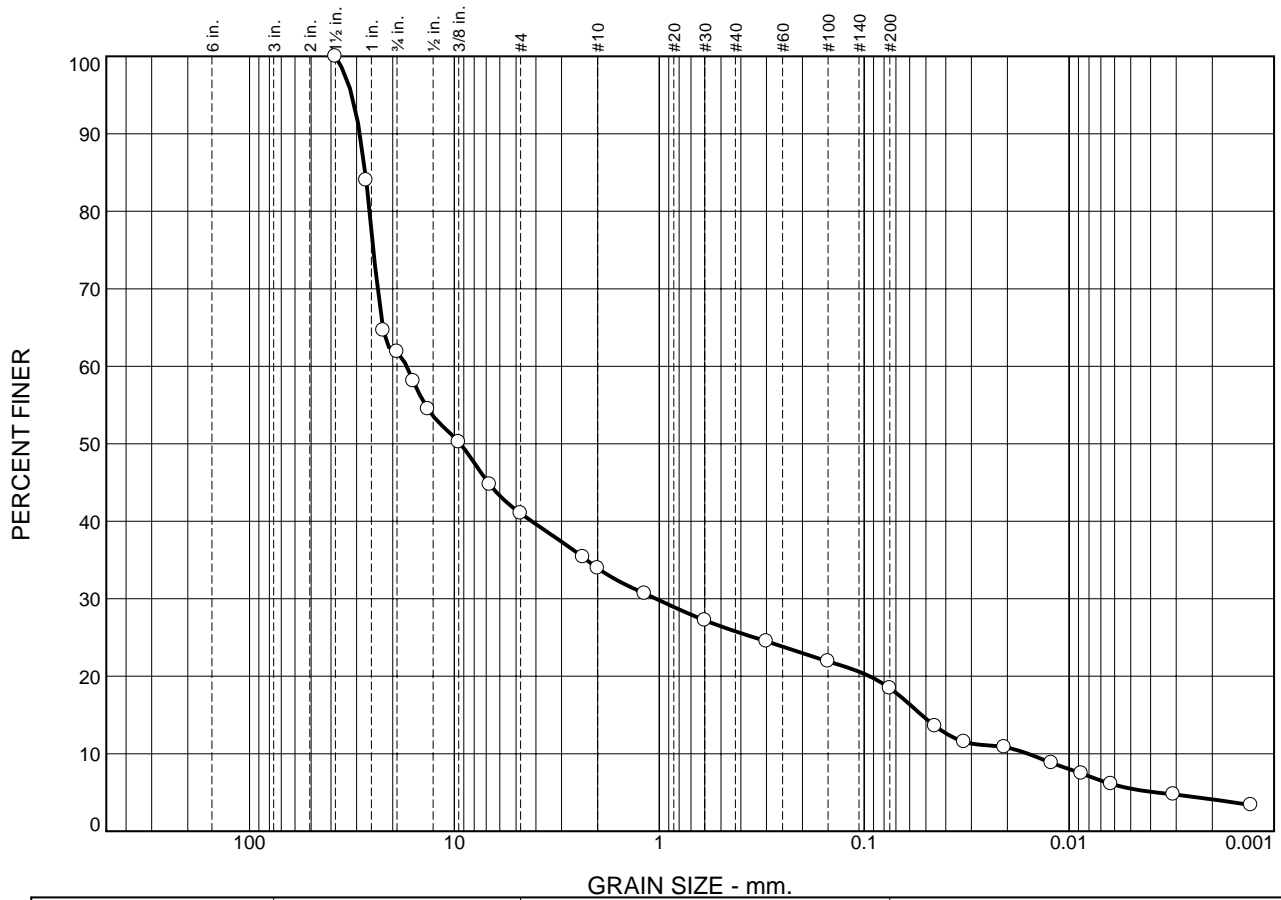
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.4	0.2	2.9	8.3	46.9	40.3

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	4	2.29-2.90m	silt and clay, some sand, trace gravel	ML
				Sampled by BF of CMT Engineering Inc., August 10, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: County of Wellington
Project: Reconstruction of Conestogo River Bridge 5 (Structure C109123)
 Wellington Road 109, Arthur, Ontario
Project No.: 21-368(a)

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	38.1	20.9	7.1	8.1	7.3	14.4	4.1

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	15	10.67-	gravel, some sand and silt, trace clay	GM
			11.28m	Sampled by BF of CMT Engineering Inc., August 10, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: County of Wellington
Project: Reconstruction of Conestogo River Bridge 5 (Structure C109123)
 Wellington Road 109, Arthur, Ontario
Project No.: 21-368(a) **Figure 2**

GEOTECHNICAL INVESTIGATION

**RECONSTRUCTION OF CONESTOGO RIVER
BRIDGE NO. 4, STRUCTURE B109133
WELLINGTON ROAD 109
ARTHUR, ONTARIO
COUNTY OF WELLINGTON**

CMT Project 21-368.R01

PREPARED FOR:

County of Wellington

November 17, 2021





CMT Engineering Inc.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

November 17, 2021

21-368.R01

County of Wellington
74 Woolwich Street
Guelph, Ontario
N1H 3T9

Attention: Mr. Joe de Koning

Dear Sir:

**Re: Geotechnical Investigation
Reconstruction of Conestogo River Bridge No. 4, Structure B109133
Wellington Road 109
Arthur, Ontario
County of Wellington, Ontario**

As requested, CMT Engineering Inc. conducted a geotechnical investigation at the above-referenced site, and we are pleased to present the enclosed report.

We trust that this information meets your present requirements, and we thank you for this opportunity to have been of service. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

Brandon Figg

Brandon R Figg, C. Tech.

ks

1cc: WSP Canada - Jamie Yeung, P.Eng., Ph.D.

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Drawing 1 – Location Map

Drawing 2 – Survey Drawing Showing Borehole Locations

Appendix A – Borehole Logs

Appendix B – Grain Size Analyses

1.0 INTRODUCTION

The services of CMT Engineering Inc. were retained by Mr. Jamie Yeung, P.Eng., Ph.D., of WSP Canada, to carry out a geotechnical investigation for the proposed Reconstruction of Bridge No. 4, Structure B109133 located on Wellington Road 109 in the County of Wellington, Ontario.

It is understood that the bridge reconstruction is to comprise the removal of the existing concrete parapet walls/railings and construction of the new bridge abutments that will be located outside of the existing abutments (which are intended to be left in place). It was also unclear at the time of the investigation if a temporary bridge will be installed adjacent the existing bridge for traffic flow. The location of the structure is shown on Drawing 1.

The purpose of the geotechnical investigation was to assess the existing soil and groundwater conditions encountered in the boreholes. Included in the assessment are the soil classification and groundwater observations, as well as comments and recommendations regarding geotechnical resistance (bearing capacity); serviceability limit states (anticipated settlement); dewatering considerations; site classification for seismic site response; soil properties; recommendations for site grading, excavations and backfilling; pavement design; and a summary of the laboratory results.

The recommendations in this report are solely based on the soil conditions encountered in the boreholes located at the subject site.

2.0 EXISTING SITE CONDITIONS

Wellington Road 109 is a paved two-lane highway with typically steep side slopes down into the roadside ditches. The existing structure comprises of a concrete structure with an approximate span of 25.0 m, and approximately 4.2 m from the paved driving surface to the river bottom. The location of the site is shown on Drawing 1.

3.0 FIELD AND LABORATORY PROCEDURES

Prior to the commencement of the field drilling program, public underground service locates (Ontario One Call) were undertaken to ensure that underground utilities would not be damaged, or personnel were injured.

The field investigation was conducted on August 10, 2021 and comprised the advancement of two (2) boreholes (referenced as Borehole 1 and Borehole 2) utilizing a Geoprobe 7822DT drillrig operated by CMT Drilling Inc. Boreholes 1 and 2 were advanced to approximate depths of 9.75 m (32.0 ft) below the ground surface elevation. Borehole 1 was located approximately 3.3 m south and 10.0 m west of the northwest corner of the existing structure, on the northwest side of the existing bridge structure, while Borehole 2 was located approximately 3.1 m south

and 7.0 m east of the northeast corner of the existing structure, on the northeast side of the existing bridge structure.

Standard penetration testing and sampling was carried out in the boreholes using 38 mm inside diameter split spoon sampling equipment and an automatic hammer, in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". SPT soil sampling was generally conducted at 0.76 m (2.50 ft) intervals to 3.05 m (10.00 ft), and every 1.52 m (5.00 ft) thereafter, to borehole termination. Macro core (MC5) direct push sampling was generally conducted between the SPT soil samples obtained below 3.05 m (10.00 ft) depth. Technical staff from CMT Inc. observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations.

Representative soil samples from the following borehole and depths were submitted to the CMT Inc. laboratory in St. Clements, Ontario for grain size analyses:

- Borehole 1: depth – 3.66 m to 4.57 m (12.00 ft to 15.00 ft)
- Borehole 2: depth – 0.25 m to 0.6 m (0.80 ft to 2.00 ft)
- Borehole 2: depth – 8.89 m to 9.14 m (29.20 ft to 30.00 ft)

The borehole logs are provided in Appendix A. The resulting grain size analyses are presented in Appendix B.

The ground surface elevations (geodetic) at the borehole locations were surveyed by WSP staff and reported to CMT Inc. on November 4, 2021. The ground surface elevations (geodetic) at the borehole locations ranged from approximately 461.90 m to 461.92 m. The locations of the boreholes are shown on Drawing 2.

4.0 SUBSOIL CONDITIONS

The soils encountered in the boreholes are described briefly below and a more detailed stratigraphic description is provided on the borehole logs in Appendix A. The following paragraphs have been simplified into terms of major soil strata. The soil boundaries indicated have been inferred from non-continuous samples and observations of sampling and drilling resistance and typically represent transitions from one soil type to another rather than exact planes of geological change. Further, the subsurface conditions are anticipated to vary beyond the borehole locations.

4.1 Asphaltic Concrete

Asphaltic concrete (asphalt) was encountered at the surface of both boreholes. The thickness of the asphalt at the borehole locations ranged from approximately 125 mm to 325 mm (average 225 mm). The asphalt thickness is anticipated to vary throughout the project area.

4.2 Granular Fill

Compact, brown granular fill was encountered underlying the asphalt in both boreholes. The thickness of the granular fill at the borehole locations ranged from approximately 635 mm to 855 mm (average 745 mm). The thickness of the granular fill is anticipated to vary throughout the project area.

4.3 Silty Sand Fill

Dark brown silty sand fill was encountered underlying the granular fill at both boreholes. The silty sand fill was considered to be very loose to loose, with SPT N-values ranging from 3 to 9 blows per 0.30 m (average 6 blows per 0.30 m). The silty sand fill was considered to be moist to wet, with moisture contents ranging from about 8.8% to 22.6% (average 15.7%).

4.4 Buried Topsoil

Dark brown, silty organic topsoil was encountered below the silty sand fill at Borehole 1. The thickness of the buried topsoil was approximately 1,550 mm. The buried topsoil was considered to be very loose, with SPT N-values ranging from 1 to 3 blows per 0.30 m (average 2 blows per 0.30 m). The topsoil was considered to be moist, with moisture contents ranging from about 23.7% to 28.5% (average 26.1%). It should be expected that the topsoil thickness may vary outside the project area. Materials noted as topsoil in this report were classified based on visual and textural evidence. Testing of organic content or for other nutrients was not carried out.

4.5 Clay and Silt

Brown clay and silt, with trace sand and gravel was encountered underlying the buried topsoil in Borehole 1 and underlying the fill soils in Borehole 2. The clay and silt was considered to be loose to dense, with SPT N-values ranging from 8 to 36 blows per 0.30 m (average 22 blows per 0.30 m). The clay and silt was considered to be moist to very moist, with moisture contents ranging from about 12.2% to 24.8% (average 18.5%).

4.6 Silt

Brown silt, with some clay, trace sand was encountered underlying the clay and silt in Borehole 2. The silt was considered to be compact, with an SPT N-value of approximately 28 blows per 0.30 m. The silt was considered to be wet, with a moisture content of approximately 17.6%.

4.7 Groundwater

Very moist to wet zones were observed within both boreholes. The existing clay and silt and/or silt soils encountered in the boreholes are typically low in permeability and have the potential to create perched water conditions. These perched conditions would be expected to occur near the interface of the more permeable upper soils and the less permeable lower soils. It should be noted that groundwater conditions (particularly perched water) are generally dependent on the water level of the river, amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume. The groundwater levels and very moist to wet soil conditions encountered in the boreholes could make some excavations difficult. It should be expected that caving or sloughing of the excavation walls will occur, especially when excavating into very moist, wet or saturated soils. The following table summarizes the groundwater observations at each borehole:

Borehole No.	Ground Surface Elevation (m)	Estimated Zone of Wet to Saturated Zones (m)	Bottom of Borehole Elevation (m)
1	461.92	452.78 to 452.17 (termination)	452.17
2	461.90	455.19 to 454.28 453.01 to 452.15 (termination)	452.15

Recommendations with respect to dewatering conditions are provided in Section 5.7 of this report.

5.0 DISCUSSION AND RECOMMENDATIONS

This section of the report provides CMT Inc.'s interpretation of the factual geotechnical data obtained during the investigation and is intended for the guidance of the owner and design engineer. Where comments are made on construction, they are provided only to highlight those aspects which could affect the design of the project. Contractors bidding on or undertaking the work should make their own independent interpretation of the factual subsurface information

provided as it affects their proposed construction means and methods, equipment selection, scheduling, pricing, and the like.

Utilizing the information gathered during the geotechnical investigation and assuming that the borehole information is representative of the subsoil conditions throughout the site, the following comments and recommendations are provided.

5.1 Serviceability and Ultimate Limit Pressure

Based on the information obtained from the boreholes, the following table provides a summary of the estimated geotechnical reaction at the Serviceability Limit State (SLS) and the factored geotechnical resistance at the Ultimate Limit State (ULS) at the various elevations, including soil type:

BH No.	Ground Surface Elevation (m)	SLS kPa (psf)	ULS kPa (psf)	Estimated Highest Founding Elevations (m)	Depth Below Existing Grade to Founding Elevation (m)	Soil Type
1	461.92	150 (3,000)	225 (4,500)	458.87 to 452.17 (termination)	3.05	Clay and Silt
2	461.90	150 (3,000)	225 (4,500)	459.61 to 452.15 (termination)	2.29	Clay and Silt/Silt

Note: The founding soils are recommended to be in a drained state at the time of construction.

Based on the bearing capacities and elevations provided in the table above, suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS can be found below an approximate depth of 3.05 m at Borehole 1 and below an approximate depth of 2.29 m at Borehole 2.

