REPORT

Nestlé Waters Canada Erin Spring Site

2020 Annual Monitoring Report

Submitted to:

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Key Facts for 2020 Operations at Erin

Key facts for the 2020 operations at Erin are summarized below.

1) Well TW1-88 continued to operate under the terms of Permit to Take Water (PTTW) 3716-8UZMCU. Nestlé submitted an application for renewal of the permit to the Ministry of the Environment, Conservation and Parks (MECP), formerly the Ministry of the Environment and Climate Change (MOECC), in May 2017, more than 90 days prior to the expiration of the permit on August 31, 2017. In accordance with the Ontario Water Resources Act, Section 34.1 (6), Nestlé has continued to legally operate under the existing permit until a final review and decision is made regarding the renewal of the permit.

2) Nestlé has complied with all the conditions in the existing permit for the Erin well TW1-88.

3) Comprehensive annual monitoring reports are prepared for the Erin well (TW1-88) under the conditions of the PTTW that remain in effect.

4) No complaints arising from the taking of water authorized under this PTTW were received in 2020.

5) The total precipitation measured at the Environment Canada Fergus Shand Dam station in 2020 was about 7% above the long-term average.

6) The Grand River Low Water Response Team declared a Level 1 Low Water Condition for the entire Grand River Watershed, including the Eramosa River, on July 9, 2020. The Level 1 Low Water Condition was removed on October 8, 2020. Nestlé Waters Canada complied with the request by the Grand River Conservation Authority for all water-users in the Grand River watershed to voluntarily limit water takings to 90% of their monthly maximum permitted volume during the Level 1 Condition.

7) TW1-88 is completed in the dolostone bedrock aquifer that is overlain by a sandy silt/clay aquitard and a surficial sand and gravel aquifer.

8) The daily water takings at TW1-88 ranged from 0 L to 206,873 L. The average daily water taking was 64,017 L. The maximum daily taking corresponded to 19% of the permitted maximum daily taking and the instantaneous pumping rate remained a relatively small fraction of the maximum permitted rate of 773 L/min. The “spike rates”, representing maximum rates at which TW1-88 can be pumped briefly, were not used in 2020.

9) The total volume of water taken in 2020 from TW1-88 was 23,430,098 L, approximately 6% of the permitted annul volume assuming continuous well operation. The monthly water takings in 2020 from TW1-88 ranged from 1,150,575 L to 2,569,763 L. The water supply from TW1-88 is considered a supplemental supply to the Aberfoyle TW3-80 water supply.

10) 82.5% of the water pumped from TW1-88 was transported by tanker to the Nestlé Waters Canada bottling facility at 101 Brock Road South in Guelph, Ontario. The water was transferred into 500 mL plastic bottles. The remaining 17.5% of the pumped water was used as flush water (from the water storage silo to a pond located at the loading station) or used for CIP (clean in place) water. Flushing was completed to prevent the water from becoming stagnant during periods of low water use.

11) The variations in water level in TW1-88 are due mainly to short-term changes in the pumping rate. The long-term water level trends in TW1-88 are relatively stable. Water levels in the bedrock aquifer have been similar over the past five years with no long-term increasing or decreasing trend.

12) At the end of the year (mid-December) the water levels declined approximately 1 m in the bedrock aquifer around the site. The decline in water levels was due to the drilling of new monitoring wells in the area, which created a temporary conduit between the upper and lower bedrock aquifers allowing the upper bedrock aquifer water to flow into the lower bedrock aquifer. The University of Guelph, in partnership with Nestlé, has drilled, installed and tested multi-level monitoring wells at two sites northwest and southwest of TW1-88. Both wells were drilled through the Guelph Formation (upper bedrock aquifer) and into the Gasport Formation (lower bedrock aquifer). The University of Guelph installed liners in the boreholes in January 2021 and the water levels in the upper bedrock aquifer have returned to the levels prior to the drilling. With the exception of the temporary decline at the end of 2020, the water levels in the bedrock monitoring wells have shown similar trends over the past five-year period.

13) The influence that pumping TW1-88 has on water levels in other wells decreases with distance from TW1-88.

14) Water levels measured within the overburden in 2020 during the summer were some of the lowest, compared to those measured over the past five years. Overall, the similarity in water level trends, regardless of distance from TW1-88, indicates that water level fluctuations are not due to pumping TW1-88, but due to natural seasonal changes and recharge. There is no significant interaction between the bedrock and overburden aquifers at the current rate of taking.

15) Water levels in the mini-piezometers fluctuate seasonally with higher water levels observed in the spring and lower water levels observed in the late summer. The water levels also show a response to precipitation and melt events. Water levels measured in the mini-piezometers in 2020 are within the ranges measured over the past five years with the following exceptions: some of the lowest water levels were observed at the piezometers on the downgradient side of the on-Site Pond at P1-07 (similar to the summer and fall of 2019) and P11-05 in the summer.

16) Long-term surface water levels are stable and pumping at TW1-88 does not influence the water levels in the surface water features. Water levels in the surface water features respond to precipitation and melt events.

17) The flows recorded at all stations along surface water features are influenced by precipitation and melt events. The flows do not appear to be influenced by pumping at TW1-88.

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1.0 INTRODUCTION

Nestlé Waters Canada (Nestlé) has retained Golder Associates Ltd. (Golder) to conduct the annual monitoring program and report preparation for the Nestlé Erin Springs Site, as required by Permit To Take Water (PTTW) Number 3716-8UZMCU issued by the Ministry of the Environment, Conservation and Parks (MECP), formerly the Ministry of the Environment and Climate Change (MOECC). The PTTW is included in Appendix A. The current PTTW was issued on September 28, 2012. The PTTW renewal application was submitted to the MECP in May 2017. The current PTTW expired on August 31, 2017, and in accordance with the Ontario Water Resources Act, Section 34.1 (6), Nestlé continues to operate TW1-88 under the terms of the existing PTTW until a final review and decision is made regarding the renewal.

The location of the Erin Springs Site (the Site) is shown on Figure 1.1. The PTTW authorizes water taking from one bedrock well located on Lot 24, Concession 7, Geographic Township of Erin, County of Wellington, Ontario on-Site. Water from well TW1-88 is taken for the purpose of bottling water.

A summary of the PTTW Conditions and where the information can be found in this report are outlined in Table 1:

Table 1: Permit To Take Water Conditions

Condition Number	Condition Description	Report Section
3.2, 3.3, 3.4, 3.5	Identifies use, rates, time and total takings allowed.	3.1.1, 4.1, Appendix C
4.1, 4.2	Establish the specified groundwater and surface water monitoring programs including monitoring requirements and monitoring timing.	3.1.2, 3.1.3
4.3	Condition for plotting gradient data and assessing hydraulic connection of the groundwater with the surface water.	4.3.1
4.4	Notify the Director of monitoring locations that become inaccessible or abandoned and provide a recommendation for replacement.	3.1.4
4.5	Maintain a daily record of all water takings including date, volume of water taken and rate at which it was taken.	Appendix C
4.6	Prepare and submit an annual monitoring report to the Director, which presents and interprets the data collected under the conditions of the PTTW.	This report
4.7	Submit a letter to the Director and Town of Erin when the “spike rates” are used.	4.1
4.8	Submit details of the bottling operations to the Director.	4.1
5.1	Notify the local District Office of any complaint arising from the taking of water and proposed action to rectify the complaint.	4.1

Condition Number	Condition Description	Report Section
5.2	Supply water to anyone with a water supply (in effect prior to this taking) that has been negatively impacted.	Not applicable

Golder began monitoring at the Site in May 2014 on behalf of Nestlé. Prior to that time, monitoring was performed by Conestoga Rovers and Associates (CRA) and Nestlé. The MECP has requested that the reporting follow the same outline and presentation as previous reports. Additional reporting (Golder et. al., 2019) has also been prepared separately and submitted to the MECP to satisfy the new hydrogeological study requirements (MECP, 2017) issued since the submission of the application for renewal of the PTTW.

The report is structured as follows:

- Section 1.0: Introduction including site location, history, and construction details for supply well TW1-88;
- Section 2.0: Regional setting including a description of topography, drainage, ecology, physiography, geology and hydrogeology;
- Section 3.0: Summary of 2020 field investigations including a description of field activities conducted in 2020;
- Section 4.0: Monitoring program results including a summary and analysis of the data collected in 2020;
- Section 5.0: Conclusions from the 2020 monitoring program; and
- Section 6.0: Recommendations from the 2020 monitoring program.

1.1 Historical Summary

TW1-88 was constructed in August 1988 for a party other than Nestlé. In 1989, water was permitted to be taken from the well for a 10-year period at a maximum withdrawal rate of 1,112,860.8 L/day. However, the well was only used one day during this initial 10-year period.

In 1999, further testing was completed at TW1-88 and the well was re-permitted by the original owner. Nestlé purchased the property and began pumping for commercial purposes in March 2000; the well has been permitted continuously since that time. The current permit allows for water taking for bottling water purposes at a maximum pumping rate of 773 L/min and a maximum daily withdrawal rate of 1,113,000 L over the year. The current PTTW also allows for a maximum instantaneous rate of 946 L/min (spike rate) and a daily withdrawal of 1,362,240 L from April 1 to September 30, provided that the average daily taking in any month does not exceed 1,113,000 L.

The Erin property is located on a 75.5 hectare parcel approximately 4 km west of the Town of Erin (Figure 1.1), 24 km north-northeast of Guelph, and approximately 35 km north of the Nestlé Aberfoyle bottling facility, where the water is transported for processing. The Erin property consists of a water silo, house, barns, paved access drives, ponds, and open fields with wooded areas and wetlands.

When water withdrawals for bottling began at the property, tankers were originally filled directly from the well. Starting in 2001, water pumped from TW1-88 has been transferred via pipeline to a 227,305 L stainless steel water storage silo. The silo is used for short-term storage where highway tanker trucks are filled for transport to the Nestlé Aberfoyle facility. TW1-88 is located in the northern portion of the property and the loading station is situated in the southern portion of the property.

1.2 Construction Details for Supply Well TW1-88

The borehole log for TW1-88 is provided in Appendix B. TW1-88 is interpreted to be completed within the Guelph Formation limestone and dolostone. The bedrock is overlain by glacial sediments that are 19.5 m thick at TW1-88. The overburden consists of two general units: the uppermost unit consists of interlayered sand and gravel with varying amounts of silt to a depth of 12.2 m below grade, and the lower unit consists of 7.3 m of sandy silt till/clay till. A 170 mm diameter high-carbon steel casing was drilled through the overburden and into the bedrock and grouted 1.4 m into the bedrock at a depth of 20.9 m below grade. The well was completed as a 160 mm diameter open borehole in bedrock with a depth of 57.3 m.

In 2010, a downhole video survey revealed that the original high carbon steel casing had some pitting (CRA, 2014). To prevent potential casing failure in the future and to upgrade the well to Nestlé standards, the original casing was overdrilled and removed, and a 200 mm diameter stainless steel casing was installed to a depth of 21.8 m. The new casing was cement grouted in place.

The lower portion of the well was noted to have been completed within a poor production zone (CRA, 2014). The bottom 18.3 m of the well was grouted with cement from 57.3 m to 39 m below grade in 2010. The revised water well record (Well Tag No. A095193) is included in Appendix B, and a schematic of the well is shown on Figure 1.2.

2.0 REGIONAL SETTING

The following sections provide a summary of the regional and local topography, drainage, physiography, and overburden and bedrock geology/hydrogeology for the Site.

2.1 Topography and Drainage

The topography and drainage of the property and surrounding area is shown on Figure 2.1. The regional topography is characterized by knobby hills surrounded by low-lying wetlands and/or streams, with overall ground elevations increasing to the northwest. Ground surface elevations are highest near the middle of the property (450 masl) and decline toward the northwest (430 masl) and southern (410 masl) parts of the property. The topography is relatively flat in the northern part of the property and rolling elsewhere. In general, surface water features occur within the topographic lows.

Well TW1-88 is situated in the Grand River watershed, near the surface water divide with the Credit River watershed (Figure 1.1). Specifically, the TW1-88 is located in the Eramosa River subwatershed of the Grand River. The Eramosa River and its tributaries are generally situated west of the Site.

There are two ponds on the Nestlé property within the Grand River Watershed as shown on Figure 2.1: one pond referred to as the "On-Site Pond" is located approximately 135 m southwest of TW1-88, and one pond referred to as "Wetland Pond" is located approximately 265 m south-southeast of TW1-88. The ponds discharge to an unnamed perennial tributary of the Eramosa River that flows in a southwest direction.

Within the Credit River Watershed, the Erin Branch of the West Credit River is located east of the Site and flows in a general southeasterly direction, ultimately discharging to the Credit River. At its closest point, the Erin Branch tributary is located approximately 470 m from TW1-88. Off the property (to the north and east), there are three large on-line ponds located along the Erin Branch of the Credit River. Another large surface water body located within the Credit River Watershed, referred to as Roman Lake, is located about 1.2 km southeast of TW1-88.

2.2 Ecological Setting

The upland portions of the property comprise agricultural fields while the low-lying areas support forest and wetlands. The wetlands on the Grand River watershed portion of the property are part of the Speed Lutteral Swan Creek Wetland Complex. The wetlands on the Credit River watershed portion of the property are part of the West Credit River Wetland Complex. Both wetland complexes are designated as Provincially Significant Wetlands. The wetlands are generally undisturbed and support a diverse range of flora and fauna, including some that are ranked as locally significant.

2.3 Physiography

The area is situated between the physiographic regions described by Chapman and Putnam (1984) as the Guelph Drumlin Field (to the south) and the Hillsburgh Sandhills (to the north). Chapman and Putman (1984) characterize the Guelph Drumlin Field as drumlins fringed by gravel terraces and separated by swampy valleys in which flow sluggish tributaries of the Grand River. The drumlins are made up of glacial till. Chapman and Putnam (1984) characterize the Hillsburgh Sandhills as a glacial spillway with knobby hills. Surficial soils are generally sandy with swampy valleys.

2.4 Geology and Hydrogeology

The geology in the area has been interpreted based on published mapping, water well records and detailed stratigraphic logging (CRA, 2014).

2.4.1 Overburden Geology

The regional Quaternary geology in the area of the Site is shown on Figure 2.2 (Cowan, 1976). The surficial overburden at the Site is characterized by the following units:

- Organic deposits;
- Glaciofluvial sandy deposits;
- Ice-contact stratified deposits; and
- Silty to sandy till.

The area to the south, southeast and east of the Site generally contains silty to sandy till at surface, with ice contact stratified drift and glaciofluvial sand and gravel deposits occurring mainly in the low-lying areas. The area west, northwest and north of the Site generally contains ice-contact stratified deposits that make up the surficial soils of the Orangeville Moraine. The Site lies between these features, with till deposits occurring through the middle of the Site where ground elevation is higher and sand and gravel deposits occurring toward the northwest and southeast parts of the property.

Three cross-sections through the Site have been developed (Figures 2.3 through 2.5) with the locations shown on Figure 2.2 (CRA, 2014). Two overburden stratigraphic units are interpreted to be present in the vicinity of the Site:

- An upper sand and gravel originating from glaciofluvial outwash or ice-contact stratified drift; and

- A lower sandy silt/clay till.

The sand and gravel unit consist of sand, gravel, or sand and gravel, and generally increases in thickness to the northwest of TW1-88, but is generally absent to the south, southeast, and east of TW1-88. The sandy silt/clay till is continuous across the Site and is present below the sand and gravel unit or at surface where the sand and gravel unit is not present. The till typically ranges in thickness from about 5 m to 35 m within 1 km of TW1-88. Based on the MECP water well records, sand and gravel deposits are present within the till or directly below the till overlying bedrock.

2.4.2 Bedrock Geology

The regional bedrock geology is shown on Figure 2.6 (Liberty, 1975). The uppermost bedrock unit consists of dolostone of the Guelph Formation below the Site, and dolostone of the Amabel Formation (the Ontario Geological Survey now identifies the rock of the Amabel Formation as comprising the Eramosa, Goat Island, Gasport or Irondequoit Formations) east of the Site. Liberty (1975) describes the Guelph Formation in this area as light brown, fine to medium crystalline sucrosic dolostone. TW1-88 is completed within the Guelph Formation.

2.4.3 Hydrogeology

There are three hydrostratigraphic units present at the Site as follows (from top to bottom):

- Surficial sand and gravel aquifer;
- Sandy silt/clay till aquitard; and
- Dolostone bedrock aquifer (Guelph Formation).

The Erin property is located in a regional recharge area of a very large and robust bedrock aquifer system. The water table generally lies within the surficial sand and gravel aquifer. The direction of groundwater flow within the water table aquifer occurs in a southerly to southwesterly direction in the vicinity of TW1-88. Water recharges regionally through the glacial overburden and into the Guelph aquifer on the Orangeville Moraine, generally north and northwest of the Erin property.

The surficial sand and gravel aquifer and bedrock aquifer are separated by a sandy silt/clay till unit. The difference in water levels between the aquifers indicates that the till is acting as an aquitard and that a downward vertical gradient exists under pumping and non-pumping conditions.

The bedrock aquifer does not supply the pond network on the Erin property. The potentiometric surface of the bedrock aquifer is approximately 5 metres below the surface elevation of the On-Site pond. The bedrock aquifer also does not discharge to the tributary of the Eramosa River that flows from the wetland to the pond network. The tributary is supplied almost exclusively by runoff from surrounding topography, precipitation on the wetlands and pond and discharge from the overburden aquifer.

The carbonate units of the Guelph Formation comprise a regional aquifer, utilized by residential, commercial, and municipal water supplies. The bedrock aquifer is the main water supply aquifer in the vicinity of the property for both the Nestlé supply well and private wells.

The potentiometric surface prior to pumping (January 24, 2000) is shown on Figure 2.7 (CRA, 2014). Groundwater flow in the absence of pumping is to the south-southeast with a horizontal gradient of about 0.015 m/m. CRA (2014) notes that static water levels typically ranged from 6 to 16 m bgs, and the water level at TW1-88 before pumping began was about 10 m bgs (i.e., elevation of 424.3 masl).

A map showing the interpreted drawdown in the bedrock aquifer on June 15, 2001, after 18 hours of pumping at 773 L/min, is included on Figure 2.8 (CRA, 2014). The map shows that the zone of influence at this pumping rate (based on a drawdown of 0.1 m) extended approximately 1,000 m from TW1-88 to the west, north and east; and to the south and southwest. To the west the zone of influence is inferred to exceed 700 m, although there are limited available data in that direction. At TW1-88, the drawdown was approximately 8.1 m.

It is noted that Golder previously developed a groundwater flow model for Wellington County in 2005, which indicated that pumping from TW1-88 at 1,113,000 L/day does not interfere with the Wellhead Protection Area designated for the two Hillsburgh municipal wells (Golder, 2006). The closest Hillsburgh municipal well is located approximately 1.5 km north-northeast of TW1-88 and is beyond the 0.1 m drawdown contour (Figure 2.8) located approximately 1 km from TW1-88.

2.5 Source Water Protection

Since the passing of the Clean Water Act (2006), municipalities in Ontario have been required to develop source protection plans to protect their municipal sources of drinking water. These plans identify both water quality and water quantity risks to local drinking water sources and develop strategies to reduce or eliminate these risks. Potential and existing risks for a municipal source are identified within wellhead protection areas (WHPA). A WHPA is an area projected to ground surface that reflects the zone in an aquifer where groundwater is flowing to a municipal drinking water source (pumping well). These are defined to protect water quality. The Nestlé Erin property and well TW1-88 is located more than 1.4 km from the closest WHPAs, which include the Hillsburgh WHPA to the north and the Erin WHPA to the east (CTC Source Protection Committee, 2015).

In addition to protecting water quality, water quantity is also a concern and is considered under Water Quantity Protection Plans. A Water Quantity Risk Assessment is completed to ensure that future water needs of a community can be met. It identifies existing and potential water quantity threats and future activities that may limit municipal water supplies. This is important because when more water is taken from an area than can be naturally replenished, water supplies are threatened, and water shortages are possible. The Erin property falls within the upper end of a Water Quantity Intake Protection Zone (IPZ-Q) for the City of Guelph Eramosa Intake on the Eramosa River, which has been assigned a significant risk level (Matrix Solutions 2017). The IPZ-Q was assigned a significant risk level because of interconnection through the City of Guelph Arkell Water System. As a result, each of the consumptive water uses within the IPZ-Q are categorized as significant; however, the net consumptive water use within the IPZ-Q is small compared to the natural variability in flow of the Eramosa River at the intake (Matrix Solutions 2018a). Therefore, on an average basis, consumptive water taking threats are not expected to affect the municipal surface water intake’s ability to obtain water. Further assessment of the threats was carried out as part of the climate changes assessment (Matrix Solutions 2018b). The municipal and non-municipal threats were ranked as follows: 1) Arkell Wells, 2) Glen Collector, 3) Non-Municipal PTTWs, and 4) Rockwood Wells. The Nestlé water taking is one of twelve water takings that fall within the third-ranked threat of four threats. The study indicates that the total potential influence of municipal and non-municipal takings on streamflow in the Eramosa River at Gauge 02GA029 is a reduction in flow of 0.287 m^3/s; the amount represents approximately 12% of the mean annual flow (2.3 m^3/s) (Matrix Solutions 2018b). Within this total, the impact of permitted municipal pumping rates represents 85% of the total potential impact of permitted water takings on the Eramosa River intake. The Arkell Wells/Glen Collector are located approximately 24 km south of TW1-88.

3.0 SUMMARY OF 2020 FIELD PROGRAM

This section describes the field activities performed in 2020 associated with PTTW Number 3716-8UZMCU (for TW1-88).

3.1 Groundwater and Surface Water Monitoring Program

Groundwater and surface water monitoring was initiated in 2000 and has evolved over the years with the objectives to 1) characterize the existing hydrogeologic setting, and 2) document potential long-term changes to the groundwater and surface water resources in the area. The monitoring program includes measurement and record-keeping of water takings, groundwater levels, mini-piezometer levels, surface water levels and surface water flow. The monitoring program includes the following instrumentation, with the locations shown on Figures 3.1 through 3.3:

- Groundwater levels and water takings in the production well (TW1-88);
- Groundwater levels in 16 monitors at 10 locations;
- Shallow groundwater levels in 7 piezometer nests with a total of 14 monitors (shallow and deep pair);
- Surface water levels at 6 stations;
- Surface water flow at 3 stations; and
- Water levels at 13 private wells on 9 properties (4 of the 13 are no longer monitored due to access restrictions [3 since 2014 and 1 in 2020]; see Table 4 for more details).

3.1.1 Water Taking

Water taking from TW1-88 in 2020 is measured using an Endress & Hauser Promag magnetic flow meter connected to an Allen-Bradley industrial Programmable Logic Controller. The instantaneous flow and cumulative volume pumped are recorded every minute. The flow meter was most recently calibrated on November 16, 2020 by Endress+Hauser.

The daily volumes taken from supply well TW1-88 in 2020 are provided in Appendix C.

3.1.2 Groundwater Monitoring Program

Groundwater levels have been measured at various locations for varying periods of time since a monthly water level monitoring program was initiated in January 2000. Modifications to the monitoring program have been made over time as wells have become inaccessible. In 2014, some homeowners requested that monitoring be discontinued at their well (see Section 3.1.4). In 2020, the homeowner for well D27 requested that their well no longer be included in the monitoring program (see Section 3.1.4). Other than D27, no additional wells required as part of the monitoring program became inaccessible during the 2020 monitoring period. Previous wells that have been decommissioned or are no longer part of the monitoring program are shown on Figure 3.4 (not including private wells). All of the existing monitoring locations and the decommissioned or unused wells are shown on Figure 3.5.

The monitoring locations for the 2020 groundwater monitoring program are shown on Figures 3.1 and 3.2 for the bedrock and overburden wells, respectively, and are summarized as follows:

Overburden Monitors

- TW1/99, MW2-00, MW3A/B-00, MW5B-05, MW6B-05, MW11B-08, MW12B-08, D2B (no longer monitored), D26C, D36A, D27 (no longer monitored), D7B

Bedrock Monitors

- TW1-88, MW5A-05, MW6A-05, MW11A-08, MW12A-08, D2A (no longer monitored), D3, D36B, D19 (no longer monitored), D24A, D24B, D26A, D26B, D8, D15, D32

Water levels are measured at all locations during the third week of each month. Where required by the PTTW, dataloggers are used to record water levels at 60-minute intervals and downloaded monthly. The groundwater levels measured in 2020 are presented in Appendix D.

3.1.2.1 Missing Data

The following table provides a list and description of missing data from the 2020 monitoring. There are instances when manual water levels can not be measured due to access tubes being broken or wells being buried under the snow or restrictions due to COVID. With the exception of the COVID restrictions, the other issues were temporary and have been resolved.

Table 2: Missing Groundwater Data from the 2020 Monitoring

Monitoring Location	Missing Data	Comment
D15	Manual water level in August	Erroneous water level
D26A	Manual water level in January and February	Water level access tube broken in January and blocked in February.
D26B	Manual water level in January, February and December	Frozen (water level taken from transducer data)
D26C	Manual water level in March through December	Well is in house and could not enter house due to health and safety restrictions (COVID)
D27	Manual water level in March through December	Homeowner does not want to participate in monitoring program
D32	Manual water level in December	Erroneous water level

3.1.3 Surface Water Monitoring Program

The monitoring locations for the 2020 surface water monitoring program are shown on Figure 3.3 and are summarized as follows:

Surface Water Levels

- ST03-05, SW1-08, SW3-08, SW4-08, SW5-08, SW7-08

Water levels are measured at all locations during the third week of each month using a water level meter. Dataloggers are used to record water levels at 60-minute intervals, which are also downloaded once a month. The surface water levels for 2020 are presented in Appendix E.

A new station (SW7A-16) was established in the Erin Branch of the Credit River by D7B in May 2016. The site was chosen at a location with more favourable hydraulics (i.e., single channel, stable conditions and no backwater). However, due to changes in the stream, SW7A-16 was replaced with SW7B-20 approximately 100 m upstream. This station will eventually replace SW7-08, which is located in an area with changing stream conditions and flooding.

Stream Flows

- SW1-08, SW3-08, SW7-08 (SW7A-16 and SW7B-20)

Stream flow was measured at four locations during the third week of each month. The streamflow monitoring at SW7B-16 is not mandated under the terms of the PTTW. Stream flow velocities were measured using a Valeport electromagnetic flow meter and the surface water flows were calculated using the cross-sectional area-velocity method. The surface water flow measurements for 2020 are presented in Appendix F.

In addition, the monthly surface water elevations (“stage”) and stream flow measurements (“discharge”) collected in 2020 were used to update the stage-discharge relationships (rating curves) at SW1-08, SW7-08 and SW7B-16. The rating curves were used to calculate stream flow from the continuous water level measurements at these stations. A stage-discharge curve was not developed for SW3 as flow at SW3 is measured on a continuous basis using a Stingray Flow Meter.

Mini-Piezometers

- P1A/B-07, P3A/B-05, P6A/B-07, P10A/B-05, P11A/B-05, P12A/B-07, P13A/B-07

In 2020, water levels were measured in mini-piezometers at seven locations, each containing a shallow and a deep monitor installed beneath the stream to assess water levels in the shallow sediments. Dataloggers are used to record water levels at 60-minute intervals. Water levels were measured and dataloggers downloaded at all locations during the third week of each month. The water levels measured in 2020 are presented in Appendix E.

3.1.3.1 Missing Data

The following table provides descriptions of missing data from the 2020 monitoring, which are technically not missing but rather are due to winter conditions (i.e., stations were frozen). The water levels in the mini-piezometers are close to surface and can become frozen in the winter. Slow moving water can also become frozen in the winter. The water level is not necessarily representative of the actual water level under these frozen winter conditions. The issues were temporary and have been resolved.

Table 3: Missing Surface Water Data from the 2020 Monitoring

Monitoring Location	Missing Data	Comment
P10A/B-05	Not missing but frozen	Frozen in January
P12A-07	Not missing but frozen	Frozen in January and December

Monitoring Location	Missing Data	Comment
SW5-08	Not missing but frozen	Frozen in January and December
SW7-08	Not missing but frozen	Frozen in December

3.1.4 Notification Regarding Locations Which Become Inaccessible

A list of the wells that homeowners requested be removed from the monitoring program, along with replacements that were recommended, are provided in the following table.

Table 4: Inaccessible Monitors

Monitoring Location	Reason for Inaccessibility	Action recommended by Nestlé	Documented in Letter to MECP
D19	In October 2014, the resident notified Nestlé that they would no longer like their well monitored.	No additional wells to be monitored in place of D19 as there are other wells in the area that can be monitored.	October 10, 2014
D2A	In December 2014, the resident notified Nestlé that they would no longer like their well monitored.	Install a monitoring well on a neighbouring property (see Recommendations Section).	December 2, 2014
D2B	In December 2014, the resident notified Nestlé that they would no longer like their well monitored.	No additional wells will be monitored in place of D2B as there are no impacts to the overburden aquifer and there are other wells being monitored in the overburden.	December 2, 2014
D27	In March 2020, the resident notified Nestlé that they would no longer like their well monitored.	No additional wells will be monitored in place of D27 as there are no impacts to the overburden aquifer and there are other wells being monitored in the overburden.	March 9, 2020

3.2 Surveying

No surveying needed to be conducted in 2020.

3.3 Precipitation

A record of precipitation in 2020 was compiled from the Fergus Shand Dam meteorological station with missing data filled in from the Fergus MOE meteorological station. Prior to 2016, the record of precipitation was compiled from the Orangeville meteorological station, with missing data obtained from the Fergus Shand Dam Station; however, data are no longer available from the Orangeville station. The following table provides a summary of the annual precipitation. The annual average (1981-2010) precipitation from the Fergus Shand Dam Station is 945.7 mm and 901.5 mm at the Orangeville Station. The total precipitation measured in 2020 was 1014.1 mm, which is approximately 7% above the average. In the past five years (2016 – 2020), total precipitation has been average or above-average. Annual precipitation is also shown graphically on Figure 3.6 along with the 30-year average. The precipitation record is included to evaluate if there is a response in water levels that correlates to changes in precipitation.