Provisions for site dewatering and soil stabilization through the placement of a crushed clear stone base or concrete mud mat (as required) should be included in the tender documents.

It is recommended that the founding soils be assessed at the time of construction by qualified geotechnical personnel in order to confirm their founding suitability. Should the soils be unsuitable to support the foundation at the proposed founding elevations, the unsuitable soils must be further subexcavated and either the footings be lowered to found on approved soils or the low bearing soil may be replaced with imported granular structural fill. Should footings be designed to be constructed at elevations higher than the elevations indicated in the table above, then structural fill will be required in order to

achieve the design grades for the proposed foundations. The serviceability limit pressure for good quality structural fill (OPSS 1010 Granular 'A', OPSS 1010 Type II or Type III Granular 'B') placed and compacted in accordance with Section 5.5 of this report is estimated to be 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf). Alternatively, lean concrete fill could be used to achieve the design grades for the proposed foundations.

It should be noted that the footings require a minimum of 1.2 m (4.0 ft) of soil cover to provide against frost action. Additionally, the footings are recommended to be constructed at least 1.2 m below the maximum scour depth.

With respect to the Serviceability Limit State (SLS), the total differential footing settlements are not expected to exceed the generally acceptable limits of 25 mm (1") and 19 mm (3/4") respectively, assuming a minimum footing width of 0.6 m.

5.2 Seismic Site Classification

The site classification for seismic response in Table 4.1.8.4 of the 2012 Ontario Building Code relates to the average properties of the upper 30.0 m of strata. The information obtained in the geotechnical field investigation was gathered from the upper 9.75 m of strata. Based on the information gathered in the geotechnical field investigation, the site classification for seismic site response would be considered Site Class D (stiff soil) for structures founded on the native soils at the recommended founding elevations provided in Section 5.1 of this report. For foundations constructed on structural fill, placed in accordance with Section 5.5 of this report, the site classification for seismic site response would also be considered Site Class D (stiff soil).

The structural engineer responsible for the design of the structure should review the earthquake loads and effects.

5.3 Existing Bridge Demolition and Removal or Relocation of Existing Services

All concrete components of the existing structure are to be removed, as well as all existing backfill material, must be removed from areas of the proposed replacement structure. The excavations must be inspected and backfilled (as required) according to the procedures outlined in Section 5.5 of this report. It is recommended that imported sand and gravel (OPSS 1010 Type II or III Granular 'B' or an approved alternative) be placed as structural fill to backfill the demolition area (as required).

Any existing underground services (if present) that may be located within the proposed new structure envelope should be removed/relocated. If left in place, the location of existing services must be reviewed to ensure that they do not conflict with proposed foundation locations. All terminated pipes must be completely sealed with watertight mechanical covers, concrete or grout at termination points to prevent the migration of soils into pipe voids which can result in potential settlement. All existing trench backfill

material associated with any existing underground services must be subexcavated and the subsequent excavation should be backfilled with approved soils placed in accordance with Section 5.5 of this report.

5.4 Excavations

All excavations must be carried out in accordance with Ontario Regulation 213/91 (Reg 213/91) of the Occupational Health and Safety Act and Regulations for Construction Projects.

Type 3 Soils – The existing fill material and the native soils, in a drained state (not saturated) would be classified as Type 3 soils under Reg 213/91 and must be sloped to the bottom of the excavation at a minimum gradient of 1 horizontal to 1 vertical. Soils that are underlain by Type 4 soils that are exposed in the excavation or soils that are in a saturated condition must be treated as Type 4 soils (addressed below).

Type 4 Soils - In general, the saturated sand soils would be classified as Type 4 soils under Reg 213/91. Type 4 soils must be sloped from the bottom of the excavation at a minimum gradient of 3 horizontal to 1 vertical.

If it is not practical to excavate according to the above requirements, then a trench support system (designed in accordance with the Ontario Health and Safety Act Regulations) may be utilized. When using a temporary trench support system consisting of trench boxes to reduce the lateral extent of the excavations, it should be noted that the support system is intended primarily to protect workers as opposed to controlling lateral soil movement. Any voids between the excavation walls and the support system should be immediately filled to reduce the potential for loss of ground and to provide support to existing adjacent utilities and structures, and it is recommended that the excavation be carried out in short sections, with the support system installed immediately upon excavation completion.

Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils. As such, it may be necessary to increase the width of the excavation to accommodate sloughing/caving soils.

5.5 Structural Fill

Currently, the design founding elevation of the replacement structure is not available. Following the subexcavation of all fill, any organic soils that may be encountered, and any loose, native soils deemed unsuitable to support the design bearing capacity, the exposed subgrade must be thoroughly inspected by qualified geotechnical personnel and any soft or unstable areas observed must be subexcavated and replaced with approved fill materials.

Any structural fill materials (if required) should be placed according to the following procedures:

- Prior to placement of any structural fill, the subgrade for the proposed foundations must be prepared large enough to accommodate a 1:1 slope commencing a distance of 1.0 m beyond the outside edges of the proposed foundations down to approved, competent native founding soils;
- If saturated founding soil conditions are encountered during construction, it will be necessary to construct either a crushed clear stone granular base (meeting the gradation and physical property requirements of OPSS 1004) or a concrete mud mat in order to prevent disturbance of the founding soils during construction. The contractor should have the crushed clear stone or concrete available for placement immediately following the completion of the excavation and subsequent inspection and approval by qualified geotechnical personnel;
- Imported granular fill (OPSS 1010 Type II or Type III Granular 'B' is recommended for use as structural fill) can be compacted utilizing adequate heavy vibratory smooth drum or padfoot compaction equipment (compaction with padfoot equipment requires that structural fill be placed a minimum 0.3 m above the design footing grade in order to account for the disturbance of the founding soils from the pads on the compaction equipment, or the final lift at the founding elevation can be compacted utilizing a smooth drum vibratory compactor or a large diesel vibratory plate compactor). Soils approved for use as structural fill must be placed in loose lifts not exceeding 0.3 m (12") in depth for granular soils (recommended fill materials) or the capacity of the compactor (whichever is less);
- Approved fill materials must be at suitable moisture contents to achieve the specified compaction. The saturated native soils observed in the boreholes would require extensive air-drying in order to achieve the specified density and therefore, are not recommended for use as structural fill. Soil moisture will also be dependent on weather conditions at the time of construction;
- Approved structural fill materials that will support the structure must be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD);
- Approved bulk fill (backfill and bulk fill that will not support footings) must be compacted to a minimum 95% SPMDD.

All approved structural fill placed according to the above procedures will be considered capable of supporting foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS.

It is imperative that when cohesive soils (clay and/or silt) are utilized as fill, the material must be broken down (pulverized) to minimize void space and reduce the potential for settlement. Problems associated with compacting cohesive soils include the potential for long-term settlement due to excessive void space caused by the generally blocky structure of the excavated soils. Therefore, the contractor must have equipment on-site that can effectively break down the cohesive excavated soil into workable sizes (as required). Backfilling utilizing this material must be performed in thin lifts with considerable compactive effort applied, thereby reducing the void space and minimizing long-term settlement. This process could be difficult and time-consuming. Based on the above, any cohesive silt/clayey silt soils should not be utilized as structural fill.

5.6 Foundation Subgrade Preparation

The native soils encountered in the boreholes are sensitive to changes in moisture content and can become loose/soft if the soils are subjected to additional water or precipitation. The native subgrade soils could also be easily disturbed if traveled on during construction. Once they become disturbed, they are no longer considered adequate for the support of shallow foundations. To ensure and protect the integrity of the founding soils during construction operations, the following is recommended:

- It is recommended to construct a concrete mud slab or crushed clear stone base to protect the structural integrity of the founding soils when cast-in-place footings are proposed. In the event that precast structures are proposed, a clear stone base is suggested in order to allow for more efficient levelling;
- During construction, the subgrade should be sloped or ditched (as required) to the outside of the structure footprint in the excavation to promote surface drainage of rainwater or seepage and the collected water should be pumped out of the excavation. It is critical that all water be controlled (not allowed to pond) and that the subgrade and foundation preparation commence in dry conditions;
- Construction equipment travel and foot traffic on the founding soils should be minimized;
- If construction is to be undertaken during subzero weather conditions, the founding native soils and any potential fill materials must be maintained above freezing;
- Prior to pouring concrete for the footings, the footing area must be cleaned of all disturbed or caved materials;
- The foundation formwork and concrete should be installed as soon as practical following the excavation, inspection and approval of the founding soils. The longer that the excavated soils remain open to weather conditions and groundwater seepage, the greater the potential for construction problems to occur;

- If it is expected that the founding soils will be left open to exposure for an extended period of time, it is recommended that a 75 mm concrete mud slab be poured in order to protect the structural integrity of the founding soils.

5.7 **Construction Dewatering**

Seepage control requirements and groundwater conditions during construction are generally dependent on the water level of the river, amount of precipitation, control of surface water, the time of year, the area of work on the site, as well as the depth of the excavations, and can fluctuate significantly in elevation and volume. As such, it is critical that provisions for site dewatering be part of the bridge reconstruction process. Seepage should generally be adequately controlled using conventional construction dewatering techniques such as ditching (as required) and pumping from sump pits. It may be required to excavate a larger working area in order to facilitate effective drainage of founding soils. Should heavy seepage be encountered, it may be necessary to increase the number of pumps during construction to effectively drain larger construction areas. Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils. It should also be expected that pumps and hoses may plug up with fine-grained soils, resulting in the requirement for continuous maintenance.

Dewatering works should be designed and constructed in accordance with requirements of regulatory agencies such as the Ministry of Natural Resources and the Ministry of the Environment, Conservation and Parks. Dewatering should be performed in accordance with OPSS 517 and the control of water must be in accordance with OPSS 518. It is the responsibility of the contractor to propose a suitable dewatering system based on the groundwater elevation at the time of construction. Collected water should discharge a sufficient distance away from the excavation to prevent re-entry. Sediment control measures must be installed at the discharge point of the dewatering system to avoid any potential adverse impacts on the environment.

Seasonal variations in the groundwater should be expected, with higher levels generally occurring during the wet weather seasons in the spring and fall, and lower levels occurring during dry weather conditions. Therefore, in order to minimize the amount of water encountered during construction, it is recommended that the construction be performed during the typically drier summer months. It will be necessary to utilize a temporary dam technique in order to divert the water away from the construction area and prevent any surface water from flowing into the excavations. Products such as Nilex Aqua Barrier are commonly used for this application. Aqua Barrier is a water-inflated dam system that acts as a barricade and prevents water from entering the work area. The controlled water is then pumped around the construction area.

5.8 Wing Walls

5.8.1 Culvert/Abutments and Wing Wall Backfilling

To promote drainage behind the abutments and wing walls (if constructed) and alleviate hydrostatic pressure, the structures are to be backfilled with a free-draining granular material such as Granular 'B' (OPSS 1010), extending out a minimum lateral distance of 1,200 mm from the wall. The backfill should be placed in accordance to OPSD 3101.150. It should be noted that the soils that are expected to be encountered in the excavations are not considered to be free-draining.

The backfill material used against the structure walls must be placed so that the allowable lateral earth pressures on the walls are not exceeded. Backfilling operations should be carried out with the following minimum requirements:

- Adequate vibratory compaction equipment (suited to soil type and proximity to walls) should be used to compact the soils;
- Loose lift thicknesses should not exceed 0.3 m (12") for granular soils or the capacity of the compactor (whichever is less);
- The soils must be at suitable moisture contents to achieve compaction to a minimum 100% SPMDD underlying the pavement structure;
- Backfill materials beyond the 1,200 mm distance from the structure walls and below the frost taper may consist of approved excavated native soils that are at suitable moisture contents to achieve the specified compaction and with no particles greater than 250 mm in diameter and contain no topsoil or other deleterious materials.

5.8.2 Abutment and Wing Wall Drainage

Drainage behind abutments and wing walls (if constructed) is of paramount importance. As such, it is recommended to install wall drains (as required) and a drainage system in accordance with OPSD 3101.150. It is recommended to install minimum 100 mm diameter perforated drainage tiles to collect and redirect water at the base of the abutments and wing walls. The perforated drainage tiles should be installed at a depth that provides optimal drainage but must also allow for positive drainage towards a gravity outlet. The drainage tiles should be wrapped completely in a geotextile filter fabric such as Terrafix 270 or equivalent. The drainage tiles will reduce the potential for future hydrostatic pressures acting on the structure. A rodent guard should be installed at the outlet(s).

5.8.3 Frost Tapers

Frost tapers must be constructed in order to reduce the effects of differential frost action in the bridge/culvert approaches. The frost tapers should be constructed in accordance with OPSD 3101.150. According to the OPSD requirements, the required length of the frost taper must be at least 6.0 m, as measured from the outer limit of the culvert/abutment backfill. The frost taper must be constructed on both sides utilizing the OPSS 1010 granular material that is used for the culvert/abutment and wing wall backfill.

5.8.4 Lateral Earth Pressure

Permanent subsurface walls are to be designed to resist lateral earth pressures, which can be calculated by the following:

$$P = K (\gamma h + q)$$

where: P = horizontal pressure at depth

h = depth of soil to footing (m)

K = earth pressure coefficient

γ = bulk unit weight of soil (kN/m³)

q = complete surcharge loading (kPa) (kN/m²)

This equation assumes that the backfill is free-draining and that an adequate drainage system with a positive drainage outlet have been placed below the footing level.

Computation should be performed in accordance with the latest edition of the Canadian Highway Bridge Design Code. Soil properties presented in the following section should be utilized in the computation.

5.8.5 Soil Design Parameters

The following table provides the estimated soil design parameters for imported granular fill, as well as the existing native soils encountered on-site. It should be noted that earth pressure coefficients (K_a , K_p , K_o) provided are for flat ground surface conditions and will differ for areas with slopes or embankments.

The estimated soil design parameters can be utilized for the design of perimeter shoring, foundations and retaining walls, as required:

Soil Type	Soil Density (kg/m ³)	Friction Angle (Degree)	Coefficient of Active Pressure (K _a)	Coefficient of Passive Pressure (K _p)	Coefficient of At-Rest Pressure (K ₀)	Coefficient of Friction (μ)
Imported Granular 'A'/ Granular 'B' (OPSS 1010)	2,100	34°	0.28	3.54	0.44	0.45
Existing Fill	1,800	28°	0.36	2.77	0.53	0.35
Clay and Silt	1,900	30°	0.33	3.00	0.50	0.38
Silt	1,750	30°	0.33	3.00	0.50	0.38

5.9 Service Pipe Bedding

The native soils encountered in the geotechnical investigation are generally considered suitable for indirect support of site service pipes (if installed). Should instability due to saturated soil conditions be encountered, it may be necessary to increase the thickness of the granular base and utilize 19 mm clear stone to create an adequate supporting base for the service pipes and/or manholes.

Pipe embedment, cover and backfill for both flexible and rigid pipes should be in accordance with all current and applicable OPSD, OPSS and OBC standards and guidelines and as follows:

Flexible Pipes – The pipe bedding should be shaped to receive the bottom of the pipe. If necessary, pipe culvert frost treatment should be undertaken in accordance with OPSD-803.031. The trench excavations should be symmetrical with respect to the centreline of the pipe. The granular material placed under the haunches of the pipe must be compacted to 95% SPMDD prior to the continued placement and compaction of the embedment material. The homogeneous granular material used for embedment should be placed and compacted uniformly around the pipe. Should wet conditions be encountered at the base of the trench, then the pipe bedding should consist of 19 mm clear stone (meeting OPS Specifications) wrapped completely in a geotextile fabric such as Terrafix 270 or equivalent.

Rigid Pipes - In general, the pipe installation recommendations for rigid pipes are the same as those for flexible pipes, except that the minimum bedding depth below a rigid pipe should be 0.15D (where D is the pipe diameter). In no case should this dimension be less than 150 mm or greater than 300 mm.

Any service pipes that are not provided with sufficient frost coverage must be protected with the necessary equivalent thermal insulation. The general contractor is responsible to protect service piping from damage by heavy equipment.

5.10 Pavement Design

The existing granular base was not tested with respect to OPSS 1010 gradation requirements for Granular 'B'; however, typically granular base materials that have been in place over a prolonged period of time do not meet the gradation requirements of OPSS 1010 and are not generally considered suitable for reuse in the new pavement structure. In most cases, the materials exceed the allowable amount of fine soils (materials passing the #200 sieve). The elevated fines content can generally be attributed to mechanical breakdown of the aggregate which occurs over time due to vehicular traffic as well as freeze/thaw cycles. As such, it is recommended that imported OPSS 1010 Granular 'B' and OPSS 1010 Granular 'A' materials be utilized in any new pavement structure. It is recommended that the existing granular base be utilized as bulk fill, as required.

The native subgrade soils are sensitive to changes in moisture content and may become loose or soft if the soils are subject to inclement weather and seepage or severe drying. Furthermore, the subgrade soils could be easily disturbed if traveled on during construction. As such, where this material will be exposed, it is recommended that the granular subbase be placed immediately upon completion and inspection of the subgrade preparation to protect the structural integrity of the subgrade soils.

Prior to placement of the granular subbase, the subgrade soils should be proof-rolled, and any soft or unstable areas observed should be subexcavated and replaced with suitable drier materials, compacted to a minimum of 95% SPMDD. Frost tapers must be constructed as per Section 5.8.3 of this report.

Should wet conditions be encountered during construction, site assessments may be required to determine what options can be undertaken to construct a modified pavement base. These options may include subexcavation of wet soils and increasing the thickness of the granular base, the use of reinforcing geotextiles and/or geogrids, or a combination of all.

The subgrade should be graded smooth and be free of depressions with a minimum grade of 3% towards the roadside ditch.

The vegetation on the existing shoulder would be expected to impede drainage of the granular base/subbase as well as surface drainage which can result in ponding of surface water (rain as well as melted snow and ice). In order to improve drainage of the road structure, it is recommended that, if feasible, the granular subbase should daylight in the shoulder rounding which should be free of vegetation; the granular shoulder should also be sloped at 6% to the rounding breakpoint, all in accordance with OPSD 200.010,

OPSD 206.010 and/or OPSD 209.010. Consideration must be given in the road design to ensure that the gravel shoulder rounding is not subject to erosion by excessive overland flow of surface water.

It is assumed that the road may be subjected to both heavy loading (delivery trucks, school buses, tractors, snow removal and maintenance equipment, and emergency vehicles), as well as light passenger vehicles.

Considering the anticipated loading and the frost-susceptibility of the subgrade soils, if the reconstructed road will receive an asphalt-driving surface, the following pavement design is recommended:

Material	Recommended Thickness (Heavy Traffic)
Asphaltic Concrete	HL3 - 50 mm (2.0") HL4 or HL8 - 75 mm (3.0")
Granular 'A' Base (OPSS 1010)	150 mm (6.0")
Granular 'B' Subbase (OPSS 1010)	450 mm (18.0")

The granular subbase material and frost tapers must be compacted to 100% SPMDD. Asphaltic concrete should be supplied, placed and compacted to a minimum 92.0% Marshall maximum relative density in accordance with OPSS 1150 and OPSS 310.

Construction joints in the surface asphalt must be offset a minimum of 150 mm to 300 mm (6" to 12") from construction joints in the binder asphalt so that longitudinal joints do not coincide.

In areas where new asphalt will abut the existing asphalt, it is recommended that any joints in the existing asphalt be sawcut in a straight line prior to being milled to a depth of 40 mm and a width of 150 mm as per OPSD 509.010. It is recommended that a tackcoat in conformance with OPSS 308 be applied to the edge and surface of all milled asphalt prior to placement of new asphalt.

The road should be designed to ensure that water will not pond on the road surface or road edge. It is imperative that a proper spillway be constructed to ensure that erosion of the shoulder rounding does not occur at all locations where surface flow is directed off the road surface and into the ditch.

Given that it is anticipated that only a portion of the roadway associated with the bridge replacement will be repaired, if the pavement structure presented above differs significantly from the existing pavement structure encountered on-site, please contact CMT Inc. for further recommendations.

5.11 Chemical Analysis/Excess Soil Management

5.11.1 Chemical Testing NOT Undertaken

Generally, if surplus soils are to be exported off-site, it will be necessary to perform chemical analysis of the soils. Chemical analysis was not undertaken as part of this geotechnical investigation. Should chemical analysis tests be required, the required tests vary and will be dependent on the disposal site utilized by the general contractor.

5.11.2 Leachate Testing Requirement

If soils are transported off-site, additional chemical testing may be required. The extent of the leachate testing will be determined by the results of the initial chemical testing as well as the requirements of the disposal site.

The chemical analysis results would be compared to the site condition standards of Ontario Regulation 406/19. Typically, the results are compared to; *T1-Leachate Screening Levels – Res/Park/Inst/Ind/Com/Commu Property Use*; *T3.1-Leachate Screening Levels – Ind/Com/Commu/Property Use*.

When transporting soils off-site, the following is recommended:

- All chemical analyses and environmental assessment reports must be fully disclosed to the receiving site owners/authorities, whom must agree to receive the material;
- An environmental consultant must confirm the land use at the receiving site is compatible to receive the material;
- An environmental consultant must monitor the transportation and placement of the materials to ensure that the material is placed appropriately at the pre-approved site;
- The excess materials may not be transported to a site that has previously had a Record of Site Condition (RSC) filed, unless the material meets the criteria outlined in the RSC.

It should be noted that landfill sites will generally only accept laboratory test results that have been completed within 30 days of exporting. Therefore, it is recommended that provisions for chemical analysis be included in the tender documents. It should also be noted that the laboratory testing generally takes five (5) working days to process with a regular turnaround time.

6.0 SITE INSPECTIONS

Qualified geotechnical personnel should supervise excavation inspections as well as compaction testing for structural filling, site grading and site servicing. This will ensure that footings are founded in the proper strata and that proper material and techniques are used and the specified compaction is achieved. CMT Engineering Inc. would be pleased to review the design drawings and provide an inspection and testing program for the construction of the proposed development.

7.0 LIMITATIONS OF THE INVESTIGATION

The recommendations made in this report are in accordance with our present understanding of the project. We request that we be permitted to review our recommendations when the drawings and specifications are complete, or if the proposed construction should differ from that mentioned in this report.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments are based on the results obtained at the test locations only. It is therefore assumed that these results are representative of the subsoil conditions across the site. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations.

It should be noted that this report specifically addresses geotechnical aspects of the project and does not include any investigations or assessments relating to potential subsurface contamination. As such, there should be no assumptions or conclusions derived from this report with respect to potential soil or water contamination. Soil or water contamination is generally caused by the presence of xenobiotic (human-made) chemicals or other alteration processes in the natural soil and groundwater environment. If necessary, the investigation, assessment and rehabilitation of soil and water contaminants should be undertaken by qualified environmental specialists.

The samples obtained during the geotechnical investigation will be stored for a period of three months, after which time they will be disposed of unless alternative arrangements are made.

This report is intended solely for the client named. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the reliability of such third parties. The factual data, interpretation, and recommendations in this report pertain to a specific project as described in this report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, deviates from the assumptions stated herein, CMT Inc. should be given an opportunity to confirm that the recommendations are still valid. The subject geotechnical exploration and this report address only the geotechnical aspects of the proposed project; potential environmental impacts or related issues are beyond the defined scope of this work and have not been addressed.

We trust that this report meets with your present requirements. Should you have any questions, please do not hesitate to contact our office.

Prepared by:

Brandon Figg

Brandon R Figg, C. Tech.
Senior Soil Technician

ks



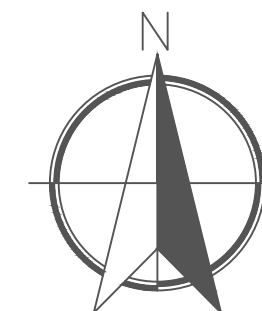
Reviewed by:

Nathan Chortos, P.Eng.
Senior Engineer



NOTES:

1. BASE MAP PROVIDED BY GOOGLE MAPS



NO.	DESCRIPTION	DATE
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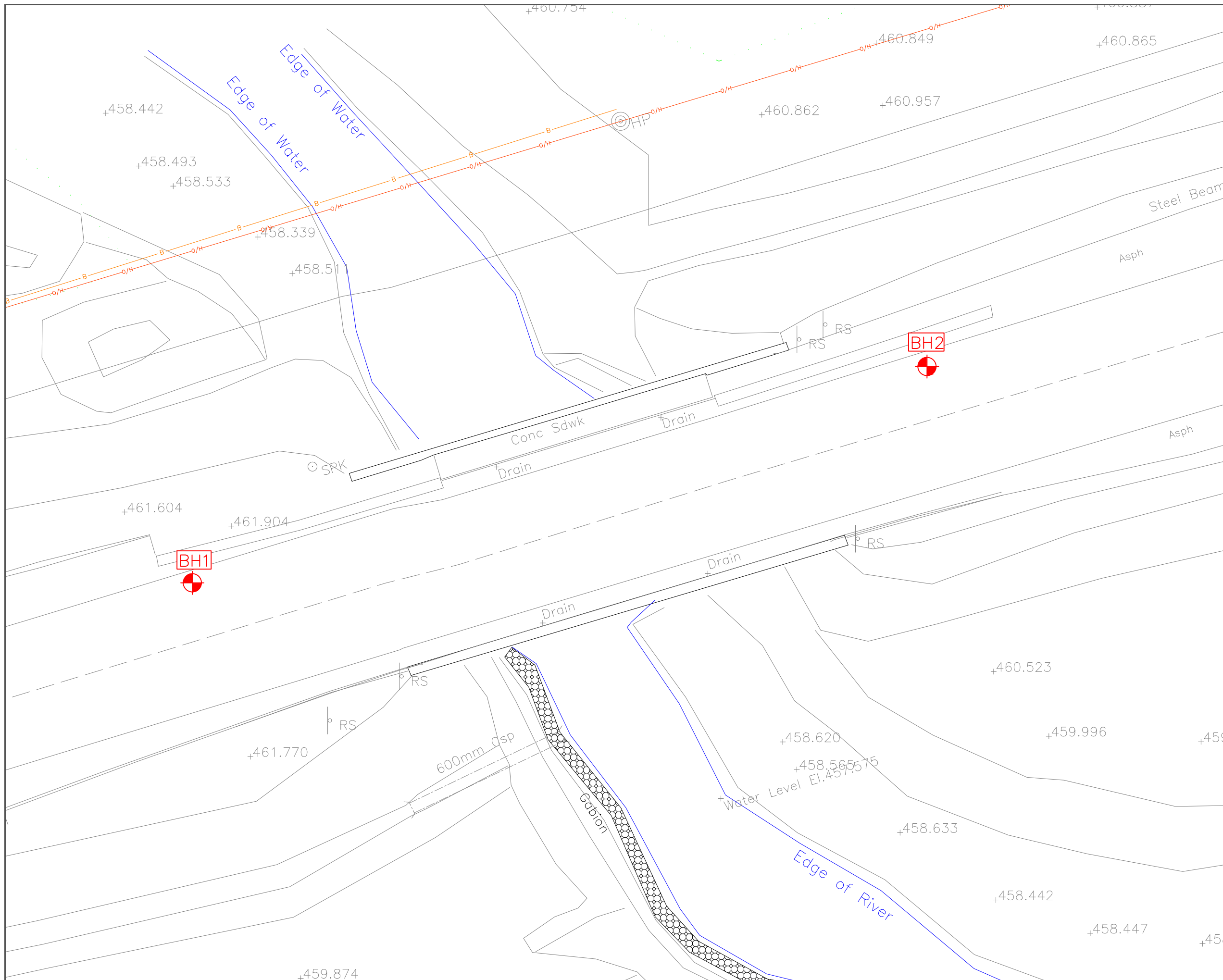
REVISIONS


CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario NOB 2M0
 Tel.: 519-699-5775
 Fax: 519-699-4664
 www.cmtinc.net


PROJECT:
 BRIDGE RECONSTRUCTION
 Wellington Road 109,
 Arthur, Ontario

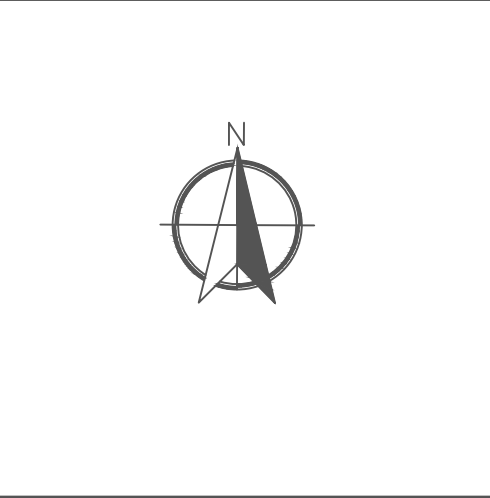
DRAWING
 TITLE:
 SITE LOCATIONS MAP

PROJECT NO.:	21-368	DATE:	November 3, 2021
SCALE:	N.T.S.	DRAWING NO.:	1



NOTES:
 Drawing provided by WSP.