Table 5: Annual Precipitation

Year	Precipitation (mm)	% Difference from Average
2008	1444.8 (Orangeville)	60.3
2009	1044.9 (Orangeville)	15.9
2010	1113 (Orangeville)	23.5
2011	1077.7 (Orangeville)	19.5
2012	803 (Orangeville)	-10.5
2013	1035.7 (Orangeville)	14.9
2014	954.5 (Orangeville)	5.9
2015	783.1 (Orangeville)	-13.1
2016	1032 (Shand Dam)	9.1
2017	1109.6 (Shand Dam)	17.3
2018	953.3 (Shand Dam)	0.8
2019	1053.4 (Shand Dam)	11.4
2020	1014.1 (Shand Dam)	7.2
Average (1981-2010)	901.5 (Orangeville), 945.7 (Fergus Shand Dam)	

The monthly precipitation for 2020 is presented in the following table. Above average precipitation was recorded in the first three months of 2020 followed by a mix of both above and below average precipitation for the remainder of the year.

Table 6: Monthly Precipitation in 2020

Month	Precipitation (mm)	Average (mm)	% Difference from Average
January	153.6	67.9	126.2
February	76.2	55.9	36.3
March	78.9	59.6	32.4
April	47.9	74.1	-35.4
May	67.1	86.9	-22.8
June	100.9	83.8	20.4
July	43.7	89.2	-51.0
August	103.2	96.6	6.8
September	90.6	93.1	-2.7
October	75.8	77.2	-1.8
November	83.0	93.0	-10.8
December	93.2	68.6	35.9

4.0 MONITORING PROGRAM RESULTS

4.1 Water Taking for TW1-88

Water taking at the Nestlé Erin Springs Site in 2020 continues to be governed by PTTW 3716-8UZMCU, which permits water to be taken from one well as outlined in the table below.

Table 7: Permitted Water Takings at Erin Springs

Source	Maximum Rate	Maximum Number of Hours of Water Taking per Day	Maximum Daily Water Taking	Maximum Number of Days of Water Taking per Year
TW1-88	773 L/min	24	1,113,000 L	365

Condition 3.3 of the PTTW indicates that the instantaneous rate and amount of taking may increase up to a maximum of 946 L/min and 1,362,240 L/day (“spike rate”) in each month between April 1 and September 30; however, the average daily taking in any month between April 1 and September 30 shall not exceed 1,113,000 L.

The daily water takings for 2020 are tabulated in Table C1 in Appendix C. The daily water takings at TW1-88 ranged from 0 L to 206,873 L; the latter is 19% of the permitted taking. The average daily water taking was 64,017 L. The “spike rate” of 946 L/min was not used in 2020. During 2020, the daily takings and instantaneous flow rates were below the limits of the PTTW (i.e., less than 1,113,000 L/day and 773 L/min).

The total volume of water taken each year from 2000 to 2020 is presented on Figure 4.1. The total volume of water taken in 2020 from TW1-88 was 23,430,098 L. In 2020, the total volume taken accounted for approximately 6% of the permitted volume. This is the lowest volume taken since pumping began in 2000. Since 2000, the groundwater taking has ranged from approximately 6% to 70% of the permitted taking.

The monthly water takings for the past five years are presented on Figure 4.2. The monthly water takings in 2020 from TW1-88 ranged from 1,150,575 L in September to 2,569,763 L in May. In 2020, the monthly water takings varied from month to month with no overall trend.

The Grand River Low Water Response Team declared a Level 1 Low Water Condition for the entire Grand River Watershed, including Eramosa River, on July 9, 2020. The Level 1 Low Water Condition was removed on October 8, 2020. Nestlé Waters Canada complied with the request by the Grand River Conservation Authority for all water-users in the Grand River watershed to voluntarily limit water takings to 90% of their monthly maximum permitted volume during the Level 1 Condition. Nestlé’s water takings were below 20% of the permitted daily amount during the low-water condition.

Condition 4.8 of the PTTW requires details of the bottling operations such as location and name of facilities where water is delivered in bulk containers, if bulk water is containerized at the receiving location, the size of the containers into which the water is transferred and total volume of water transported in bulk to each remote facility. The groundwater pumped from Erin Springs in 2020 was distributed as follows:

- 19,334,700 L (or 82.5 percent) was transported by tanker to the Nestlé Waters Canada bottling facility at 101 Brock Road South in Guelph, Ontario. The water was transferred into 500 mL plastic bottles.
- The remaining 4,095,398 L (or 17.5 percent) was used as flush water (from the water storage silo to a pond located at the loading station) or used for CIP (clean in place) water. Flushing was completed to prevent the water from becoming stagnant during periods of low water use.

As per Conditions 4.9, 5.1 and 5.2, Nestlé has indicated that no well interference complaints arising from the taking of water authorized under this PTTW were received in 2020.

4.2 Groundwater Monitoring Program

The groundwater levels measured manually in 2020 at the monitoring wells are tabulated in Table D1 in Appendix D. Hydrographs with the manual or transducer water level data are also included in Appendix D. In addition to the water levels, the hydrographs also include the daily pumping volumes at TW1-88 and daily precipitation as recorded at the Shand Dam meteorological station.

4.2.1 TW1-88

Water levels and average daily pumping rates for TW1-88, along with daily precipitation, from 2016 through 2020 are shown on Figure D1.

The estimated non-pumping water levels (partially recovered conditions following temporary cessation of pumping) observed in 2020 were generally between 422.7 masl to 423.4 masl. It should be noted that non-pumping water levels do not represent “true” water level conditions that would be observed if there were no pumping at TW1-88. Instead, they represent partially recovered conditions, with the amount of recovery depending on the average pumping rate before the pumping stopped, how much time has elapsed before pumping resumes and whether there is a background (seasonal) trend in the water levels. CRA (2014) indicated that, based on historical data, static water levels are in the range of 423.5 masl to 424.5 masl. In 2020, water levels in TW1-88 increased approximately 0.3 m in January following a precipitation/melt event, declined to the end of February, then rose approximately 0.3 m until April, declined approximately 0.7 m from May through August and remained relatively constant to the end of the year.

At the end of the year (mid-December) the water levels declined approximately 1 m in the bedrock aquifer around the site. The decline in water levels was due to the drilling of new monitoring wells in the area, which created a temporary conduit between the upper and lower bedrock aquifers allowing the upper bedrock aquifer water to flow into the lower bedrock aquifer. The University of Guelph, in partnership with Nestlé, has drilled, installed and tested multi-level monitoring wells at two sites northwest and southwest of TW1-88. Both wells were drilled through the Guelph Formation (upper bedrock aquifer) and into the Gasport Formation (lower bedrock aquifer). The University of Guelph installed liners in the boreholes in January 2021 and the water levels in the upper bedrock aquifer have returned to the levels prior to the drilling.

With the exception of the temporary decline at the end of 2020, the water levels have been similar over the past five-year period. The seasonal trend has also been similar over the same period.

During 2020, water levels were generally between 417.5 masl and 418.5 masl under pumping conditions (equivalent to a drawdown of 5.5 m to 6.5 m based from a static water level of 424 masl) not including the decline at the end of the year. The drawdown at the end of year was similar although the static and pumping water levels were approximately 1 m lower.

The 2020 water levels, along with the historical water levels, shown on Figure D1 appear to be relatively stable under both pumping and non-pumping conditions. The groundwater taking at TW1-88 has not caused a long-term declining trend in water levels at TW1-88. The upper bound on the water level in TW1-88 (423.5 masl as shown on Figure D1) is within the range of historic static water levels, which suggests that water levels recover almost completely following temporary stoppages of pumping.

4.2.2 Bedrock Aquifer

Hydrographs for the other wells completed in the bedrock aquifer are included on Figures D2 through D12 in Appendix D. A review of the hydrographs of wells completed in the bedrock aquifer indicates the following:

- Water levels measured within this aquifer in 2020 are similar to those measured over the past five years. There is no long-term increasing or decreasing trend in the water levels.
- As shown on Figure 2.8 (from CRA, 2014), the drawdown in MW12A-08 and private well D15 on June 15, 2001, after pumping at 773 L/min for 18 hours, was less than 0.3 m. For the purpose of this study, water levels in these wells are interpreted to represent background conditions. The measurements show only small water level fluctuations over the past five years. In 2020, the water levels fluctuated approximately 0.2 m in D15 and approximately 0.5 m MW12A-08. The water levels in MW12A-08 were relatively constant for the remainder of the year following the summer decline while the water levels in D15 declined slightly after increasing slightly in October (see Figure D2). The decline in water levels at D15 at the end of the year may be due to pumping in Hillsburgh. A decline in water levels of approximately 0.2 m was observed at MW12A-

08 at the end of the year due to the drilling of the new monitoring wells, which has since recovered to pre-drilling conditions. There is no long-term increasing or decreasing trend in the water levels.

- In 2020, the water levels in the bedrock aquifer generally rose in January followed by a decline into February, a rise into April, declined from May through August and then were relatively constant for the remainder of the year or increased in October and then decreased in November and December.
- The amount of influence that pumping TW1-88 has on water levels in other wells varies based on distance away from TW1-88 (e.g., more pronounced in MW5A-05 compared to MW12A-08). The drawdown cone from pumping TW1-88 is localized, especially with the reduced intermittent pumping that is currently occurring.
- The closest monitoring well in the same aquifer as TW1-88 is MW5A-05, located approximately 70 m southwest of TW1-88. MW5A-05 is interpreted to be downgradient of TW1-88. In 2020, the high-water levels (partially recovered condition following stoppages in pumping) ranged from approximately 423.4 masl to 424.0 masl (see Figure D3) not including the decline in late December. The difference between the high and low water levels (influence of pumping in the aquifer) at MW5A-05 was approximately 3.4 m in 2020. The water levels fluctuate but there is no long-term increasing or decreasing trend. The decline in water levels at the end of the year due to the drilling of the monitoring well was approximately 1 m.
- The influence of pumping TW1-88 is also evident at monitoring well MW6A-05, private well D3 and historically at private well D2A (D2A is no longer monitored). The difference between high and low water levels (influence of pumping in the aquifer) at MW6A-05, located approximately 450 m southeast of TW1-88, was approximately 0.7 m in 2020 (see Figure D4). At D3, located approximately 220 m northwest of TW1-88, the water levels respond to pumping at both TW1-88 and D3. The well (D3) appears to be used as part of a heat pump system during the winter months when the combined pumping of TW1-88 and D3 results in a difference between the high and low water levels of approximately 2 m to 4 m (see Figure D7). During the other months, the difference between the high and low water level was approximately 2 m to 3 m. The water levels in these wells are stable. The decline in water levels at the end of the year due to the drilling of the monitoring well was approximately 1.2 m at MW6A-05.
- Another on-Site monitoring well, MW11A-08, is located approximately 470 m east-northeast of TW1-88. Water levels in the monitoring well generally follow the same patterns as the water levels in the background well MW12A-08 (see Figure D5). The water levels indicate that the daily influence of pumping results in a fluctuation of less than 0.2 m at MW11A-08. Water levels have also been monitored for two years at the new bedrock monitoring wells MW1A-18 and MW1B-18 located approximately 750 m northeast of TW1-88 (see Figure D6). The daily water levels fluctuate less than 0.6 m at this location. The minimal response to pumping suggests that groundwater taking from TW1-88 does not affect water levels in the Hillsburgh municipal wells, located further north-northeast of TW1-88.
- Water levels in the south-east part of the Site (D32 and D36B, Figures D11 and D8, respectively), more than 900 m away from TW1-88, exhibited responses similar to the other water levels measured at the Site, with higher water levels observed in the spring and lower water levels observed in the summer/fall.
- Water levels in the other private wells may be influenced by pumping at TW1-88; however, fluctuations are mainly due to pumping at the private wells. The water levels are stable at the other private wells (D8, D24A, D24B, D26A and D26B).

The lowest water levels were generally observed in August. This was a time with average pumping during the year and near-average precipitation for the month. To review the groundwater flow patterns during these summer conditions, a potentiometric surface of the bedrock aquifer was prepared (Figure 4.3) based on the water levels measured during the monthly monitoring event (August 21, 2020). A review of the potentiometric surface on August 21, 2020, indicates groundwater flow is to the southeast, south and southwest with influence from pumping localized around TW1-88.

4.2.3 Overburden (Water Table) Aquifer

Hydrographs for wells completed in the overburden are included on Figures D13 through D17 in Appendix D. A review of the hydrographs completed in the overburden indicates the following:

- Water levels measured within the overburden in 2020 were some of the lowest during the summer compared to those measured over the past five years.
- Water levels in the overburden show similar trends, with increasing water levels in January followed by a decrease in February, an increase in March, a decline from April through August, and a increase through the fall before declining in December. The exceptions to this trend are at well D7B (Figure D16), which has a relatively consistent water level over the years with little to no fluctuation and at MW12B-08 (Figure D15) which rose through the spring and declined through the summer and fall similar to previous years.
- The timing of the high and low water levels can vary by a month or two from well to well. This may be due to the timing of recharge to local areas of the aquifer, which is expected to vary across the Site based on the variations in surficial geology (i.e., sand and gravel versus glacial till) and topography. In 2020, the high water levels were generally observed in April while the low water levels were observed to vary between August and the end of the year.
- Water levels fluctuate more in the southern part of the Site compared to the northern part of the Site. In 2020, water levels in the wells completed in the northern part of the study area fluctuated by approximately 0.6 m or less, whereas wells completed in the southern part of the study area fluctuated by approximately 0.5 m to 3.5 m. This is in response to how quickly water moves through the different aquifers following recharge and reflects their positions in the groundwater flow system, where greater variations in water levels occur at the higher topographic elevations (i.e., recharge areas) compared to the low-lying areas (i.e., discharge areas).
- A response to precipitation or melt events (i.e., increase in water levels) is evident in the wells for which levels are recorded continuously.
- The decline in water levels that was observed in the bedrock aquifer in December was not observed in the overburden aquifer indicating that there is not a significant connection between the overburden and bedrock aquifers.
- Overall, the similarity in water level trends, regardless of distance from TW1-88, indicates that water level fluctuations are not due to pumping TW1-88 but due to natural seasonal changes and recharge.

4.2.4 Vertical Gradients

4.2.4.1 Between Overburden and Bedrock

Vertical gradients between the overburden and bedrock at monitoring well nests (MW5-05, MW6-05, MW11-08 and MW12-08) are plotted on Figures D18 through D21 in Appendix D. Note that a positive gradient is calculated when the water level in the upper aquifer exceeds the level in the lower aquifer. Under these conditions, the potential groundwater flow is downwards. A review of the vertical gradient graphs indicates the following:

- A positive vertical gradient between the overburden and the bedrock (potential downward flow) is present at all of the monitoring well nests.
- The vertical gradients fluctuate due to changes in the bedrock water levels that respond to pumping TW1-88 (i.e., a decrease in the bedrock water level) or changes in the overburden water levels that respond to recharge events (i.e., an increase in the overburden water level), but the overall trends remain stable.
- The vertical gradients have been similar over the past five years. The gradients at MW5-05 and MW6-05 vary in response to pumping TW1-88 and are due to the water level fluctuations in the bedrock aquifer at these sites. There is also some influence on the gradient in response to pumping at MW11-08 but less than that observed at MW5-05 and MW6-05. The gradient at MW12-08 increases in the spring and then decreases through the summer due to a rise in the water levels in the overburden during the spring melt.
- There does not appear to be a measurable hydraulic response in the overburden water levels from pumping the bedrock aquifer at the current rate of water taking.
- The positive vertical gradients increased at the end of the year when the water levels in the bedrock aquifer lowered in response to drilling the new monitoring wells.
- In 2020, vertical gradients at the two wells closest to TW1-88 range from approximately 0.4 m/m to 0.8 m/m at MW5-05 and approximately 0.4 m/m to 0.5 m/m at MW6-05. On average, the vertical gradients at the other two wells are about 0.13 m/m at MW11-08 and 0.26 m/m at MW12-08. The increase in the positive vertical gradient (downward flow) at MW12-08 is due to the spring recharge to the overburden groundwater system, increasing water levels in the overburden and subsequently declining into the summer months.
- There have been no systematic changes in the vertical gradients through time.

4.2.4.2 In Shallow Overburden

Vertical gradients in the shallow overburden at MW3-00 are shown on Figure D22 in Appendix D. During most of 2020 there was a negative vertical gradient (potential upward flow) in the shallow overburden at MW3-00 with potential discharge to the On-Site pond. During spring melt and/or some precipitation events, the vertical gradient is reversed to downward flow. The vertical gradients at MW3-00 are consistent with those recorded in the past and are not related to TW1-88 withdrawals.

4.3 Surface Water Monitoring Program

The surface water monitoring program includes measurement of mini-piezometer and surface water levels, and surface water flow. The surface water levels measured in 2020 are tabulated in Appendix E where hydrographs of the water levels are also presented. The surface water flow data are tabulated and graphed in Appendix F. The hydrographs also include the daily pumping volumes at TW1-88 and daily precipitation as recorded at the Shand Dam meteorological station.

4.3.1 Mini-Piezometer Water Levels and Vertical Gradients

Hydrographs for the mini-piezometer locations are presented on Figures E1 through E7 in Appendix E with the “a” figure including data for the past 5 years (2016 to 2020) and the “b” figures including data only for 2020. The graphs also include the average daily pumpage at TW1-88, precipitation as recorded at the Shand Dam station and vertical hydraulic gradients. A negative gradient indicates that groundwater may be discharging to the surface water body, while a positive gradient indicates the surface water body is recharging the groundwater. A review of the hydrographs for the mini-piezometers indicates the following:

- Water levels measured in the mini-piezometers in 2020 are within the ranges measured over the past five years with the following exceptions. Some of the lowest water levels were observed at the piezometers on the downgradient side of the on-Site Pond at P1-07 (similar to the summer and fall of 2019) and P11-05 in the summer.
- The water levels show a response to precipitation and melt events.
- There is no effect of pumping TW1-88 on vertical gradients in the shallow overburden near surface water features.
- The vertical gradients in 2020 are similar to those observed over the past five years with the exception of P13-07 where the positive gradient increased in the summer compared to previous years. This was due to higher water levels in the shallow piezometer and lower water levels in the deeper piezometer. Any slight reversals in gradients are not related to pumping at TW1-88. This is observed in the fact that there has been no change in gradient when there were changes in overall pumping in mid-2014 and the beginning of 2019 (i.e., vertical hydraulic gradients were not influenced by the lower daily pumping).
- Water level fluctuations and vertical gradients in the mini-piezometers are summarized as follows for 2020:
  - P3A/B-05 (east side of On-Site pond) – water levels in 2020 fluctuated approximately 0.2 m (similar to water levels in the pond). The water levels fluctuate in response to precipitation events and prolonged drier periods with reduced precipitation. Overall the water levels rose through the winter into the spring, declined through July, increased from August through November and decreased in December. There was generally no gradient, or weak negative gradients at the site in 2020. The negative gradient (upward flow) occurred during the winter, spring and fall. Sudden changes in water levels are sometimes due to blockages and removal of debris from the outlet of the pond.
  - P6A/B-07 (west side of On-Site pond) – water levels in 2020 fluctuated approximately 0.2 m (similar to water levels in the pond). The water levels fluctuate in response to precipitation events and prolonged drier periods with reduced precipitation. Overall the water levels rose through the winter into the spring, declined through July, increased from August through November and decreased in December. Over the past five years a weak positive gradient (downward flow) exists that has occasionally reversed to a weak negative gradient (upward flow). In 2020, the gradient was positive with the exception of some short duration reversals. Sudden changes in water levels are sometimes due to blockages and removal of debris from the outlet of the pond.
  - P1A/B-07 (stream channel downstream of On-Site pond) – water levels in 2020 fluctuated approximately 0.1 m with the exception of a short-term increase in January related to a precipitation/ melt event. The water levels in the stream show less fluctuation than the water levels in the pond. A weak negative

gradient (upward flow) to no gradient was observed in 2020. A reversal in gradient is occasionally observed in the historical records.

- P11A/B-05 (further downstream from P1-07 at 6th Line) – water levels in 2020 fluctuated approximately 0.1 m not including the short-term increase related to the precipitation/melt event in January. The water levels in the stream show less fluctuation than the water levels in the pond. A negative gradient (upward flow) was observed with the occasional positive gradient spikes during some precipitation events.
- P10A/B-05 (upgradient side of the wetland pond) – water levels fluctuated approximately 0.5 m in 2020. The water levels generally follow a seasonal trend with an increase through the winter/spring followed by a decrease through the summer and stabilization through the fall. In 2020 the water levels were stable in the winter/spring, decreased into the summer and then increased and stabilized in the fall. The gradient was mainly negative (upward flow) during the year with some reversals to a positive gradient (downward flow) during the year (mainly in the late summer/early fall).
- P12A/B-07 (stream flowing into Roman Lake) – water levels fluctuated approximately 0.1 m in 2020 not including the short-term increase related to the precipitation/melt event in January. Water levels remained higher at P12B-07 due to the construction of a beaver dam in 2017, however, the water levels have been declining toward the levels observed prior to the dam construction. Water levels at this site declined more in the shallow piezometer compared to the deep piezometer during the last part of the year. A negative gradient (upward flow) exists at the site after the construction of the beaver dam which became stronger during the latter part of the year.
- P13A/B-07 (Erin Branch of Credit River) – water levels in 2020 fluctuated approximately 0.4 m at the deep piezometer and less than 0.1 m at the shallow piezometer. Water levels in the shallow piezometer were similar during the year while the water levels in the deep piezometer decreased into summer and increased into the fall with stable conditions at the start and end of the year. The vertical gradient was positive (downward flow) with some of the highest positive values in the June through September. With the exception of P10-05 (wetland pond), the vertical gradient at P13-07 shows greater fluctuation than the other sites. Water levels are likely influenced by fluctuations in the water level of the Hillsburgh reservoir, which is located approximately 125 m from P13-07 and 680 m from TW1-88.

4.3.2 Surface Water Levels

Hydrographs for the surface water level monitoring locations are included on Figures E8 through E11 in Appendix E with the “a” figure including data for the last 5 years (2016 to 2020) and the “b” figures including data for 2020. A review of the hydrographs for the surface water level monitoring locations indicates the following:

- Pumping at TW1-88 does not influence the water levels in the surface water features.
- Water levels in the surface water features are summarized as follows:
  - SW3 (On-Site pond) – water levels at SW3 fluctuated approximately 0.2 m in 2020. The water levels fluctuate in response to precipitation events and prolonged drier periods with reduced precipitation. The current and historical changes in water levels are sometimes partially due to the outlet being partially obstructed and then cleared when the debris is removed.

- SW1 (creek downstream of On-Site pond) – not including some short-term increases (including an increase in January), the water levels at SW1 fluctuated approximately 0.1 m in 2020. The seasonal changes in the creek are minimal compared to the seasonal changes in the pond.
- SW7 (Erin Branch of Credit River) – water levels at SW7 fluctuated approximately 0.1 m in 2020 with some greater fluctuations in January and August. Water levels were on an increasing trend from approximately mid-2019 to mid-2020 and then declined during the second half of 2020. The changing water levels over time are partially due to changing stream conditions. Some changes in water levels in the past may also be due to upstream work or changes in the Hillsburgh reservoir level. Due to the changing stream conditions at SW7, a new station (SW7A-16) was installed in May 2016. However, recent changes to the stream on private property have affected the flow at SW7A-16 and it was abandoned. A new station (SW7B-20) was established approximately 100 m upstream in May 2021. Water level at SW7B-20 fluctuated less than 0.1 m from May to the end of the year.
- SW4 (stream flowing into Roman Lake) and SW5 (Roman Lake) – since the beaver activity in July 2017 the changes in water level trends have been different at the two stations showing smaller seasonal changes and are generally higher at these two stations compared to previous years. After the initial rise in water levels at SW4 in 2017 following the beaver dam construction, the water levels have been declining through 2019 and 2020 back to pre-beaver activity levels. In 2019 the water level at SW4 decreased approximately 0.2 m while the water level at SW5 was stable over the year.

Surface water level fluctuations are attributed to seasonal and long-term variations in precipitation and recharge and do not appear to be the result of pumping of TW1-88. There is no apparent correlation between increases in pumping and decreases in stream flow resulting from declines in groundwater discharge to streams that are sufficient to affect the ecology of the stream. The water taking does not hinder the ability of the water resource to support existing natural functions of the ecosystem. The withdrawal does not result in physical and ecological impacts to the wetlands in the Eramosa River headwaters.

4.3.3 Surface Water Flow

The monthly stream flow data collected in 2020 are summarized in Appendix F. Surface water flow is measured at three stations in accordance with the PTTW; SW1 (creek downgradient of On-Site pond and wetland), SW3 (outlet from On-Site pond) and SW7 (Erin Branch of Credit River). Surface water flows are also measured at SW7A and SW7B. The surface water flows for the five stations are shown on Figure F1 through F3 in Appendix F with the “a” figure including data for the last 5 years (2016 to 2020) and the “b” figures including data for 2020.

Flow from the On-Site pond (SW3) is similar to previous years. The surface water flow increased January due to a precipitation/melt event, then increased through the spring (until mid-May) and then decreased to the beginning of June and was stable for the remainder of the year. The spring flows were typically between 10 L/s and 20 L/s, while the summer low flows were generally less than 10 L/s. Manual flow measurements ranged from 1.7 L/s (November) to 15.1 L/s (May).

Stage-discharge curves were updated in 2020 for SW1 and SW7, which show the relationship between surface water elevation (stage) and stream flow (discharge) based on the manual measurements taken monthly. The stage-discharge curves for both SW1 and SW7 were re-evaluated using stream characteristics (the same methods as in 2014 through 2019), to improve evaluation of the 2020 monitoring data. The stage-discharge curves for SW1 and SW7 remained the same as in 2019 and are shown on Figures F4 and F5 in Appendix F. These curves have been used to estimate the flow for 2020 at these stations.

Monitoring data at SW7A has been collected since May 2016, however, due to changing stream conditions the station was abandoned in May 2020 and a new station, SW7B, was established further upstream. The available data from 2020 from SW7A were used to improve the stage-discharge relationship for this station, which remained the same in 2020 (Figure F6). Water levels at this station remain constant at most stream discharge levels and therefore development of the stage-discharge curve continues to be challenging, with portions of the record reported with a lower confidence. The stage-discharge curve was used to calculate the flow in 2020. A stage-discharge curve will be established for SW7B in 2022 after sufficient data is collected at the site in 2021.

Surface water flow at SW1 (combined flow from On-Site pond and wetland) has been similar over the past five years. Low flows were observed in May/June and again in August/September. These low flows are similar to those observed in 2018 and 2019. The flows fall within the historic range observed at the station. As in the past, some of the logger recorded values are suspected to be influenced by ice conditions and are reported with a lower confidence. Stream flow during the spring was approximately 20 L/s to 70 L/s with some flows more than 100 L/s. With the exception of some higher flows in June, the summer flows were generally less than 10 L/s and increasing to between approximately 10 L/s and 30 L/s during the late summer and fall. The manual flow measurements ranged from 7.9 L/s (July and August) to 20.2 L/s (March). There is no evidence of a decline in stream flow at SW1.

Stream flow at SW7 is typically less than at the other stations, with the exception of some low flows in the summer. In the past, it has been interpreted that increases in flow may be related to changes in the Hillsburgh reservoir or potential work upstream. Surface water flow at SW7 is similar to flow measured historically at the station with changes typically due to changing stream conditions. Manual flow measurements ranged from 5.3 L/s (January and February) to 13.8 L/s (December). There is no evidence of a decline in stream flow at SW7.

Stream flow at the new station (SW7A) was monitored for four months and generally declined from January through April going from approximately 110 L/s to around 20 L/s. During the precipitation/melt event in January, the flows were as high as 190 L/s. Manual flow measurements during the first four months of the year ranged from 31.7 L/s (January) to 35.1 L/s (March). Manual flow measurements during the last eight months as SW7B ranged from 25.9 L/s (June) to 41.3 L/s (May). The flow at SW7A and SW7B are greater than the flow at SW7 due to the fact that SW7A is located in a defined channel as opposed to multiple channels at SW7, where only part of the total flow is measured.

Surface water flow at all the stations is influenced by precipitation and/or melt events and does not appear to be influenced by pumping at TW1-88. In the past, surface water flow at SW7 also appeared to be influenced by other factors that may include changes in reservoir level or upstream work.

5.0 CONCLUSIONS

The following conclusions are provided based on the results of the 2020 monitoring program.

1) Nestlé has complied with all the conditions in the existing permit for the Erin well TW1-88.

2) TW1-88 operated in accordance with the pumping limits outlined in the PTTW. The daily water taking at TW1-88 in 2020 ranged from 0 L to 206,873 L. The average daily taking in 2020 was 64,017 L. The total volume of water taken in 2020 from TW1-88 was 23,430,098 L or 6% of the permitted volume.

3) The interpreted non-pumping water levels in TW1-88, which obtains water from the bedrock aquifer, ranged from approximately 422.7 to 423.4 masl in 2020. The interpreted water levels under variable pumping conditions ranged from approximately 417.5 to 418.5 masl. The drawdown at the well ranged from approximately 5.5 to 6.5 m in 2020.

4) Pumping from TW1-88 causes local declines in the bedrock aquifer groundwater levels in the immediate vicinity of the well, but there is no evidence of long-term declining trends, as water levels return to non-pumping levels when pumping ceases.

5) Water levels measured within the overburden during the summer of 2020 were some of the lowest observed over the past five years; however, they do not appear to be influenced by pumping of TW1-88. There is no significant interaction between the bedrock and overburden aquifers at the current rate of taking.

6) Surface water level fluctuations are attributed to seasonal and long-term variations in precipitation and recharge and do not appear to be the result of pumping of TW1-88. There is no apparent correlation between increases in pumping from TW1-88 and decreases in stream flow. There are no declines in groundwater discharge to streams that are sufficient to affect the ecology of the streams.