Legend
 CMT Borehole (2021)



NO.	DESCRIPTION	DATE

REVISIONS

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 St. Clements, Ontario NOB 2M0
 Tel.: 519-699-5775
 Fax: 519-699-4664
 www.cmtinc.net

PROJECT:
 Reconstruction of Bridge
 B109133
 Wellington Road 109,
 Arthur, Ontario

DRAWING TITLE:
 SURVEY DRAWING SHOWING
 BOREHOLE LOCATIONS

PROJECT NO.: 21-368	DATE: November 3, 2021
SCALE: N.T.S.	DRAWING NO. 2

APPENDIX A

BOREHOLE LOGS



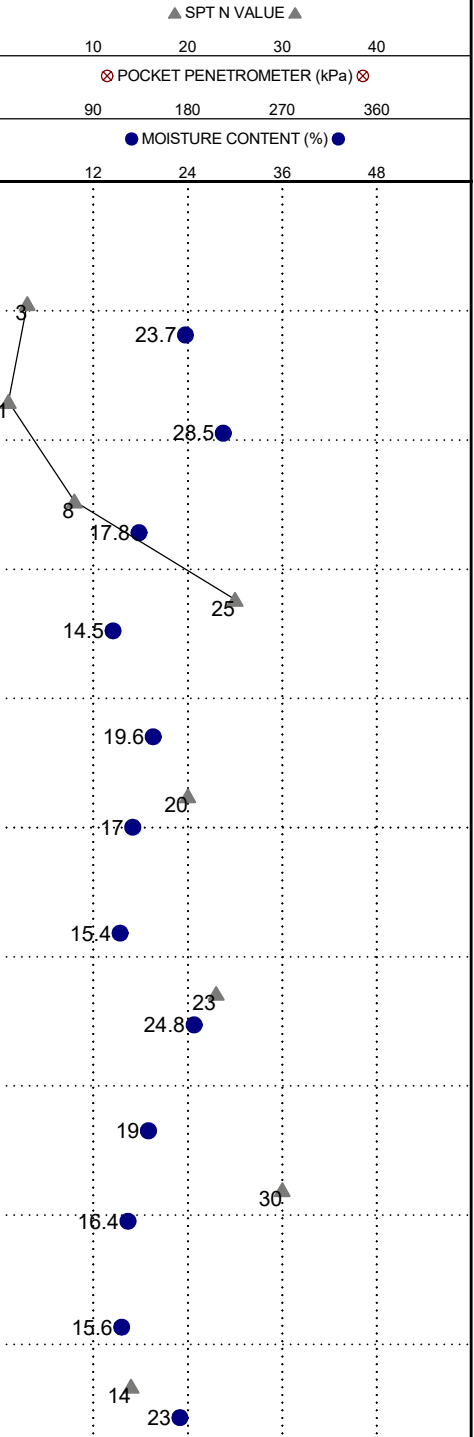
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER BH1

PROJECT: Reconstruction of Bridge B109133
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 461.92 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368
DRILLING DATE: 8-10-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
1	[Cross-hatched]	ASPHALT: Asphaltic Concrete (125 mm)	0.00, 461.92	SPT 1	203	40-50				
		GRANULAR FILL: Very dense, brown, sand and gravel fill, trace silt and clay, moist	0.13, 461.80							
2	[Wavy]	SILTY SAND FILL: Very loose, dark brown, silty sand fill, moist	0.76, 461.16	SPT 2	100	1-1-2-3 (3)				
		TOPSOIL: Very loose, dark brown, silty organic topsoil, moist (1,550 mm)	0.84, 461.08							
3	[Wavy]	CLAY AND SILT: Loose, brown, clay and silt, trace sand and gravel, moist	2.39, 459.53	SPT 3	100	0-0-1-4 (1)				
4	[Diagonal lines]	CLAY AND SILT: Loose, brown, clay and silt, trace sand and gravel, moist	2.39, 459.53	SPT 4	100	1-2-6-8 (8)				
		becoming compact	3.05, 458.87	SPT 5	100	5-11-14 (25)				
5	[Diagonal lines]			MC5 6	100					
6	[Diagonal lines]			SPT 7	100	10-9-11-13 (20)				
7	[Diagonal lines]			MC5 8	100					
8	[Diagonal lines]			SPT 9	100	9-11-12-14 (23)				
9	[Diagonal lines]			MC5 10	100					
9	[Diagonal lines]			SPT 11	100	11-15-15-10 (30)				
9	[Diagonal lines]			MC5 12	100					
9	[Diagonal lines]			SPT 13	100	9-7-7-9 (14)				
		becoming very moist	9.14, 452.78							



Caving was encountered upon completion of the borehole at a depth of approximately 8.84 m (El. 453.08 m) below ground surface.
 Bottom of borehole at 9.75 m, Elevation 452.17 m.

BOREHOLE LOG2 21-368 BRIDGE 4.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-16-21



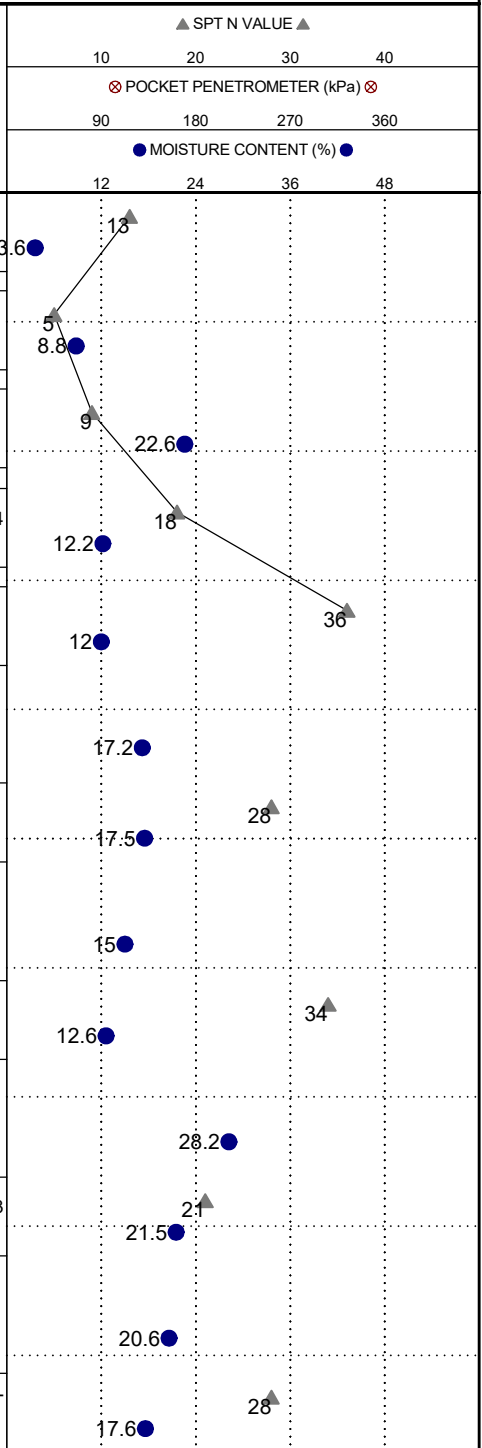
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER BH2

PROJECT: Reconstruction of Bridge B109133
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 461.90 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368
DRILLING DATE: 8-11-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
0.00		ASPHALT: Asphaltic Concrete (325 mm)	461.90	SPT 1	100	30-8-5-7 (13)				
0.33		GRANULAR FILL: Dense brown, sand and gravel fill, moist	461.58							
1.18		SILTY SAND FILL: Loose, dark brown, silty sand fill, moist to wet	460.72	SPT 2	100	2-2-3-5 (5)				
1.18				SPT 3	100	4-5-4-4 (9)				
2.29		CLAY AND SILT: Compact to dense, brown, clay and silt, trace sand and gravel, moist	459.61	SPT 4	100	3-7-11-14 (18)				
2.29				SPT 5	100	8-18-18-19 (36)				
				MC5 6	100					
				SPT 7	100	6-12-16-18 (28)				
				MC5 8	100					
				SPT 9	100	9-16-18-18 (34)				
				MC5 10	100					
6.71		becoming very moist	455.19	SPT 11	95	8-8-13-13 (21)				
6.71				MC5 12	100					
8.89		SILT: Compact, brown, silt, some clay, trace sand, wet	453.01	SPT 13	75	13-13-15-16 (28)				



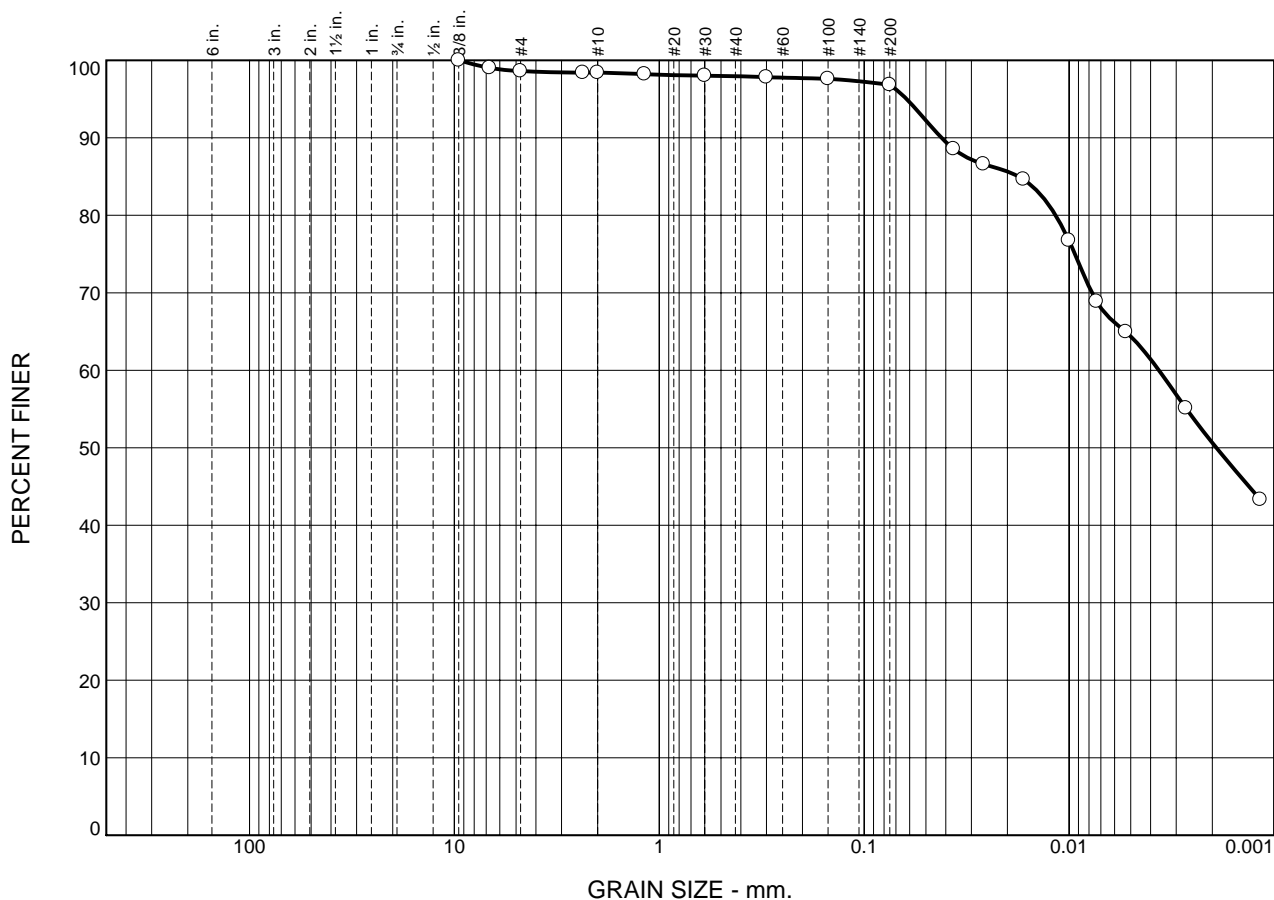
Caving was encountered upon completion of the borehole at a depth of approximately 8.08 m (El. 453.82 m) below ground surface.
 Bottom of borehole at 9.75 m, Elevation 452.15 m.

BOREHOLE LOG2 21-368 BRIDGE 4.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-16-21

APPENDIX B

GRAIN SIZE ANALYSES

Particle Size Distribution Report

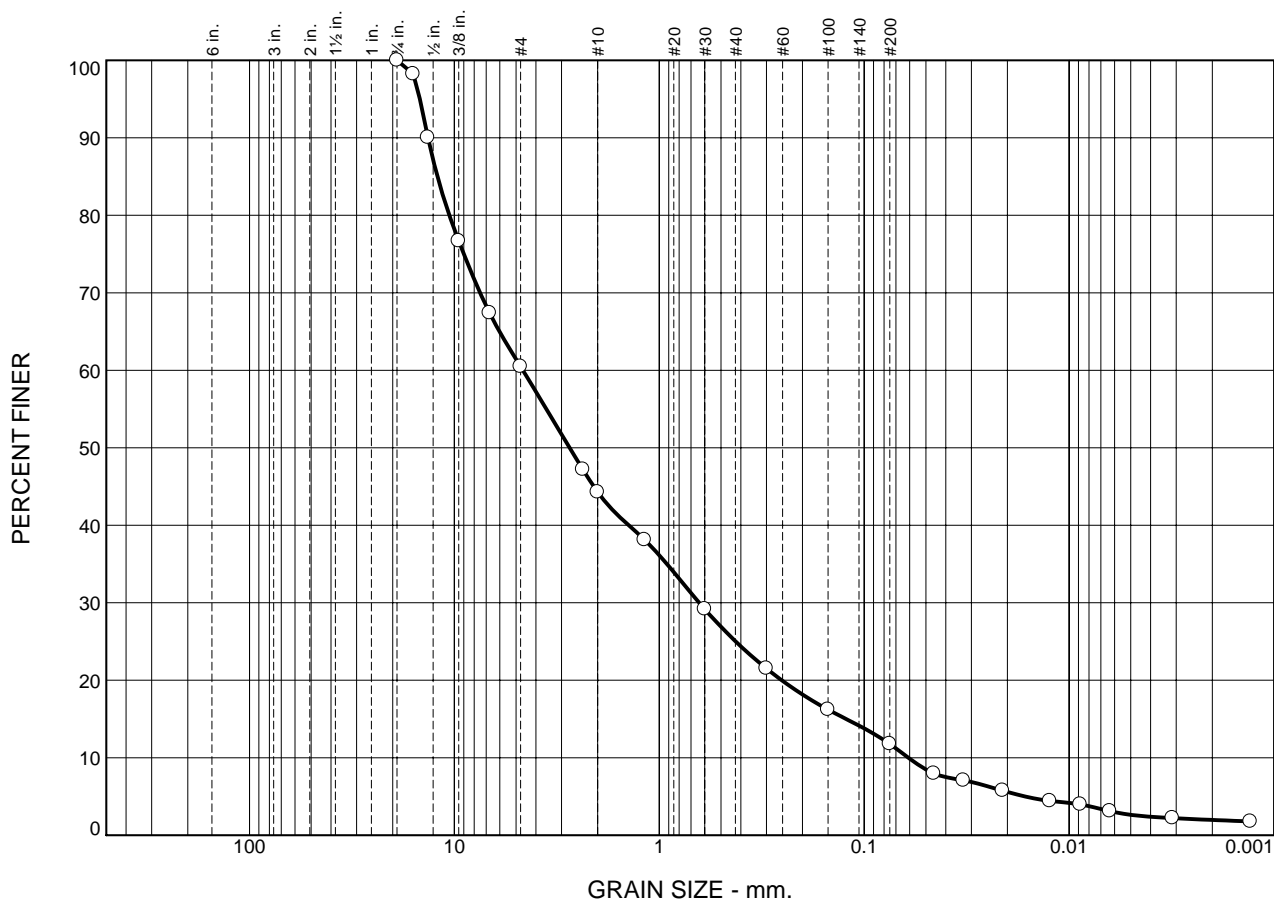


	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.4	0.2	0.4	1.2	46.1	50.7

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	6	3.66-457m	clay and silt, trace sand and gravel	ML
				Sampled by BF of CMT Engineering Inc., August 10, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

<p>CMT Engineering Inc.</p> <p>St. Clements, ON</p>	<p>Client: County of Wellington</p> <p>Project: Reconstruction of Conestogo River Bridge 4 (Structure B109133) Wellington Road 109, Arthur, Ontario</p> <p>Project No.: 21-368</p> <p style="text-align: right;">Figure 1</p>
---	---

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	39.5	16.2	19.3	13.2	9.8	2.0

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	1	0.25-0.6m	sand and gravel, trace silt and clay	SW-SM
				Sampled by BF of CMT Engineering Inc., August 10, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.