7) The water taking does not hinder the ability of the water resource to support existing natural functions of the ecosystem. The withdrawal does not result in physical and ecological impacts to the wetlands in the Eramosa River headwaters.

8) The water taking does not prevent water users from continuing their established pattern of use. The groundwater withdrawal from TW1-88 does not interfere with existing municipal uses or private uses. There have been no well interference complaints at Erin due to the water taking from TW1-88.

9) No irreversible impacts have been observed due to pumping of the aquifer or deterioration of groundwater quantity on neighbouring properties.

10) Based on the monitoring data collected, the 2020 water taking at TW1-88 is sustainable.

6.0 RECOMMENDATIONS

It is recommended that the existing monitoring program be kept in place with the following changes.

1) Surface Water Monitoring changes

   a. The current SW1 and SW7 stations should be relocated to areas with more favourable hydraulics (i.e., single channel, stable conditions and no backwater). The observed relationship between water level and stream flow at the existing SW1 and SW7 locations is variable or has deteriorated in recent years. Relocation of SW1 and SW7 will achieve a better relationship between water levels and flow (i.e., further development of a stage discharge curve). A new station has been developed at SW1A on the northeast side of 6th Line, upstream of the road crossing to replace SW1. A new station has been developed at SW7A in the stream channel by D7B that has been used for flow monitoring to replace SW7; however, recent changes to the stream on private property have affected the flow at this station and a new monitoring location, SW7B, has been established further upstream. To improve the quality of water level data collected at the on-Site pond, it is also recommended that an additional logger be installed upstream of the pond outlet.

This station would improve pond outlet estimates through a stage-discharge relationship. There should be an overlap in the monitoring of the new and existing stations until the stage discharge curves are developed.

2) Mini-piezometer changes

   a. Monitoring at P06A/B should be discontinued. P06A/B and P03A/B are both located in the on-Site pond and provide similar data. In addition, P01A/B is located in the creek just outside the pond.

3) Overburden Private Well changes

   a. The monitoring at the private wells in the overburden should be discontinued. The monitoring program has been ongoing for more than 15 years and no impacts to private wells or the surrounding aquifer have been noted. In addition, the monitoring data from these private wells are often influenced by pumping at the private well itself.

   b. Discontinue monitoring at overburden wells D2B (homeowner does not want well monitored), D7B, D26C and D27 (homeowner does not want well monitored), as there are no impacts to the overburden aquifer. On-site monitoring wells (MW3A/B-00, MW5B-05, MW6B-05, MW11B-08 and MW12B-08) would still be used for monitoring water levels in the overburden including four nested wells. Two new monitoring wells will also be installed by the D24 and D26 wells that will include an overburden monitoring point.

4) Overburden Monitoring Well Changes

   a. Discontinue monitoring at overburden wells MW2-00, TW1-99 and D36A. There are no impacts to the overburden aquifer and these wells provide similar data to other on-site monitoring wells constructed in the overburden aquifer. On-site monitoring wells (MW3A/B-00, MW5B-05, MW6B-05, MW11B-08 and MW12B-08) would still be used for monitoring water levels in the overburden including four nested wells.

5) Bedrock Private Well Changes

   a. Monitoring at some of the private wells should be discontinued or replaced with dedicated monitoring wells. The monitoring program has been on-going for more than 15 years and no impacts to private wells or the surrounding aquifer have been noted. In addition, the monitoring data from these private wells are often influenced by pumping at the private well itself.

   b. Discontinue monitoring at D19 as the homeowner does not want the well monitored. Private well D3 is located in the same direction from TW1-88 and is closer to the pumping well allowing for sufficient monitoring in that area.

   c. Discontinue monitoring at D8 and D15. A new monitoring well (MW1-18A/B) has been completed in the general area of D8 and D15 which can replace the monitoring at the private wells.

   d. Discontinue monitoring at D24A and D24B and install a new monitoring well in the same area. Note that this monitoring well will be completed with intervals in both the overburden and bedrock.

   e. Discontinue monitoring at D26A and D26B and install a new monitoring well in the same area. Note that this monitoring well will be completed with intervals in both the overburden and bedrock.

   f. Discontinue monitoring at D2A as the homeowner does not want their well monitored. The new monitoring wells to be installed by D24 and D26 would provide sufficient coverage for monitoring at D2A.

6) Bedrock Monitoring Well Changes

   a. Discontinue monitoring at D32 and D36B as these wells provide similar data to other wells in the area and are outside of the 1 m drawdown area. On-site monitoring wells (MW6A-05 and MW12A-08) are in the same area as these wells and would still be used for monitoring water levels in the bedrock.

7) The PTTW should be updated with the following administrative changes:

   a. MW11B-08 is listed as monthly monitoring under bedrock wells and it should be listed as monthly monitoring under overburden wells;

   b. MW12B-08 is listed as monthly monitoring under bedrock wells and it should be listed as monthly monitoring under overburden wells; and

   c. D27 is listed as both continuous and monthly monitoring under overburden wells and it should only be monthly monitoring (note that this well is recommended to be removed from the monitoring conditions).

Signature Page

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John Piersol, M.Sc., P.Geo.
Senior Hydrogeologist, Associate

GRP/JAP/KM/ll

https://golderassociates.sharepoint.com/sites/139500/project files/6 deliverables/erin/2020 annual report/final/20449101 fnl rpt 2021mar23 2020 erin report.docx

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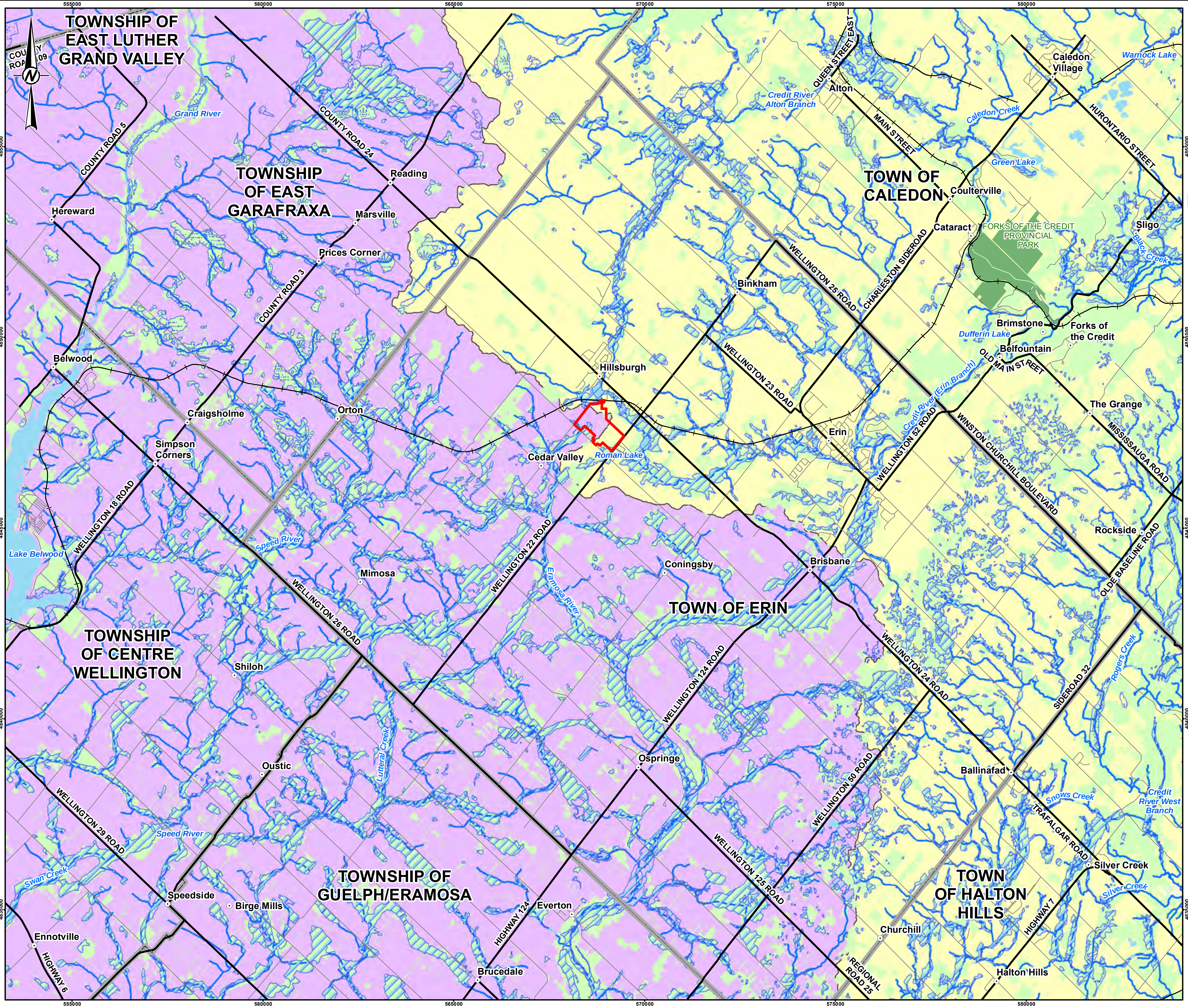
FIGURES

Figures 1.1 to 4.3



LEGEND

- City/Town
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Wooded Area
- Provincial Park
- Municipal Boundary
- Property Boundary

Watersheds

- Credit - 16 Mile
- Upper Grand

0 2 4 6 8

1:100,000 Kilometres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
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PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
SITE LOCATION

CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-26
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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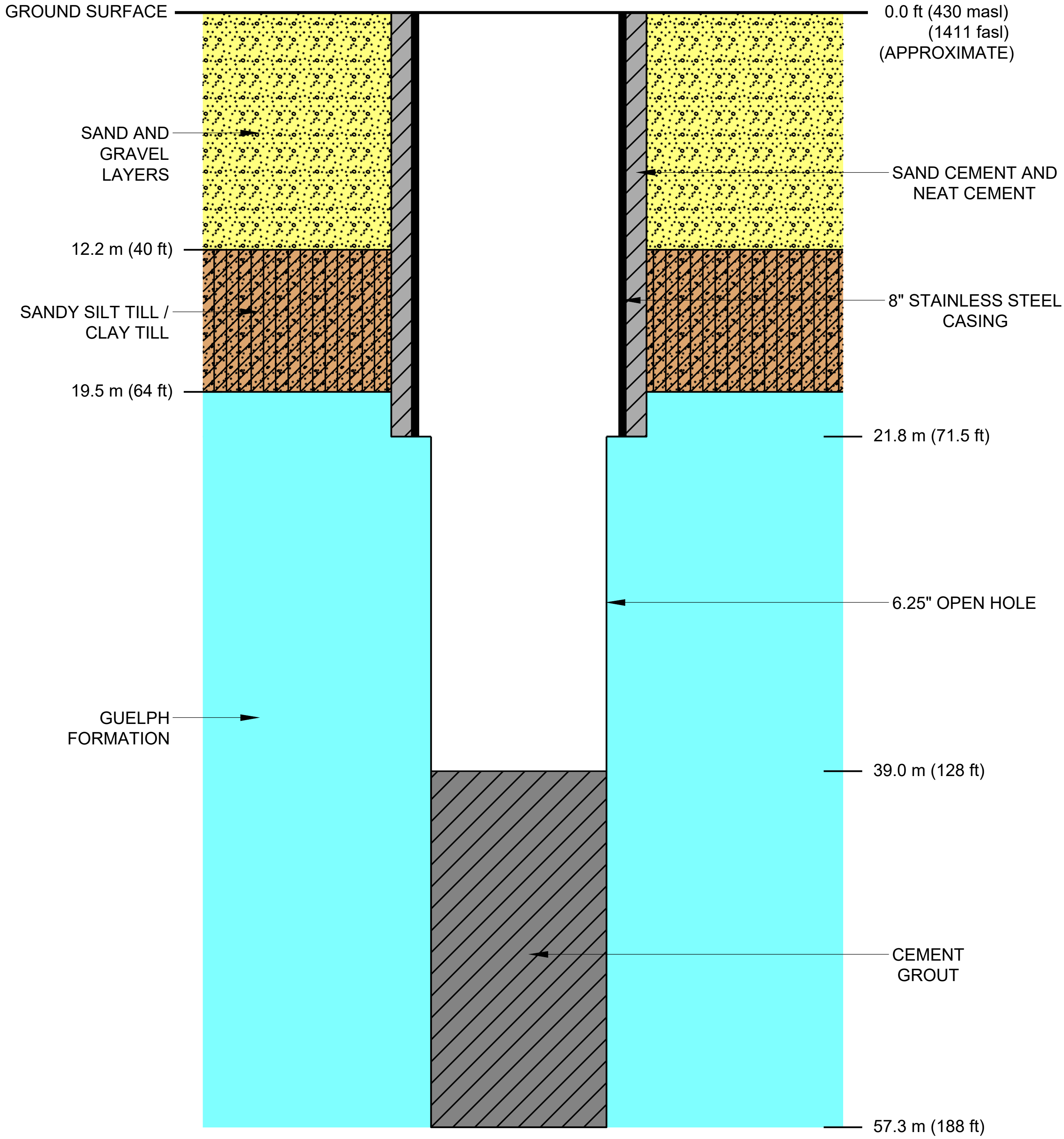

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2021-02-02
PREPARED	SA/DD
DESIGN	
REVIEW	GP
APPROVED	GP

TITLE
ERIN TW1-88

PROJECT No.	PHASE	Rev.	FIGURE
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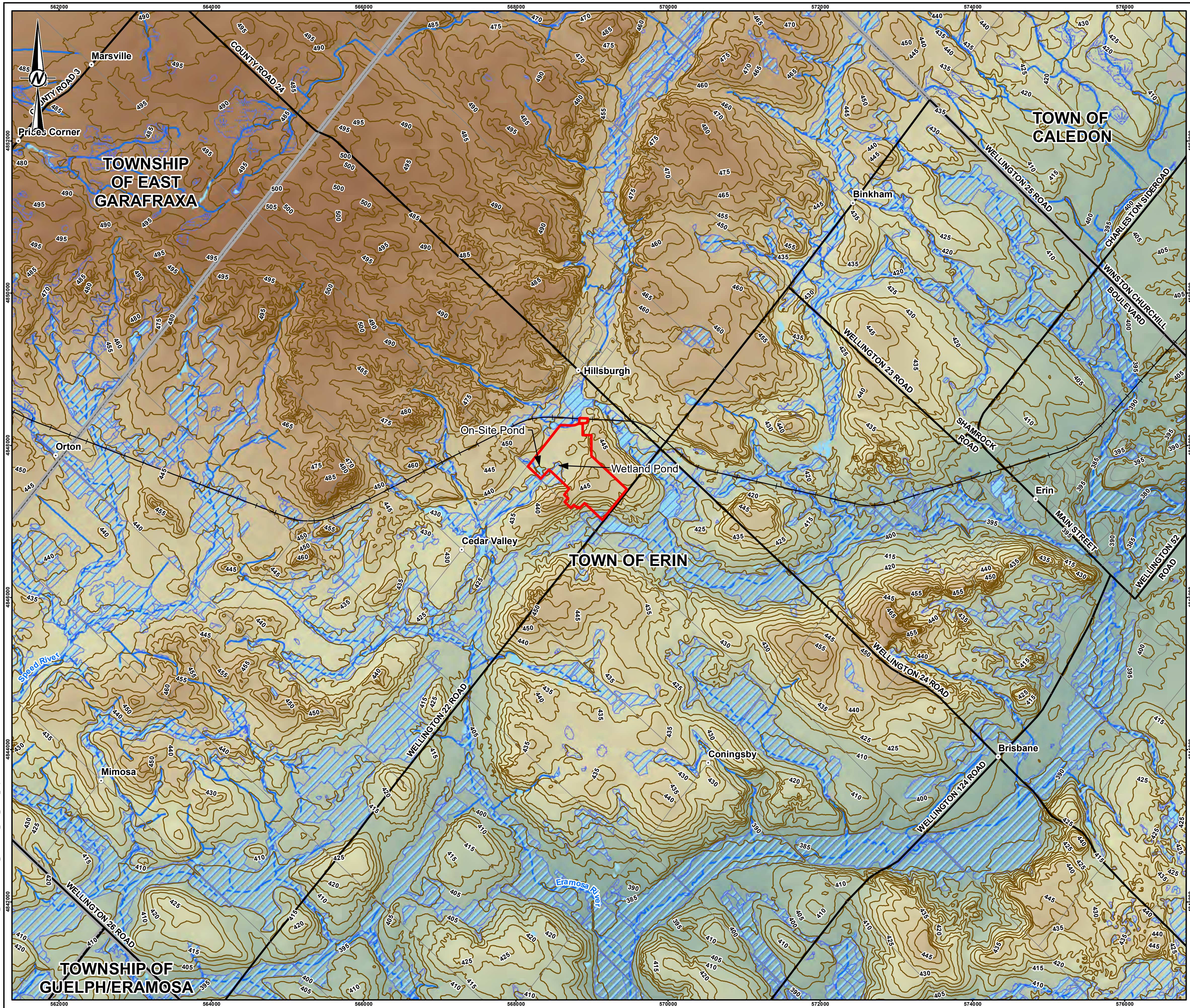

LEGEND

- City/Town
- Main Road
- Local Road
- Railway
- Topographic Elevation Contour (masl)
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

Topographic Elevation (masl)

High : 505

Low : 307

0 1 2 3 4

1:50,000 Kilometres

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
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CLIENT
NESTLE WATERS CANADA

PROJECT
2018 ANNUAL REPORT

TITLE
TOPOGRAPHY AND DRAINAGE

CONSULTANT

YYYY-MM-DD	2021-02-02
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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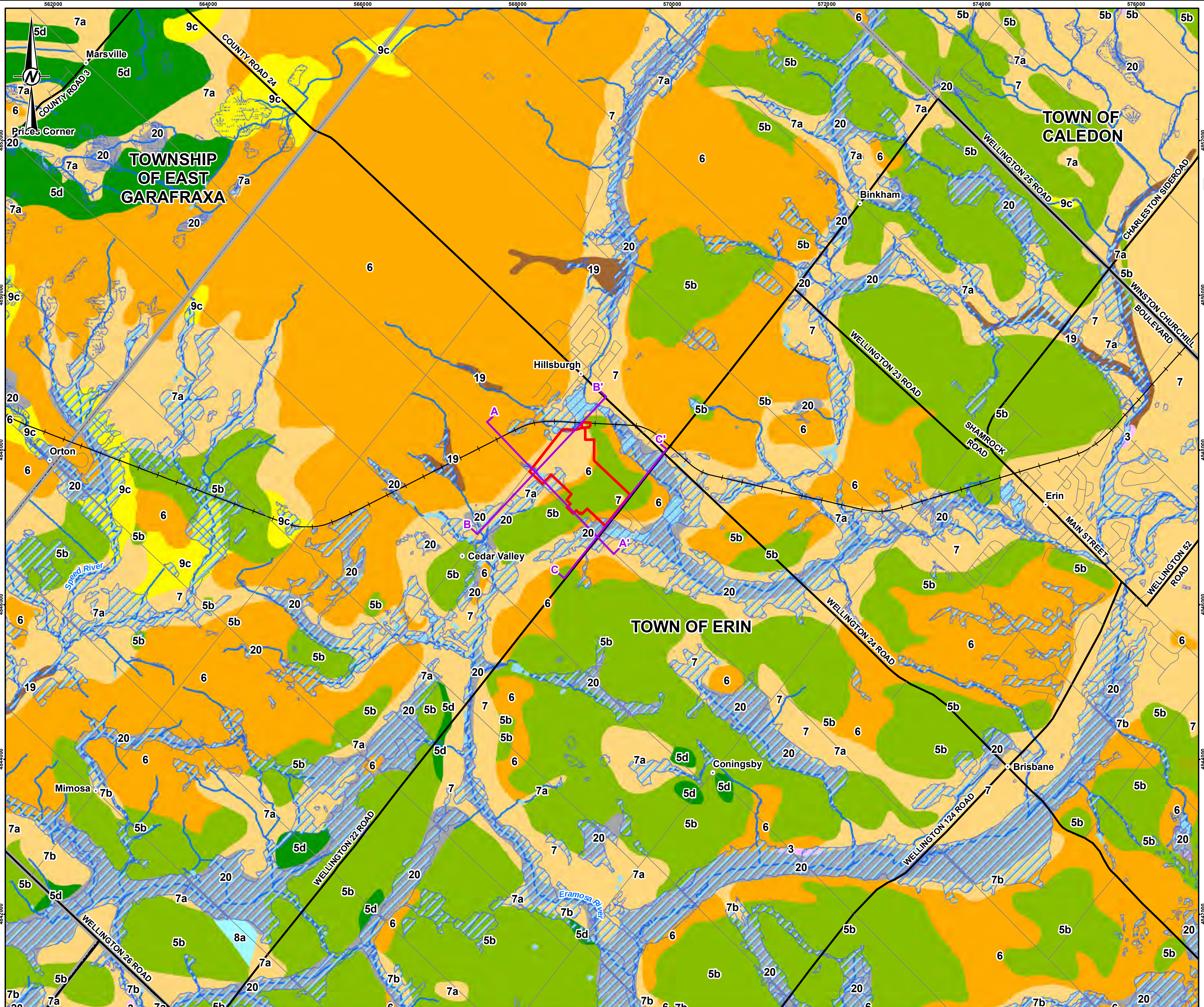

LEGEND

- City/Town
- Cross-Section Location
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary
- 3: Paleozoic bedrock
- 5b: Stone-poor, carbonate-derived silty to sandy till
- 5d: Glaciolacustrine-derived silty to clayey till
- 6: Ice-contact stratified deposits
- 7: Glaciofluvial deposits
- 7a: Sandy deposits
- 7b: Gravelly deposits
- 8a: Massive-well laminated
- 9c: Foreshore-basinal deposits
- 19: Modern alluvial deposits
- 20: Organic deposits

0 1 2 3 4
1:50,000 Kilometres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
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CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
REGIONAL QUATERNARY GEOLOGY

CONSULTANT
GOLDER

YYYY-MM-DD	2021-01-26
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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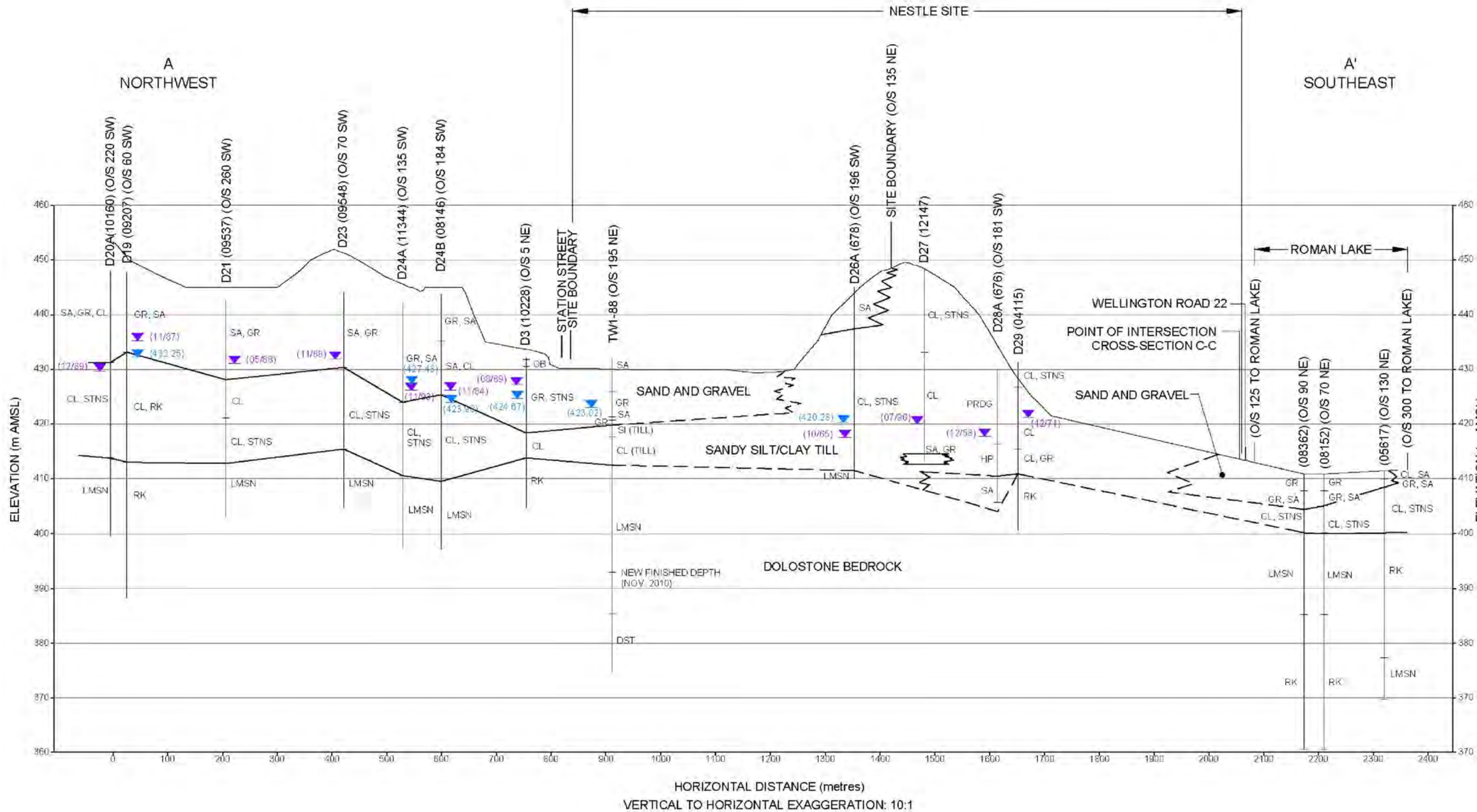

LEGEND

D19 (9207) — WELL DESIGNATION

GROUND SURFACE

(11/87) — WATER LEVEL ON WELL COMPLETION (MONTH / YEAR)

(432.25) — STATIC WATER LEVEL (NOV. 3/05)

PRDG	-	PRE DUG
OB	-	OVERBURDEN
CL	-	CLAY
SI	-	SILT
SA	-	SAND
GR	-	GRAVEL
STNS	-	STONES
HP	-	HARDPAN
RK	-	ROCK (BEDROCK)
LMSN	-	LIMESTONE (BEDROCK)
DST	-	DOLOSTONE
CL, SA	-	FIRST COMPONENT IS MOST COMMON MATERIAL

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
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PROJECTION: UTM NAD83 ZONE 17

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
HYDROGEOLOGIC CROSS-SECTION A-A'

CONSULTANT: GOLDER

YYYY-MM-DD	2021-01-26
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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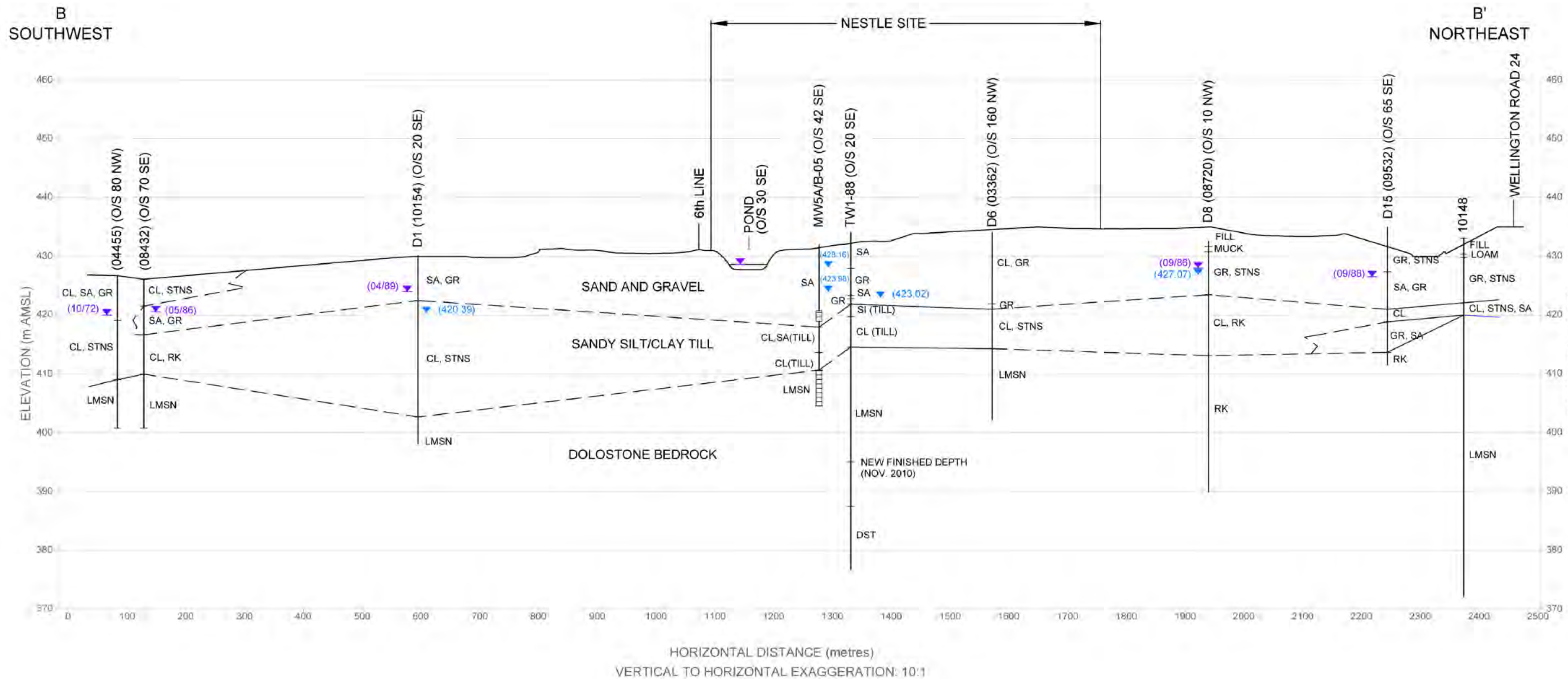