St. Clements, ON

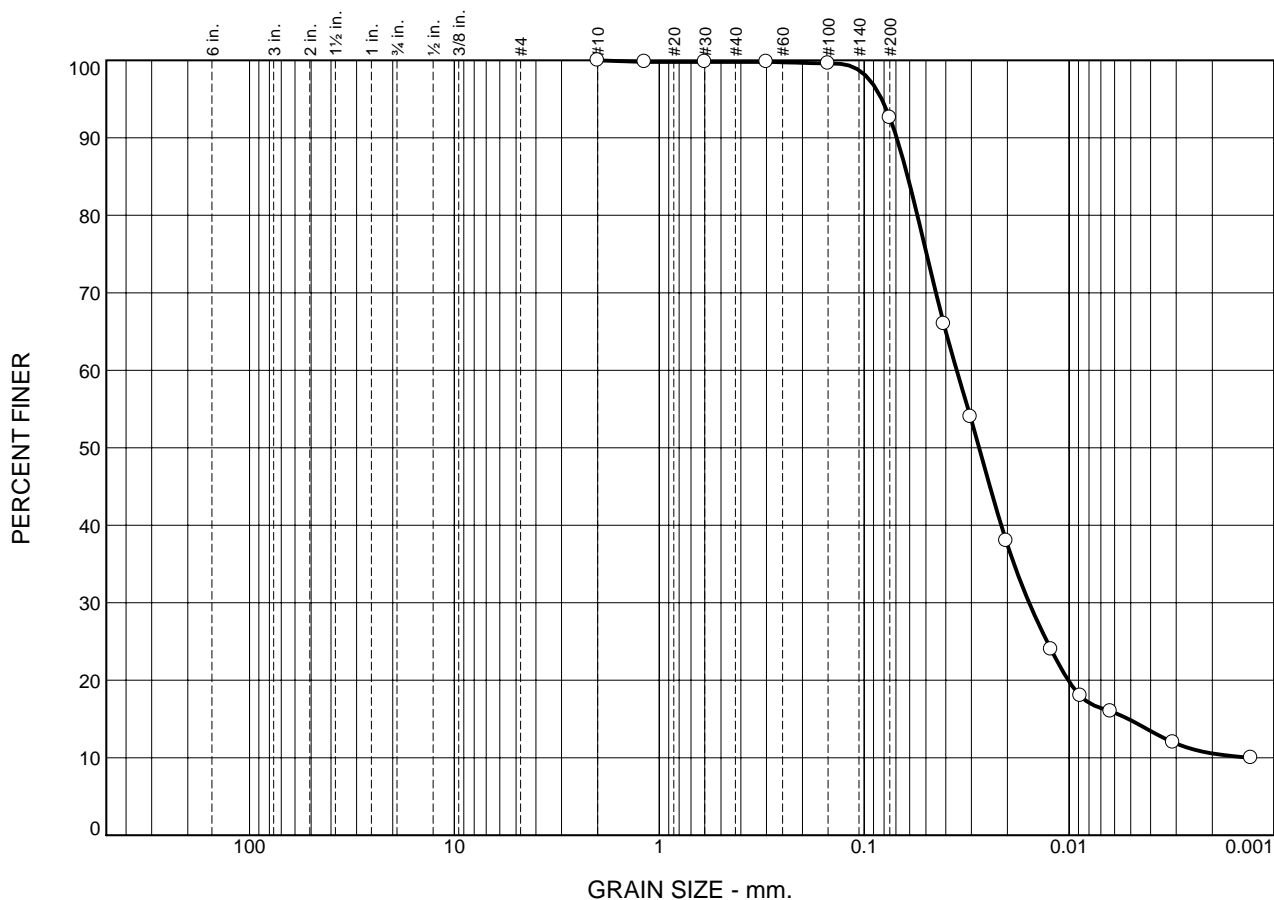
Client: County of Wellington

Project: Reconstruction of Conestogo River Bridge 4 (Structure B109133)
Wellington Road 109, Arthur, Ontario

Project No.: 21-368

Figure 2

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.2	7.2	82.0	10.6

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	12	8.89-9.14m	silt, some clay, trace sand	ML
				Sampled by BF of CMT Engineering Inc., August 10, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: County of Wellington
Project: Reconstruction of Conestogo River Bridge 4 (Structure B109133)
 Wellington Road 109, Arthur, Ontario
Project No.: 21-368

GEOTECHNICAL INVESTIGATION

**RECONSTRUCTION OF CONESTOGO RIVER
BRIDGE NO. 10, STRUCTURE B109134
WELLINGTON ROAD 109
ARTHUR, ONTARIO
COUNTY OF WELLINGTON**

CMT Project 21-368(c).R01

PREPARED FOR:

County of Wellington

November 30, 2021





CMT Engineering Inc.
1011 Industrial Crescent, Unit 1
St. Clements, Ontario N0B 2M0
Tel: 519-699-5775
Fax: 519-699-4664
www.cmtinc.net

November 30, 2021

21-368(c).R01

County of Wellington
74 Woolwich Street
Guelph, Ontario
N1H 3T9

Attention: Mr. Joe de Koning

Dear Sir:

**Re: Geotechnical Investigation
Reconstruction of Conestogo River Bridge No. 10, Structure B109134
Wellington Road 109
County of Wellington, Ontario**

As requested, CMT Engineering Inc. conducted a geotechnical investigation at the above-referenced site, and we are pleased to present the enclosed report.

We trust that this information meets your present requirements, and we thank you for this opportunity to have been of service. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

Brandon Figg

Brandon R Figg, C. Tech.

ks

1cc: WSP Canada - Jamie Yeung, P.Eng., Ph.D.

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Drawing 1 – Location Map

Drawing 2 – Survey Drawing Showing Borehole Locations

Appendix A – Borehole Logs

Appendix B – Grain Size Analysis

1.0 INTRODUCTION

The services of CMT Engineering Inc. were retained by Mr. Jamie Yeung, P.Eng., Ph.D. of WSP Canada, to carry out a geotechnical investigation for the proposed Reconstruction of Bridge No. 10, Structure B109134 located on Wellington Road 109 in the County of Wellington, Ontario.

It is understood that the bridge reconstruction is to comprise the removal of the existing concrete parapet walls/railings, and construction of the new bridge abutments that will be located outside of the existing abutments (which are intended to be left in place). It was also unclear at the time of the investigation if a temporary bridge will be installed adjacent the existing bridge for traffic flow. The location of the structure is shown on Drawing 1.

The purpose of the geotechnical investigation was to assess the existing soil and groundwater conditions encountered in the boreholes. Included in the assessment are the soil classification and groundwater observations, as well as comments and recommendations regarding geotechnical resistance (bearing capacity); serviceability limit states (anticipated settlement); dewatering considerations; site classification for seismic site response; soil properties; recommendations for site grading, excavations and backfilling; pavement design; and a summary of the laboratory results.

The recommendations in this report are solely based on the soil conditions encountered in the boreholes located at the subject site.

2.0 EXISTING SITE CONDITIONS

Wellington Road 109 is a paved two-lane highway with typically steep side slopes down into the roadside ditches. The existing structure comprises a concrete structure with an approximate span of 20.5 m and approximately 3.8 m from the paved driving surface to the river bottom. The location of the site is shown on Drawing 1.

3.0 FIELD AND LABORATORY PROCEDURES

Prior to the commencement of the field drilling program, public underground service locates (Ontario One Call) were undertaken to ensure that underground utilities would not be damaged, or personnel were injured.

The field investigation was conducted on August 11, 2021 and comprised the advancement of two (2) boreholes (referenced as Borehole 1 and Borehole 2) utilizing a Geoprobe 7822DT drillrig operated by CMT Drilling Inc. Boreholes 1 and 2 were advanced to approximate depths of 8.23 m (27.0 ft) below the ground surface elevation. Borehole 1 was located approximately 3.2 m south and 4.0 m west of the northwest corner of the existing structure, on the northwest side of the existing bridge structure, while Borehole 2 was located approximately 3.3 m south

and 4.7 m east of the northeast corner of the existing structure, on the northeast side of the existing bridge structure.

Standard penetration testing and sampling was carried out in the boreholes using 38 mm inside diameter split spoon sampling equipment and an automatic hammer, in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". SPT soil sampling was generally conducted at 0.76 m (2.50 ft) intervals to approximately 3.05 m (10.00 ft) depth, and every 1.52 m (5.00 ft) thereafter, to borehole termination. Macro core (MC5) direct push sampling was generally conducted between the SPT soil samples obtained below 3.05 m (10.00 ft) depth. Technical staff from CMT Inc. observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations.

A representative soil sample from the following borehole and depth was submitted to the CMT Inc. laboratory in St. Clements, Ontario for grain size analysis:

- Borehole 1: depth – 3.05 m to 3.66 m (10.00 ft to 12.00 ft)

The borehole logs are provided in Appendix A. The resulting grain size analysis is presented in Appendix B.

The ground surface elevations (geodetic) at the borehole locations were surveyed by WSP staff and reported to CMT Inc. on November 4, 2021. The ground surface elevations (geodetic) at the borehole locations ranged from approximately 464.97 m to 465.00 m. The locations of the boreholes are shown on Drawing 2.

4.0 SUBSOIL CONDITIONS

The soils encountered in the boreholes are described briefly below and a more detailed stratigraphic description is provided on the borehole logs in Appendix A. The following paragraphs have been simplified into terms of major soil strata. The soil boundaries indicated have been inferred from non-continuous samples and observations of sampling and drilling resistance and typically represent transitions from one soil type to another rather than exact planes of geological change. Further, the subsurface conditions are anticipated to vary beyond the borehole locations.

4.1 Asphaltic Concrete

Asphaltic concrete (asphalt) was encountered at the surface of both boreholes. The thickness of the asphalt at the borehole locations ranged from approximately 425 mm to 475 mm (average 450 mm). The asphalt thickness is anticipated to vary throughout the project area.

4.2 Granular Fill

Loose to very dense, brown granular fill was encountered underlying the asphalt in both boreholes. The thickness of the granular fill at the borehole locations ranged from approximately 560 mm to 1,090 mm (average 825 mm). The thickness of the granular fill is anticipated to vary throughout the project area.

4.3 Buried Topsoil

Dark brown, silty organic topsoil was encountered below the granular fill at the borehole locations. The thickness of the buried topsoil ranges between approximately 770 mm and 940 mm. The buried topsoil was considered to be very loose to loose, with SPT N-values ranging from 3 to 6 blows per 0.30 m (average 5 blows per 0.30 m). The topsoil was considered to be moist, with moisture contents ranging from about 15.5% to 33.8% (average 24.7%). It should be expected that the topsoil thickness is anticipated to vary throughout the project area. Materials noted as topsoil in this report were classified based on visual and textural evidence. Testing of organic content or for other nutrients was not carried out.

4.4 Silt and Clay

Brown silt and clay, with trace sand and gravel was encountered underlying the buried topsoil in both boreholes. The silt and clay was considered to be compact to dense, with SPT N-values ranging from 12 to 34 blows per 0.30 m (average 23 blows per 0.30 m). The silt and clay was considered to be moist, with moisture contents ranging from about 9.9% to 14.4% (average 12.2%).

4.5 Silt and Clay Till

Brown silt and clay till, with trace sand and gravel was encountered underlying the silt and clay in the boreholes. The silt and clay was considered to be very dense, with SPT N-values ranging from 81 to greater than 100 blows per 0.30 m (average 91 blows per 0.30 m). The silt and clay till was considered to be moist, with moisture contents ranging from about 5.6% to 8.5% (average 7.1%).

4.6 Groundwater

A zone of wet soils was observed within Borehole 1. The existing silt and clay and/or silt and clay till soils encountered in the boreholes are typically very dense and low in permeability and have the potential to create perched water conditions. These perched conditions would be expected to occur near the interface of the more permeable upper soils and the less permeable lower soils. It should be noted that groundwater conditions (particularly perched water) are generally dependent on the water level of the river, amount of precipitation, control of surface water, as well as the time of year, and can fluctuate significantly in elevation and volume. Groundwater levels and wet soil conditions encountered could make some excavations difficult. It should be expected that caving or sloughing of the excavation walls will occur, especially when excavating into very moist, wet or saturated soils. The following table summarizes the groundwater observations at each borehole:

Borehole No.	Ground Surface Elevation (m)	Estimated Zone of Wet to Saturated Zones (m)	Bottom of Borehole Elevation (m)
1	465.00	457.31 to 456.77 (termination)	456.77
2	464.97	--	456.74

Recommendations with respect to dewatering conditions are provided in Section 5.7 of this report.