LEGEND

D8 — WELL DESIGNATION

GROUND SURFACE

(09/86) WATER LEVEL (m AMSL) ON WELL COMPLETION (MONTH / YEAR)

(427.07) STATIC WATER LEVEL (NOV. 3/05)

PRDG	-	PRE DUG
CL	-	CLAY
SI	-	SILT
SA	-	SAND
GR	-	GRAVEL
STNS	-	STONES
HP	-	HARDPAN
RK	-	ROCK (BEDROCK)
LMSN	-	LIMESTONE (BEDROCK)
DST	-	DOLOSTONE
CL, SA	-	FIRST COMPONENT IS MOST COMMON MATERIAL

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
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PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
HYDROGEOLOGIC CROSS-SECTION B-B'

CONSULTANT
GOLDER

YYYY-MM-DD	2021-02-02
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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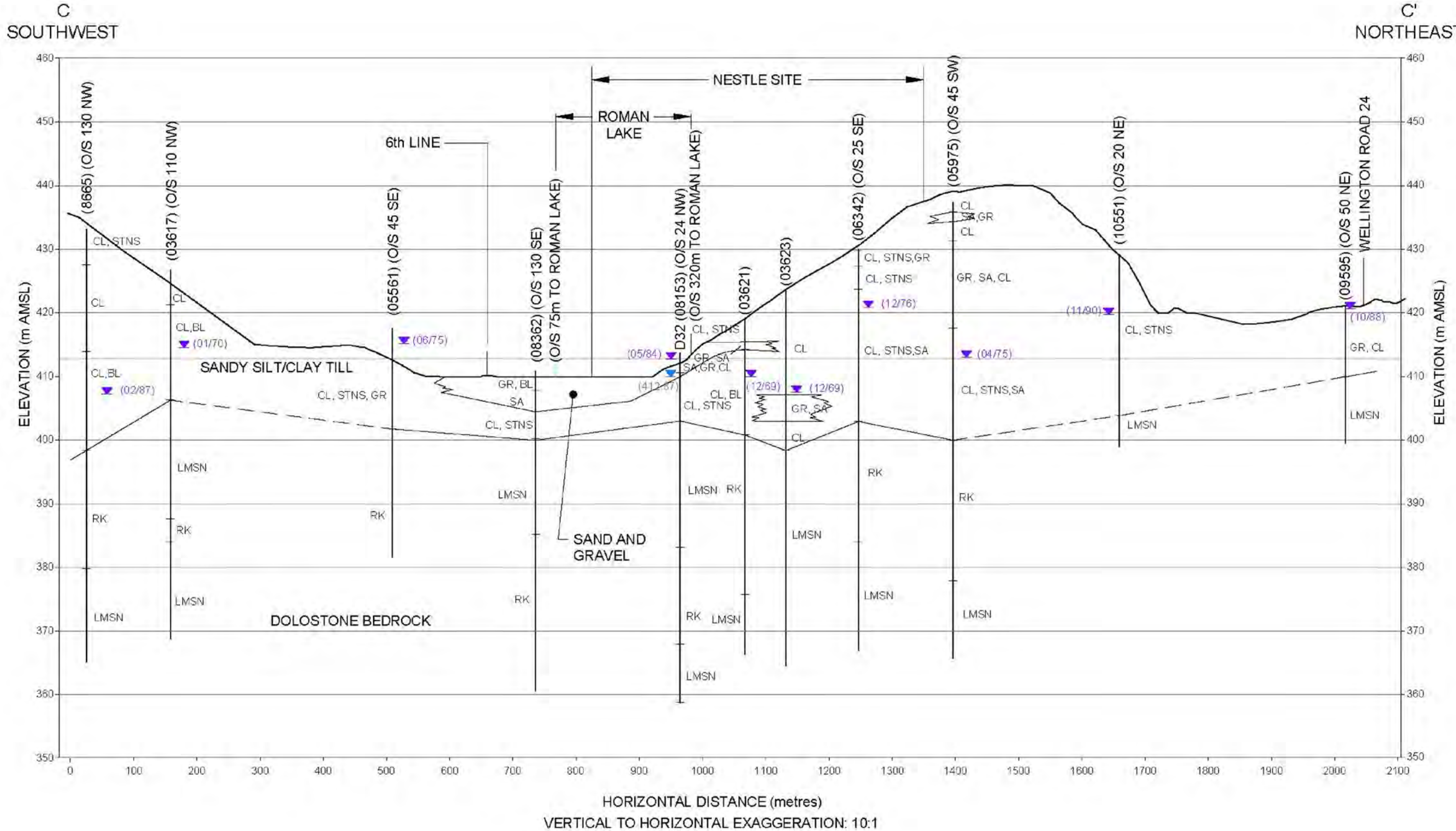

LEGEND

D32 — WELL DESIGNATION

GROUND SURFACE

(05/84) — WATER LEVEL ON WELL COMPLETION (MONTH / YEAR)

(412.87) — STATIC WATER LEVEL (NOV. 3/05)

PRDG	-	PRE DUG
OB	-	OVERBURDEN
CL	-	CLAY
SI	-	SILT
SA	-	SAND
GR	-	GRAVEL
BL	-	BOULDER
STNS	-	STONES
HP	-	HARDPAN
RK	-	ROCK (BEDROCK)
LMSN	-	LIMESTONE (BEDROCK)
DST	-	DOLOSTONE
CL, SA	-	FIRST COMPONENT IS MOST COMMON MATERIAL

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
HYDROGEOLOGIC CROSS-SECTION C-C'

CONSULTANT: GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
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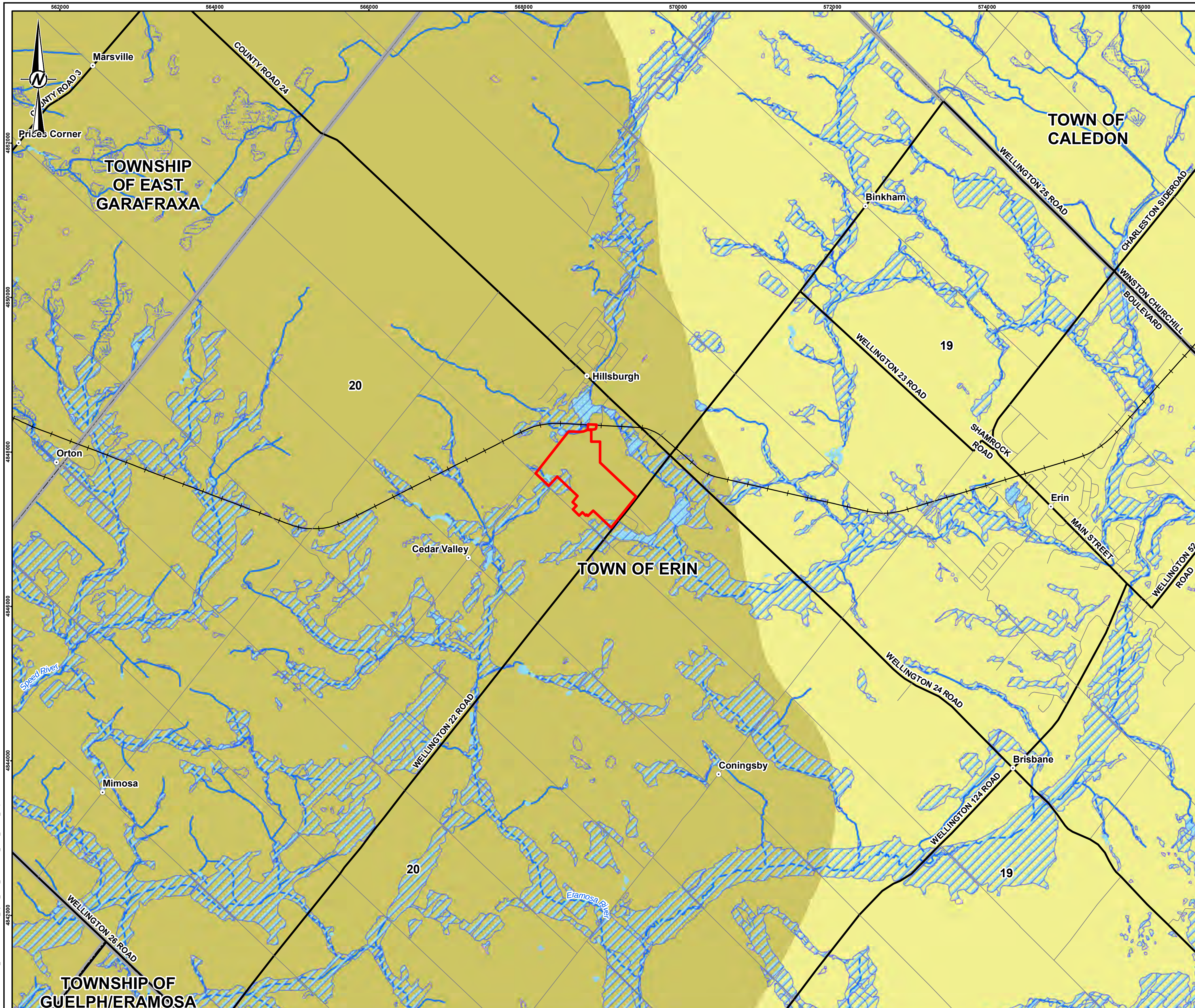

LEGEND

- City/Town
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary
- 20: Guelph
- 19: Amabel

0 1 2 3 4

1:50,000 Kilometres

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
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PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
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TITLE
REGIONAL BEDROCK GEOLOGY

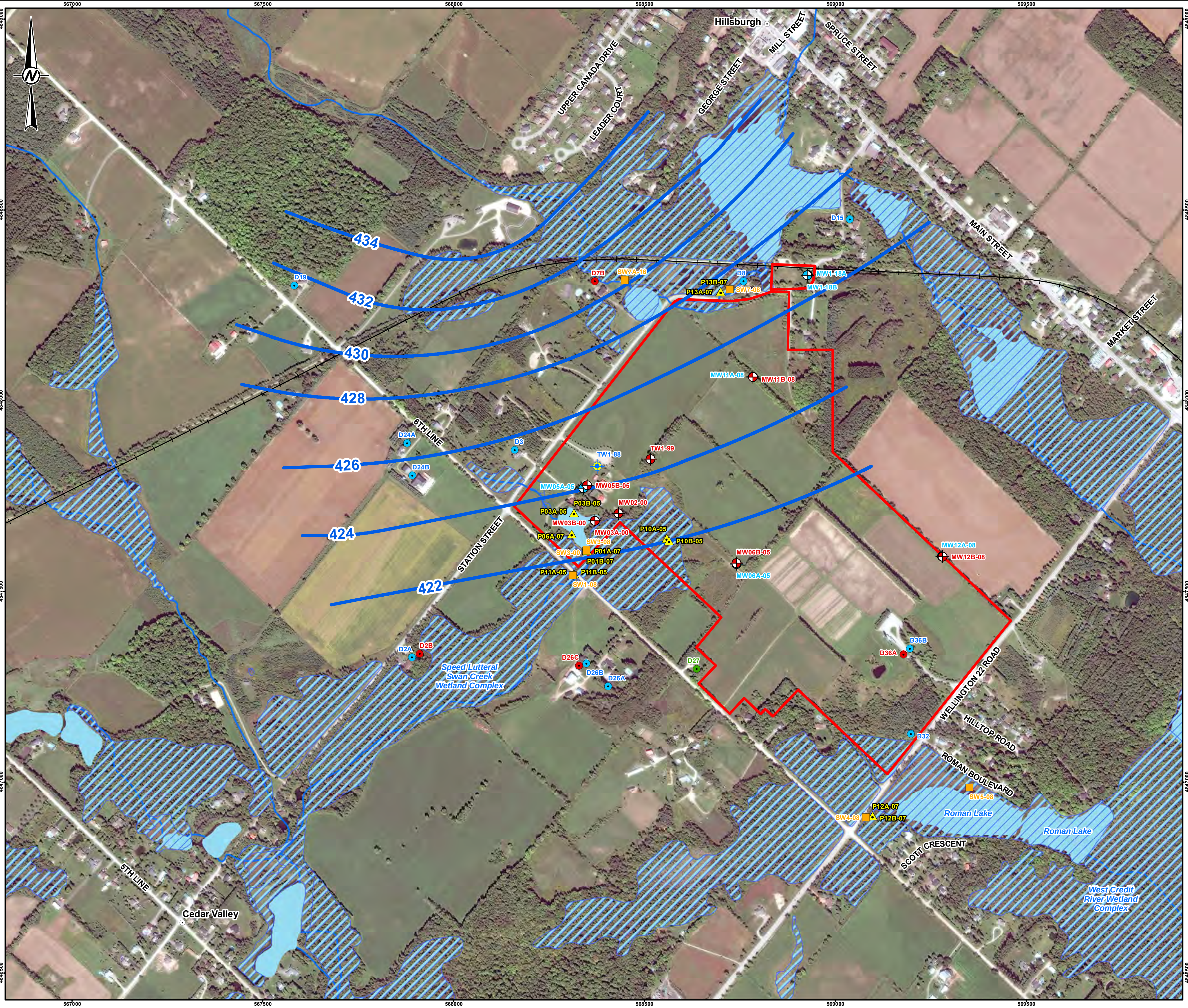
CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	2.6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm



LEGEND

- City/Town
- Monitoring Well (Bedrock)
- Monitoring Well (Overburden)
- Production Well
- Private Well (Bedrock)
- Private Well (Overburden)
- Private Well (Deep Overburden)
- Piezometer
- Surface Water Station
- Water Level Elevation Contour (Jan. 24, 2000)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
POTENTIOMETRIC SURFACE OF GUELPH AQUIFER (NON-PUMPING CONDITION JANUARY 2000)