5.0 DISCUSSION AND RECOMMENDATIONS

This section of the report provides CMT Inc.'s interpretation of the factual geotechnical data obtained during the investigation and is intended for the guidance of the owner and design engineer. Where comments are made on construction, they are provided only to highlight those aspects which could affect the design of the project. Contractors bidding on or undertaking the work should make their own independent interpretation of the factual subsurface information provided as it affects their proposed construction means and methods, equipment selection, scheduling, pricing, and the like.

Utilizing the information gathered during the geotechnical investigation and assuming that the borehole information is representative of the subsoil conditions throughout the site, the following comments and recommendations are provided.

5.1 Serviceability and Ultimate Limit Pressure

Based on the information obtained from the boreholes, the following table provides a summary of the estimated geotechnical reaction at the Serviceability Limit State (SLS) and the factored geotechnical resistance at the Ultimate Limit State (ULS) at the various elevations, including soil type:

BH No.	Ground Surface Elevation (m)	SLS kPa (psf)	ULS kPa (psf)	Estimated Highest Founding Elevations (m)	Depth Below Existing Grade to Founding Elevation (m)	Soil Type
1	465.00	150 (3,000)	225 (4,500)	462.71 to 459.67	2.29	Silt and Clay
		250 (5,000)	325 (6,500)	459.67 to 456.77 (termination)	5.33	Silt and Clay Till
2	464.97	150 (3,000)	225 (4,500)	462.68 to 458.87	2.29	Silt and Clay
		250 (5,000)	325 (6,500)	458.87 to 456.74 (termination)	6.10	Silt and Clay Till

Note: The founding soils are recommended to be in a drained state at the time of construction.

Based on the bearing capacities and elevations provided in the table above, suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS can be found below an approximate depth of 2.29 m at the borehole locations, while suitable founding elevations for conventional foundations designed with a minimum bearing capacity of 250 kPa (5,000 psf) at SLS and 325 kPa (6,500 psf) at ULS can be found below approximate depths of 5.33 m and 6.10 m at the borehole locations.

Provisions for site dewatering and soil stabilization through the placement of a crushed clear stone base or concrete mud mat (as required) should be included in the tender documents.

It is recommended that the founding soils be assessed at the time of construction by qualified geotechnical personnel in order to confirm their founding suitability. Should the soils be unsuitable to support the foundation at the proposed founding elevations, the unsuitable soils must be further subexcavated and either the footings be lowered to found on approved soils or the low bearing soil may be replaced with imported granular structural fill. Should footings be designed to be constructed at elevations higher than the elevations indicated in the table above, then structural fill will be required in order to achieve the design grades for the proposed foundations. The serviceability limit pressure

for good quality structural fill (OPSS 1010 Granular 'A', OPSS 1010 Type II or Type III Granular 'B') placed and compacted in accordance with Section 5.5 of this report is estimated to be 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf). Alternatively, lean mix concrete fill could be used to achieve the design grades for the proposed foundations.

It should be noted that the footings require a minimum of 1.2 m (4.0 ft) of soil cover to provide against frost action. Additionally, the footings are recommended to be constructed at least 1.2 m below the maximum scour depth.

With respect to the Serviceability Limit State (SLS), the total differential footing settlements are not expected to exceed the generally acceptable limits of 25 mm (1") and 19 mm (3/4") respectively, assuming a minimum footing width of 0.6 m.

5.2 Seismic Site Classification

The site classification for seismic response in Table 4.1.8.4 of the 2012 Ontario Building Code relates to the average properties of the upper 30.0 m of strata. The information obtained in the geotechnical field investigation was gathered from the upper 8.23 m of strata. Based on the information gathered in the geotechnical field investigation, the site classification for seismic site response would be considered Site Class D (stiff soil) for structures founded on the native soils at the recommended founding elevations provided in Section 5.1 of this report. For foundations constructed on structural fill, placed in accordance with Section 5.5 of this report, the site classification for seismic site response would also be considered Site Class D (stiff soil).

The structural engineer responsible for the design of the structure should review the earthquake loads and effects.

5.3 Existing Bridge Demolition and Removal or Relocation of Existing Services

All concrete components of the existing structure, as well as all existing backfill material, must be removed from areas of the proposed replacement structure. The excavations must be inspected and backfilled (as required) according to the procedures outlined in Section 5.5 of this report. It is recommended that imported sand and gravel (OPSS 1010 Type II or III Granular 'B' or an approved alternative) be placed as structural fill to backfill the demolition area (as required).

Any existing underground services (if present) that may be located within the proposed new structure envelope should be removed/relocated. If left in place, the location of existing services must be reviewed to ensure that they do not conflict with proposed foundation locations. All terminated pipes must be completely sealed with watertight mechanical covers, concrete or grout at termination points to prevent the migration of soils into pipe voids which can result in potential settlement. All existing trench backfill material associated with any existing underground services must be subexcavated and the

subsequent excavation should be backfilled with approved soils placed in accordance with Section 5.5 of this report.

5.4 Excavations

All excavations must be carried out in accordance with Ontario Regulation 213/91 (Reg 213/91) of the Occupational Health and Safety Act and Regulations for Construction Projects.

Type 3 Soils – The existing fill material and the native soils encountered in the boreholes, in a drained state (not saturated) would be classified as Type 3 soils under Reg 213/91 and must be sloped to the bottom of the excavation at a minimum gradient of 1 horizontal to 1 vertical. Soils that are underlain by Type 4 soils that are exposed in the excavation or soils that are in a saturated condition must be treated as Type 4 soils (addressed below).

Type 4 Soils - In general, the saturated sand soils would be classified as Type 4 soils under Reg 213/91. Type 4 soils must be sloped from the bottom of the excavation at a minimum gradient of 3 horizontal to 1 vertical.

If it is not practical to excavate according to the above requirements, then a trench support system (designed in accordance with the Ontario Health and Safety Act Regulations) may be utilized. When using a temporary trench support system consisting of trench boxes to reduce the lateral extent of the excavations, it should be noted that the support system is intended primarily to protect workers as opposed to controlling lateral soil movement. Any voids between the excavation walls and the support system should be immediately filled to reduce the potential for loss of ground and to provide support to existing adjacent utilities and structures, and it is recommended that the excavation be carried out in short sections, with the support system installed immediately upon excavation completion.

Sloughing/caving of the excavation walls should be expected when excavating into very moist, wet and saturated soils. As such, it may be necessary to increase the width of the excavation to accommodate sloughing/caving soils.

5.5 Structural Fill

Currently, the design founding elevation of the replacement structure is not available. Following the subexcavation of all fill, any organic soils that may be encountered, and any loose, native soils deemed unsuitable to support the design bearing capacity, the exposed subgrade must be thoroughly inspected by qualified geotechnical personnel and any soft or unstable areas observed must be subexcavated and replaced with approved fill materials.

Any structural fill materials (if required) should be placed according to the following procedures:

- Prior to placement of any structural fill, the subgrade for the proposed foundations must be prepared large enough to accommodate a 1:1 slope commencing a distance of 1.0 m beyond the outside edges of the proposed foundations down to approved, competent native founding soils;
- If saturated founding soil conditions are encountered during construction, it will be necessary to construct either a crushed clear stone granular base (meeting the gradation and physical property requirements of OPSS 1004) or a concrete mud mat in order to prevent disturbance of the founding soils during construction. The contractor should have the crushed clear stone or concrete available for placement immediately following the completion of the excavation and subsequent inspection and approval by qualified geotechnical personnel;
- Imported granular fill (OPSS 1010 Type II or Type III Granular 'B' is recommended for use as structural fill) can be compacted utilizing adequate heavy vibratory smooth drum or padfoot compaction equipment (compaction with padfoot equipment requires that structural fill be placed a minimum 0.3 m above the design footing grade in order to account for the disturbance of the founding soils from the pads on the compaction equipment, or the final lift at the founding elevation can be compacted utilizing a smooth drum vibratory compactor or a large diesel vibratory plate compactor). Soils approved for use as structural fill must be placed in loose lifts not exceeding 0.3 m (12") in depth for granular soils (recommended fill materials) or the capacity of the compactor (whichever is less);
- Approved fill materials must be at suitable moisture contents to achieve the specified compaction. The saturated native soils observed in the borehole would require extensive air-drying in order to achieve the specified density and therefore, are not recommended for use as structural fill. Soil moisture will also be dependent on weather conditions at the time of construction;
- Approved structural fill materials that will support the structure must be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD);
- Approved bulk fill (backfill and bulk fill that will not support footings) must be compacted to a minimum 95% SPMDD.

All approved structural fill placed according to the above procedures will be considered capable of supporting foundations designed with a minimum bearing capacity of 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS.

It is imperative that when very dense/hard cohesive soils (clay and/or silt) are utilized as fill, the material must be broken down (pulverized) to minimize void space and reduce the potential for settlement. Problems associated with compacting cohesive soils include the potential for long-term settlement due to excessive void space caused by the generally blocky structure of the excavated soils. Therefore, the contractor must have equipment on-site that can effectively break down the cohesive excavated soil into workable sizes (as required). Backfilling utilizing this material must be performed in thin lifts with considerable compactive effort applied, thereby reducing the void space and minimizing long-term settlement. This process could be difficult and time-consuming. Based on the above, any cohesive silt/clayey silt soils should not be utilized as structural fill.

5.6 Foundation Subgrade Preparation

The native soils encountered in the boreholes are sensitive to changes in moisture content and can become loose/soft if the soils are subjected to additional water or precipitation. The native subgrade soils could also be easily disturbed if traveled on during construction. Once they become disturbed, they are no longer considered adequate for the support of shallow foundations. To ensure and protect the integrity of the founding soils during construction operations, the following is recommended:

- It is recommended to construct a concrete mud slab or crushed clear stone base to protect the structural integrity of the founding soils when cast-in-place footings are proposed. In the event that precast structures are proposed, a clear stone base is suggested in order to allow for more efficient levelling;
- During construction, the subgrade should be sloped or ditched (as required) to the outside of the structure footprint in the excavation to promote surface drainage of rainwater or seepage and the collected water should be pumped out of the excavation. It is critical that all water be controlled (not allowed to pond) and that the subgrade and foundation preparation commence in dry conditions;
- Construction equipment travel and foot traffic on the founding soils should be minimized;
- If construction is to be undertaken during subzero weather conditions, the founding native soils and any potential fill materials must be maintained above freezing;
- Prior to pouring concrete for the footings, the footing area must be cleaned of all disturbed or caved materials;
- The foundation formwork and concrete should be installed as soon as practical following the excavation, inspection and approval of the founding soils. The longer that the excavated soils remain open to weather conditions and groundwater seepage, the greater the potential for construction problems to occur;

- If it is expected that the founding soils will be left open to exposure for an extended period of time, it is recommended that a 75 mm concrete mud slab be poured in order to protect the structural integrity of the founding soils.

5.7 **Construction Dewatering**

Seepage control requirements and groundwater conditions during construction are generally dependent on the water level of the river, amount of precipitation, control of surface water, the time of year, the area of work on the site, as well as the depth of the excavations, and can fluctuate significantly in elevation and volume. As such, it is critical that provisions for site dewatering be part of the bridge reconstruction process. Seepage should generally be adequately controlled using conventional construction dewatering techniques such as ditching (as required) and pumping from sump pits. It may be required to excavate a larger working area in order to facilitate effective drainage of founding soils. Should heavy seepage be encountered, it may be necessary to increase the number of pumps during construction to effectively drain larger construction areas. Sloughing/caving of the excavation walls should be expected when excavating into wet to saturated soils. It should also be expected that pumps and hoses may plug up with fine-grained soils, resulting in the requirement for continuous maintenance.

Dewatering works should be designed and constructed in accordance with requirements of regulatory agencies such as the Ministry of Natural Resources and the Ministry of the Environment, Conservation and Parks. Dewatering should be performed in accordance with OPSS 517 and the control of water must be in accordance with OPSS 518. It is the responsibility of the contractor to propose a suitable dewatering system based on the groundwater elevation at the time of construction. Collected water should discharge a sufficient distance away from the excavation to prevent re-entry. Sediment control measures must be installed at the discharge point of the dewatering system to avoid any potential adverse impacts on the environment.

Seasonal variations in the groundwater should be expected, with higher levels generally occurring during the wet weather seasons in the spring and fall, and lower levels occurring during dry weather conditions. Therefore, in order to minimize the amount of water encountered during construction, it is recommended that the construction be performed during the typically drier summer months. It will be necessary to utilize a temporary dam technique in order to divert the water away from the construction area and prevent any surface water from flowing into the excavations. Products such as Nilex Aqua Barrier are commonly used for this application. Aqua Barrier is a water-inflated dam system that acts as a barricade and prevents water from entering the work area. The controlled water is then pumped around the construction area.

5.8 Wing Walls

5.8.1 Culvert/Abutments and Wing Wall Backfilling

To promote drainage behind the abutments and wing walls (if constructed) and alleviate hydrostatic pressure, the structures are to be backfilled with a free-draining granular material such as Granular 'B' (OPSS 1010), extending out a minimum lateral distance of 1200 mm from the wall. The backfill should be placed in accordance to OPSD 3101.150. It should be noted that the soils that are expected to be encountered in the excavations are not considered to be free-draining.

The backfill material used against the structure walls must be placed so that the allowable lateral earth pressures on the walls are not exceeded. Backfilling operations should be carried out with the following minimum requirements:

- Adequate vibratory compaction equipment (suited to soil type and proximity to walls) should be used to compact the soils;
- Loose lift thicknesses should not exceed 0.3 m (12") for granular soils or the capacity of the compactor (whichever is less);
- The soils must be at suitable moisture contents to achieve compaction to a minimum 100% SPMDD underlying the pavement structure;
- Backfill materials beyond the 1200 mm distance from the structure walls and below the frost taper may consist of approved excavated native soils that are at suitable moisture contents to achieve the specified compaction and with no particles greater than 250 mm in diameter and contain no topsoil or other deleterious materials.

5.8.2 Abutment and Wing Wall Drainage

Drainage behind abutments and wing walls (if constructed) is of paramount importance. As such, it is recommended to install wall drains (as required) and a drainage system in accordance with OPSD 3101.150. It is recommended to install minimum 100 mm diameter perforated drainage tiles to collect and redirect water at the base of the abutments and wing walls. The perforated drainage tiles should be installed at a depth that provides optimal drainage but must also allow for positive drainage towards a gravity outlet. The drainage tiles should be wrapped completely in a geotextile filter fabric such as Terrafix 270 or equivalent. The drainage tiles will reduce the potential for future hydrostatic pressures acting on the structure. A rodent guard should be installed at the outlet(s).

5.8.3 Frost Tapers

Frost tapers must be constructed in order to reduce the effects of differential frost action in the bridge/culvert approaches. The frost tapers should be constructed in accordance with OPSD 3101.150. According to the OPSD requirements, the required length of the frost taper must be at least 6.0 m, as measured from the outer limit of the culvert/abutment backfill. The frost taper must be constructed on both sides utilizing the OPSS 1010 granular material that is used for the culvert/abutment and wing wall backfill.

5.8.4 Lateral Earth Pressure

Permanent subsurface walls are to be designed to resist lateral earth pressures, which can be calculated by the following:

$$P = K (\gamma h + q)$$

where: P = horizontal pressure at depth

h = depth of soil to footing (m)

K = earth pressure coefficient

γ = bulk unit weight of soil (kN/m³)

q = complete surcharge loading (kPa) (kN/m²)

This equation assumes that the backfill is free-draining and that an adequate drainage system with a positive drainage outlet have been placed below the footing level.

Computation should be performed in accordance with the latest edition of the Canadian Highway Bridge Design Code. Soil properties presented in the following section should be utilized in the computation.

5.8.5 Soil Design Parameters

The following table provides the estimated soil design parameters for imported granular fill, as well as the existing native soils encountered on-site. It should be noted that earth pressure coefficients (K_a , K_p , K_o) provided are for flat ground surface conditions and will differ for areas with slopes or embankments.

The estimated soil design parameters can be utilized for the design of perimeter shoring, foundations and retaining walls, as required:

Soil Type	Soil Density (kg/m ³)	Friction Angle (Degree)	Coefficient of Active Pressure (K _a)	Coefficient of Passive Pressure (K _p)	Coefficient of At-Rest Pressure (K ₀)	Coefficient of Friction (μ)
Imported Granular 'A'/ Granular 'B' (OPSS 1010)	2,100	34°	0.28	3.54	0.44	0.45
Existing Fill	1,800	28°	0.36	2.77	0.53	0.35
Silt and Clay	1,850	28°	0.36	2.77	0.53	0.35
Silt and Clay Till	1,900	32°	0.31	3.25	0.47	0.42

5.9 Service Pipe Bedding

The native soils encountered in the geotechnical investigation are generally considered suitable for indirect support of site service pipes (if installed). Should instability due to saturated soil conditions be encountered, it may be necessary to increase the thickness of the granular base and utilize 19 mm clear stone to create an adequate supporting base for the service pipes and/or manholes.

Pipe embedment, cover and backfill for both flexible and rigid pipes should be in accordance with all current and applicable OPSD, OPSS and OBC standards and guidelines and as follows:

Flexible Pipes – The pipe bedding should be shaped to receive the bottom of the pipe. If necessary, pipe culvert frost treatment should be undertaken in accordance with OPSD-803.031. The trench excavations should be symmetrical with respect to the centreline of the pipe. The granular material placed under the haunches of the pipe must be compacted to 95% SPMDD prior to the continued placement and compaction of the embedment material. The homogeneous granular material used for embedment should be placed and compacted uniformly around the pipe. Should wet conditions be encountered at the base of the trench, then the pipe bedding should consist of 19 mm clear stone (meeting OPS Specifications) wrapped completely in a geotextile fabric such as Terrafix 270 or equivalent.

Rigid Pipes - In general, the pipe installation recommendations for rigid pipes are the same as those for flexible pipes, except that the minimum bedding depth below a rigid pipe should be 0.15D (where D is the pipe diameter). In no case should this dimension be less than 150 mm or greater than 300 mm.

Any service pipes that are not provided with sufficient frost coverage must be protected with the necessary equivalent thermal insulation. The general contractor is responsible to protect service piping from damage by heavy equipment.

5.10 Pavement Design

The existing granular base was not tested with respect to OPSS 1010 gradation requirements for Granular 'B'; however, typically granular base materials that have been in place over a prolonged period of time do not meet the gradation requirements of OPSS 1010 and are not generally considered suitable for reuse in the new pavement structure. In most cases, the materials exceed the allowable amount of fine soils (materials passing the #200 sieve). The elevated fines content can generally be attributed to mechanical breakdown of the aggregate which occurs over time due to vehicular traffic as well as freeze/thaw cycles. As such, it is recommended that imported OPSS 1010 Granular 'B' and OPSS 1010 Granular 'A' materials be utilized in any new pavement structure. It is recommended that the existing granular base be utilized as bulk fill, as required.

The native subgrade soils are sensitive to changes in moisture content and may become loose or soft if the soils are subject to inclement weather and seepage or severe drying. Furthermore, the subgrade soils could be easily disturbed if traveled on during construction. As such, where this material will be exposed, it is recommended that the granular subbase be placed immediately upon completion and inspection of the subgrade preparation to protect the structural integrity of the subgrade soils.

Prior to placement of the granular subbase, the subgrade soils should be proof-rolled, and any soft or unstable areas observed should be subexcavated and replaced with suitable drier materials, compacted to a minimum of 95% SPMDD. Frost tapers must be constructed as per Section 5.8.3 of this report.

Should wet conditions be encountered during construction, site assessments may be required to determine what options can be undertaken to construct a modified pavement base. These options may include subexcavation of wet soils and increasing the thickness of the granular base, the use of reinforcing geotextiles and/or geogrids, or a combination of all.

The subgrade should be graded smooth and be free of depressions with a minimum grade of 3% towards the roadside ditch.

The vegetation on the existing shoulder would be expected to impede drainage of the granular base/subbase as well as surface drainage which can result in ponding of surface water (rain as well as melted snow and ice). In order to improve drainage of the road structure, it is recommended that, if feasible, the granular subbase should daylight in the shoulder rounding which should be free of vegetation; the granular shoulder should also be sloped at 6% to the rounding breakpoint, all in accordance with OPSD 200.010,

OPSD 206.010 and/or OPSD 209.010. Consideration must be given in the road design to ensure that the gravel shoulder rounding is not subject to erosion by excessive overland flow of surface water.

It is assumed that the road may be subjected to both heavy loading (delivery trucks, school buses, tractors, snow removal and maintenance equipment, and emergency vehicles), as well as light passenger vehicles.

Considering anticipated loading and the frost-susceptibility of the subgrade soils, if the reconstructed road will receive an asphalt driving surface, the following pavement design is recommended:

Material	Recommended Thickness (Heavy Traffic)
Asphaltic Concrete	HL3 - 50 mm (2.0") HL4 or HL8 - 100 mm (4.0") (placed in two (2) x 50 mm lifts)
Granular 'A' Base (OPSS 1010)	150 mm (6.0")
Granular 'B' Subbase (OPSS 1010)	450 mm (18.0")

The granular subbase material and frost tapers must be compacted to 100% SPMDD. Asphaltic concrete should be supplied, placed and compacted to a minimum 92.0% Marshall maximum relative density in accordance with OPSS 1150 and OPSS 310.

Construction joints in the surface asphalt must be offset a minimum of 150 mm to 300 mm (6" to 12") from construction joints in the binder asphalt so that longitudinal joints do not coincide.

In areas where new asphalt will abut the existing asphalt, it is recommended that any joints in the existing asphalt be sawcut in a straight line prior to being milled to a depth of 40 mm and a width of 150 mm as per OPSD 509.010. It is recommended that a tackcoat in conformance with OPSS 308 be applied to the edge and surface of all milled asphalt prior to placement of new asphalt.

The road should be designed to ensure that water will not pond on the road surface or road edge. It is imperative that a proper spillway be constructed to ensure that erosion of the shoulder rounding does not occur at all locations where surface flow is directed off the road surface and into the ditch.

Given that it is anticipated that only a portion of the roadway associated with the bridge replacement will be repaired, if the pavement structure presented above differs significantly from the existing pavement structure encountered on site, please contact CMT Inc. for further recommendations.

5.11 Chemical Analysis/Excess Soil Management

5.11.1 Chemical Testing NOT Undertaken

Generally, if surplus soils are to be exported off-site, it will be necessary to perform chemical analysis of the soils. Chemical analysis was not undertaken as part of this geotechnical investigation. Should chemical analysis tests be required, the required tests vary and will be dependent on the disposal site utilized by the general contractor.

5.11.2 Leachate Testing Requirement

If soils are transported off-site, additional chemical testing may be required. The extent of the leachate testing will be determined by the results of the initial chemical testing as well as the requirements of the disposal site.

The chemical analysis results would be compared to the site condition standards of Ontario Regulation 406/19. Typically, the results are compared to; *T1-Leachate Screening Levels – Res/Park/Inst/Ind/Com/Commu Property Use*; *T3.1-Leachate Screening Levels – Ind/Com/Commu/Property Use*.

When transporting soils off-site, the following is recommended:

- All chemical analyses and environmental assessment reports must be fully disclosed to the receiving site owners/authorities, whom must agree to receive the material;
- An environmental consultant must confirm the land use at the receiving site is compatible to receive the material;
- An environmental consultant must monitor the transportation and placement of the materials to ensure that the material is placed appropriately at the pre-approved site;
- The excess materials may not be transported to a site that has previously had a Record of Site Condition (RSC) filed, unless the material meets the criteria outlined in the RSC.

It should be noted that landfill sites will generally only accept laboratory test results that have been completed within 30 days of exporting. Therefore, it is recommended that provisions for chemical analysis be included in the tender documents. It should also be noted that the laboratory testing generally takes five (5) working days to process with a regular turnaround time.

6.0 SITE INSPECTIONS

Qualified geotechnical personnel should supervise excavation inspections as well as compaction testing for structural filling, site grading and site servicing. This will ensure that footings are founded in the proper strata and that proper material and techniques are used and the specified compaction is achieved. CMT Engineering Inc. would be pleased to review the design drawings and provide an inspection and testing program for the construction of the proposed development.

7.0 LIMITATIONS OF THE INVESTIGATION

The recommendations made in this report are in accordance with our present understanding of the project. We request that we be permitted to review our recommendations when the drawings and specifications are complete, or if the proposed construction should differ from that mentioned in this report.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments are based on the results obtained at the test locations only. It is therefore assumed that these results are representative of the subsoil conditions across the site. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations.

It should be noted that this report specifically addresses geotechnical aspects of the project and does not include any investigations or assessments relating to potential subsurface contamination. As such, there should be no assumptions or conclusions derived from this report with respect to potential soil or water contamination. Soil or water contamination is generally caused by the presence of xenobiotic (human-made) chemicals or other alteration processes in the natural soil and groundwater environment. If necessary, the investigation, assessment and rehabilitation of soil and water contaminants should be undertaken by qualified environmental specialists.

The samples obtained during the geotechnical investigation will be stored for a period of three months, after which time they will be disposed of unless alternative arrangements are made.

This report is intended solely for the client named. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the reliability of such third parties. The factual data, interpretation, and recommendations in this report pertain to a specific project as described in this report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, deviates from the assumptions stated herein, CMT Inc. should be given an opportunity to confirm that the recommendations are still valid. The subject geotechnical exploration and this report address only the geotechnical aspects of the proposed project; potential environmental impacts or related issues are beyond the defined scope of this work and have not been addressed.

We trust that this report meets with your present requirements. Should you have any questions, please do not hesitate to contact our office.

Prepared by:

Brandon Figg

Brandon R Figg, C. Tech.
Senior Soil Technician

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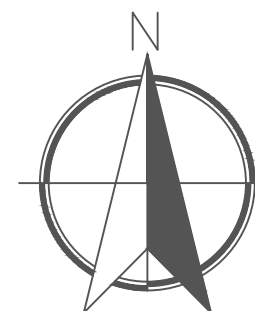
Reviewed by:

Nathan Chortos, P.Eng.
Senior Engineer



NOTES:

1. BASE MAP PROVIDED BY GOOGLE MAPS



NO.	DESCRIPTION	DATE
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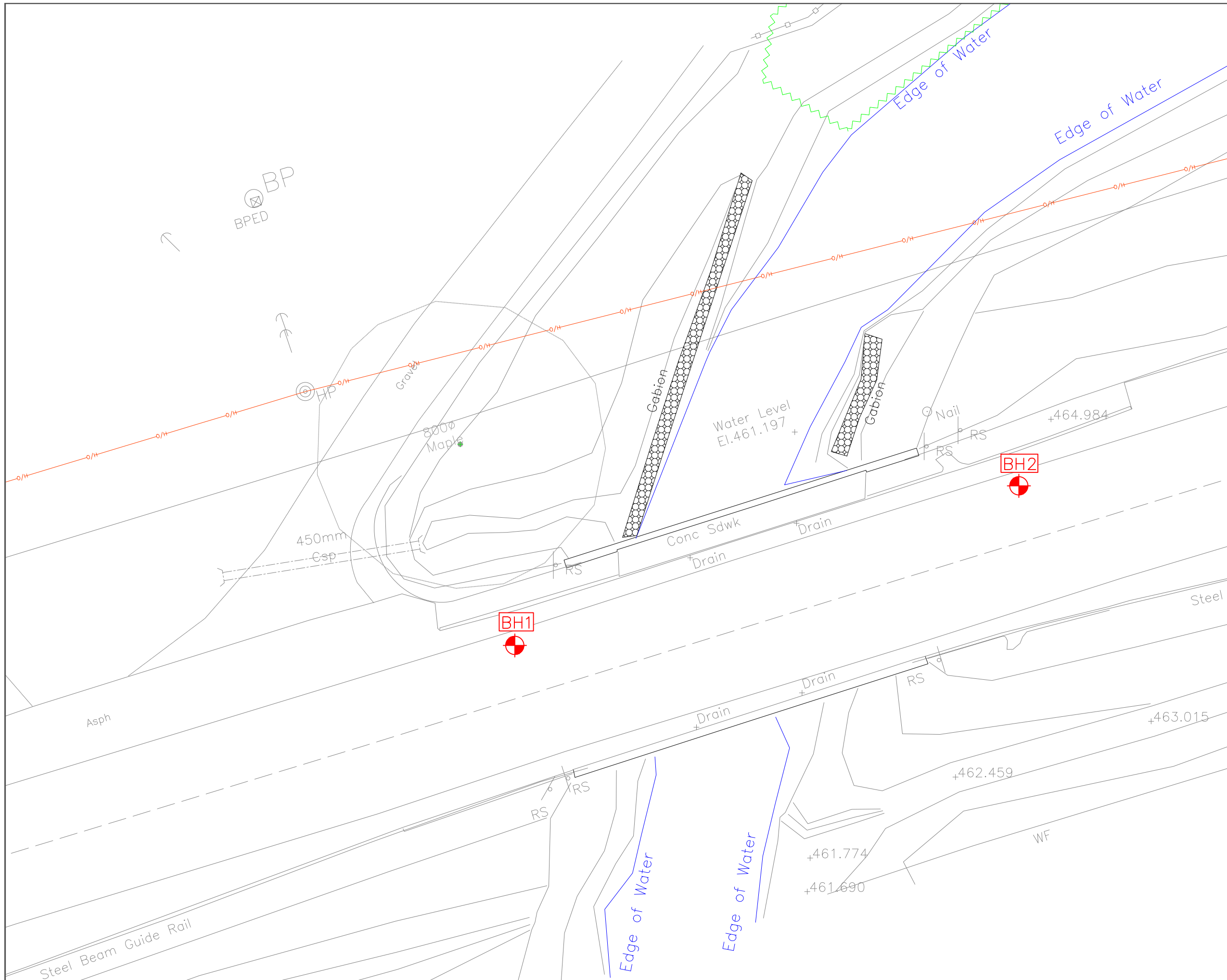
REVISIONS


CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
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 Tel.: 519-699-5775
 Fax: 519-699-4664
 www.cmtinc.net


PROJECT:
 BRIDGE RECONSTRUCTION
 Wellington Road 109,
 Arthur, Ontario

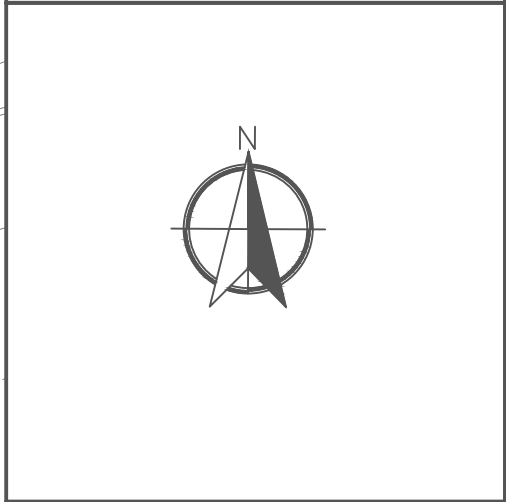
DRAWING
 TITLE:
 SITE LOCATIONS MAP

PROJECT NO.: 21-368(c)	DATE: November 16, 2021
SCALE: N.T.S.	DRAWING NO. 1



NOTES:
 Drawing provided by WSP.

Legend
 CMT Borehole (2021)



NO.	DESCRIPTION	DATE

REVISIONS



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 Fax: 519-699-4664
 www.cmtinc.net

PROJECT:
 Reconstruction of Bridge
 B109134
 Wellington Road 109,
 Arthur, Ontario

DRAWING
 TITLE:
 SURVEY DRAWING SHOWING
 BOREHOLE LOCATIONS

PROJECT NO.:	21-368(c)	DATE:	November 16, 2021
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SCALE:	N.T.S.	DRAWING NO.:	2
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APPENDIX A

BOREHOLE LOGS



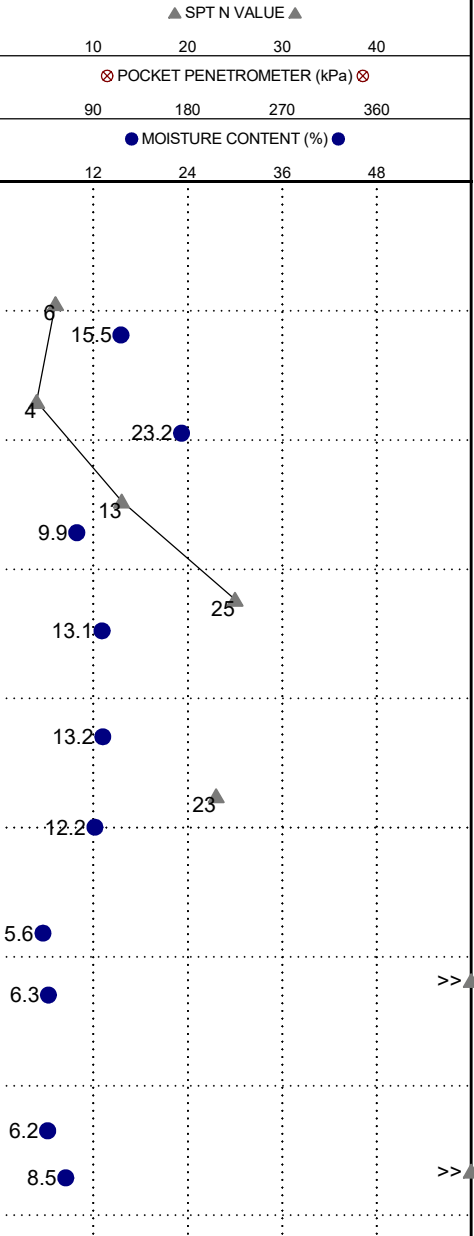
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
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BOREHOLE NUMBER BH1

PROJECT: Reconstruction of Bridge B109134
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 465.00 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(c)
DRILLING DATE: 8-11-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							10	20	30	40
		ASPHALT: Asphaltic Concrete (475 mm)	0.00, 465.00	SPT 1	87	62				
1		GRANULAR FILL: Very dense brown, sand and gravel fill, moist becoming loose	0.48, 464.53							
		TOPSOIL: Loose, dark brown, silty organic topsoil, moist (940 mm)	0.76, 464.24	SPT 2	79	3-2-4-3 (6)				
2			1.04, 463.96	SPT 3	100	0-1-3-3 (4)				
		SILT AND CLAY: Compact, brown, silt and clay, trace sand, and gravel, moist	1.98, 463.02	SPT 4	100	1-4-9-12 (13)				
3				SPT 5	100	5-10-15-16 (25)				
4				MC5 6	100					
5				SPT 7	95	7-11-12-15 (23)				
6		SILT AND CLAY TILL: Very dense, brown, silt and clay till, trace sand and gravel, moist	5.33, 459.67	MC5 8	100					
7				SPT 9	189	43-50/0.13				>>
				MC5 10	100					
8		becoming wet	7.69, 457.31	SPT 11	100	50/0.13				>>



Caving was encountered upon completion of the borehole at a depth of approximately 7.77 m (El. 457.23 m) below ground surface.
 Bottom of borehole at 8.23 m, Elevation 456.77 m.

BOREHOLE LOG2 21-368(C) BRIDGE 10.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-30-21



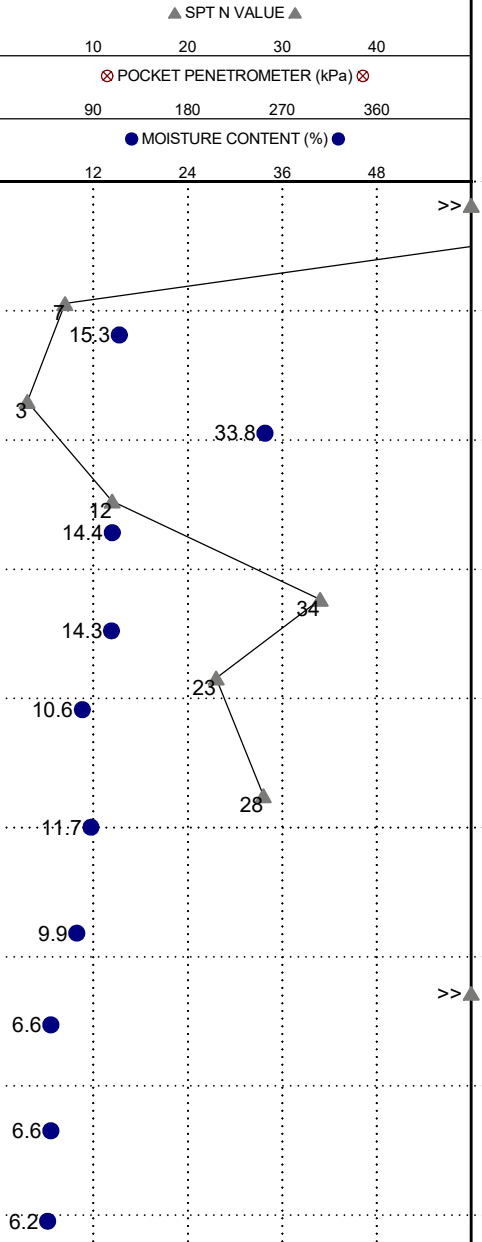
CMT ENGINEERING INC.
 1011 Industrial Crescent, Unit 1
 St. Clements, Ontario N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER BH2

PROJECT: Reconstruction of Bridge B109134
PROJECT ADDRESS: Wellington Road 109
PROJECT LOCATION: Arthur, ON
GROUND ELEVATION: 464.97 m
LOGGED BY: BRF
SAMPLING METHOD: SPT/MC5

PROJECT NUMBER: 21-368(c)
DRILLING DATE: 8-11-21
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	Depth, Elevation (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲												
							10	20	30	40									
0.00		ASPHALT: Asphaltic Concrete (425 mm)	464.97	SPT 1	79	39-53-28-10 (81)													
0.43		GRANULAR FILL: Very dense brown, sand and gravel fill, moist becoming loose	464.55	SPT 2	87	3-4-3-4 (7)													
0.76			464.21																
1.52		TOPSOIL: Very loose, dark brown, silty organic topsoil, moist (770 mm)	463.45	SPT 3	46	2-2-1-2 (3)													
2.29		SILT AND CLAY: Compact to dense, brown, silt and clay, trace sand and gravel, moist	462.68	SPT 4	100	1-5-7-12 (12)													
				SPT 5	87	7-14-20-21 (34)													
				SPT 6	100	6-10-13-15 (23)													
				SPT 7	92	12-18-10-14 (28)													
				MC5 8	100														
6.10		SILT AND CLAY TILL: Very dense, brown, silt and clay till, trace sand and gravel, moist	458.87	SPT 9	79	27-31-50 (81)													
				MC5 10	100														
				SPT 11	33	41-50													



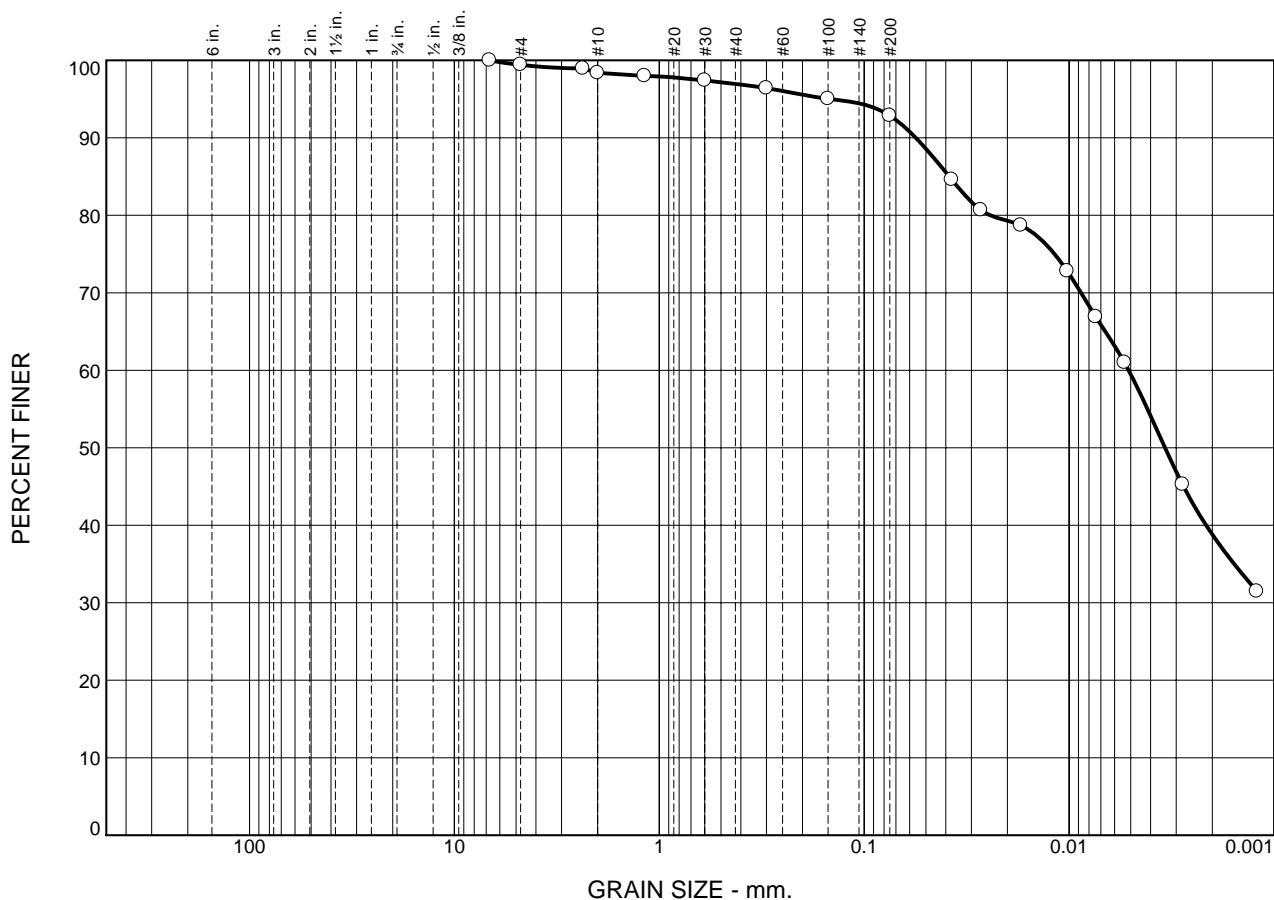
Caving was encountered upon completion of the borehole at a depth of approximately 7.77 m (El. 457.20 m) below ground surface.
 Bottom of borehole at 8.23 m, Elevation 456.74 m.

BOREHOLE LOG2 21-368(C) BRIDGE 10.GPJ CMT_TEMPLATE_2020-05-15.GDT 11-30-21

APPENDIX B

GRAIN SIZE ANALYSIS

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.6	1.0	1.4	4.1	54.1	38.8

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	5	3.05-3.66m	silt and clay, trace sand and gravel	ML
				Sampled by BF of CMT Engineering Inc., August 11, 2021	
				Tested by AB of CMT Engineering Inc., August 16, 2021	

<p style="font-size: 1.2em; font-weight: bold; margin: 0;">CMT Engineering Inc.</p> <p style="font-size: 1.2em; font-weight: bold; margin: 5px 0 0 0;">St. Clements, ON</p>	<p>Client: County of Wellington</p> <p>Project: Reconstruction of Conestogo River Bridge 10 (Structure B109134) Wellington Road 109, Arthur, Ontario</p> <p>Project No.: 21-368(c)</p>	<p>Figure 1</p>
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