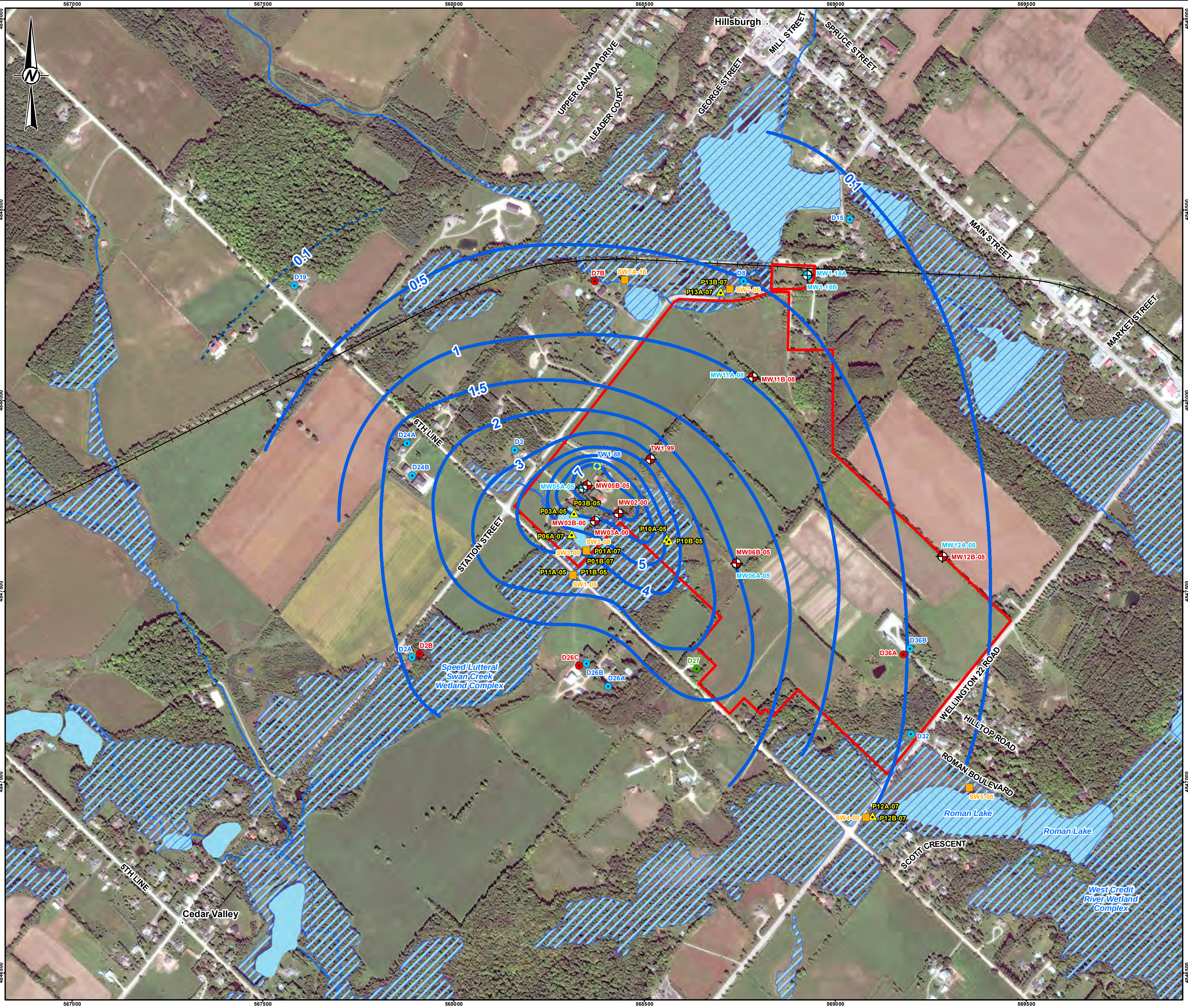
CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101(2000)	0016	1.0	2.7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm



LEGEND

- City/Town
- Monitoring Well (Bedrock)
- Monitoring Well (Overburden)
- Production Well
- Private Well (Bedrock)
- Private Well (Overburden)
- Private Well (Deep Overburden)
- Piezometer
- Surface Water Station
- Drawdown Contour (June 13/15, 2001)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

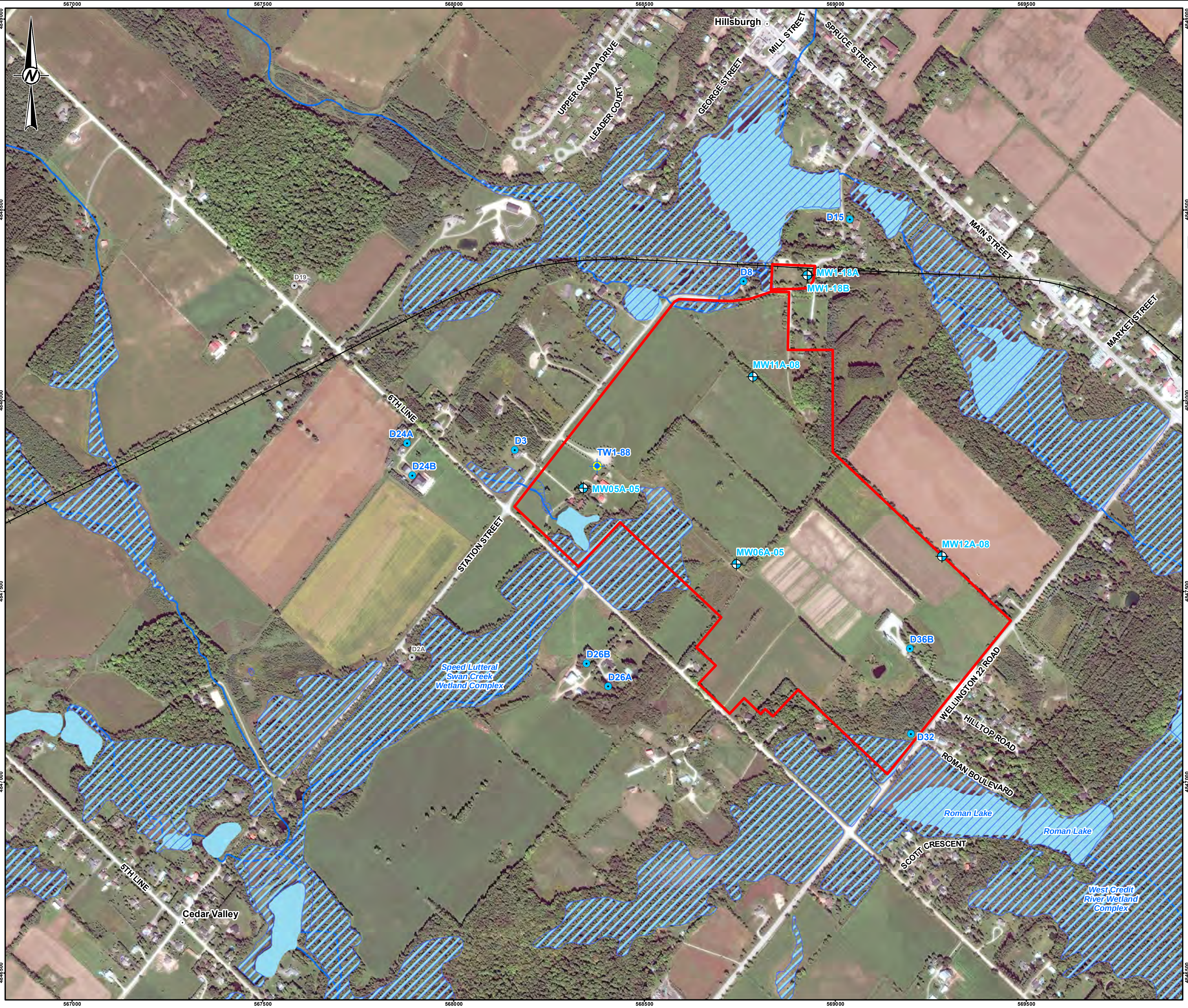
TITLE
INTERPRETED DRAWDOWN IN BEDROCK AQUIFER (JUNE 2001)

CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101(2000)	0016	1.0	2.8



LEGEND

- City/Town
- Production Well
- Monitoring Well (Bedrock)
- Private Well (Bedrock)
- Private Well (Bedrock - not monitored)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
2020 BEDROCK MONITORING LOCATIONS

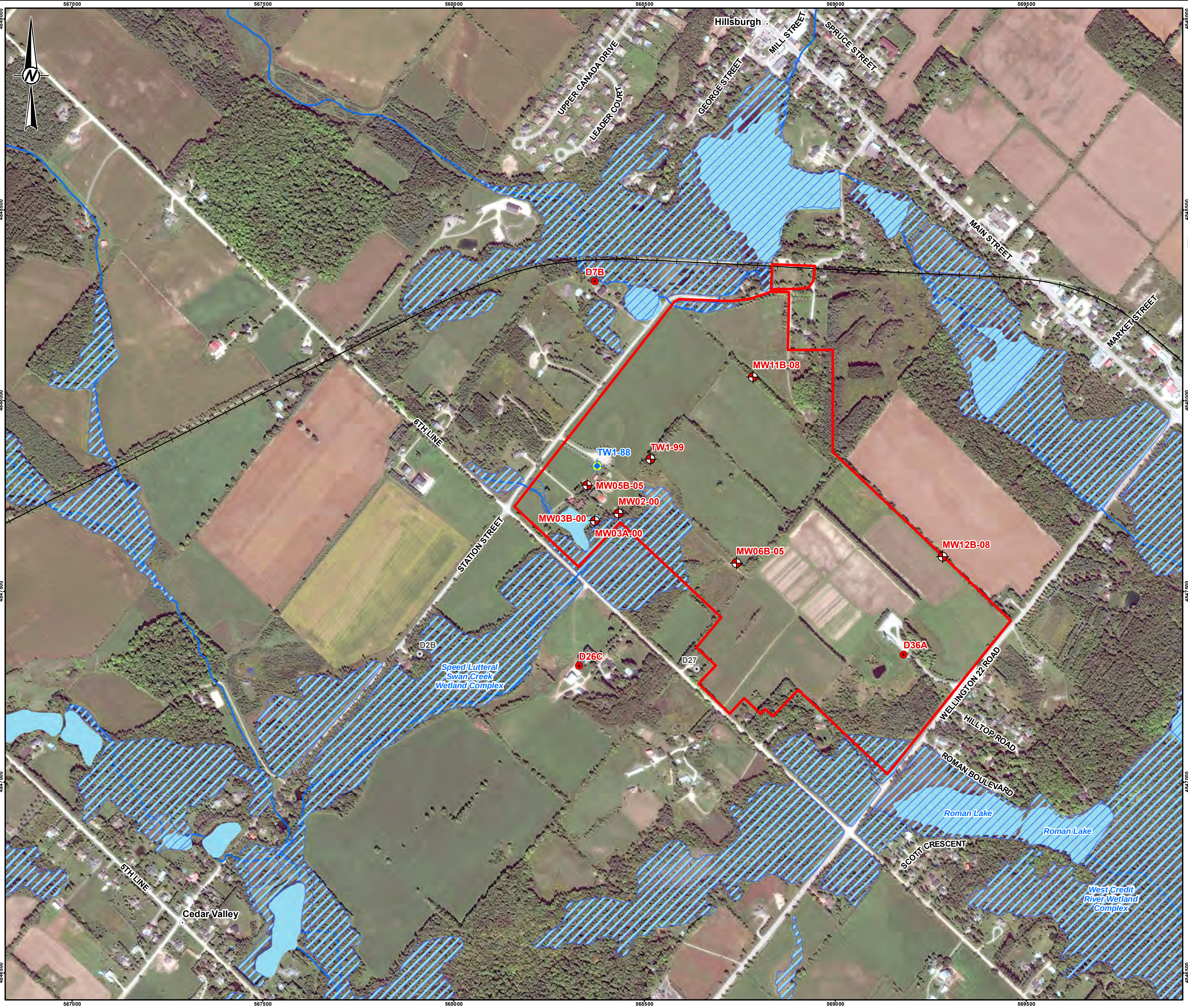
CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101(2000)	0016	1.0	3.1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm



LEGEND

- City/Town
- Production Well
- Monitoring Well (Overburden)
- Private Well (Overburden)
- Private Well (Overburden - not monitored)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
2020 OVERBURDEN MONITORING LOCATIONS

CONSULTANT

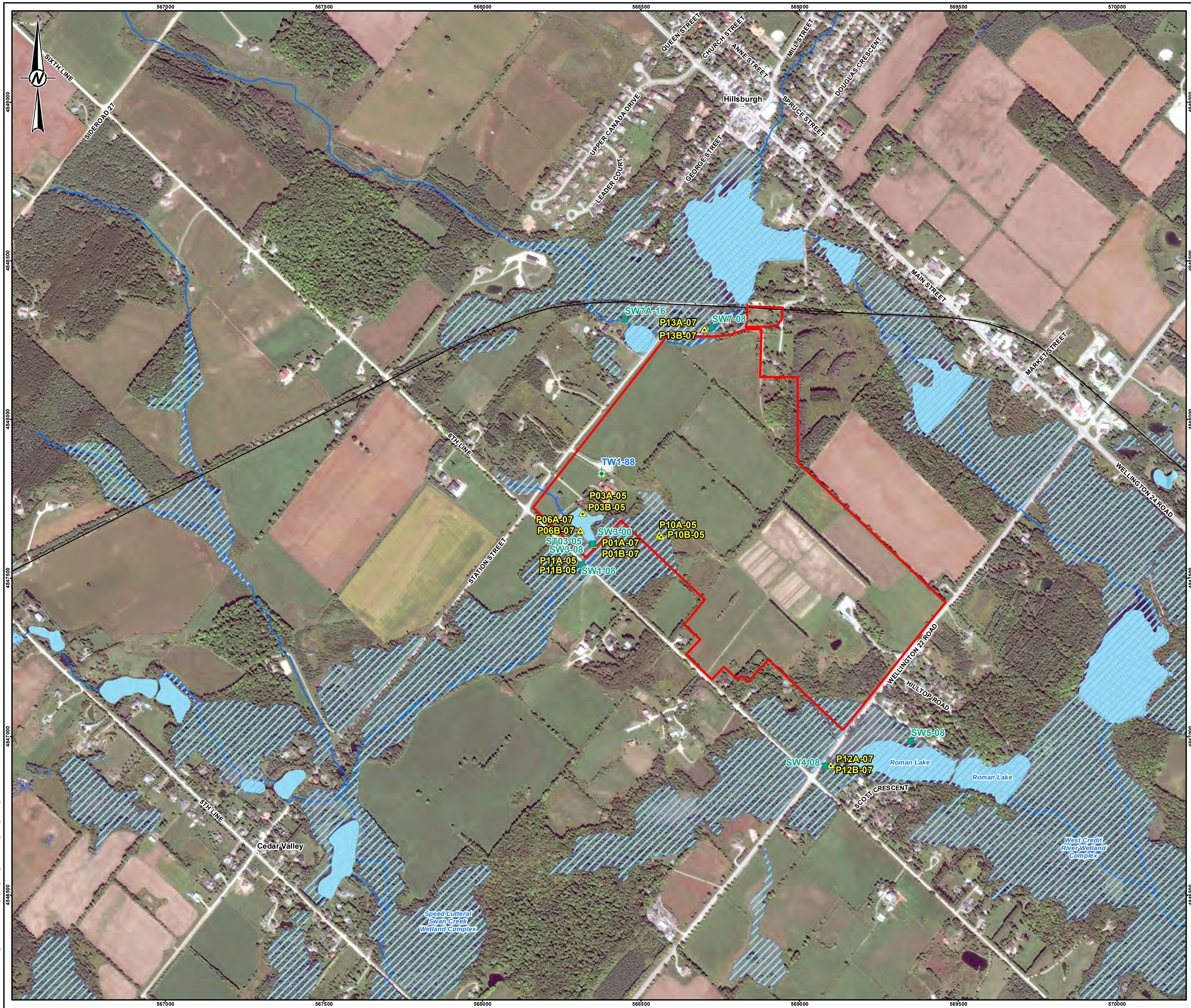
GOLDER

YYYY-MM-DD	2021-02-02
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	3.2

25mm

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- City/Town
- Production Well
- Piezometer
- Surface Water Station
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600 800
1:12,000 Meters

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
2020 SURFACE WATER MONITORING LOCATIONS

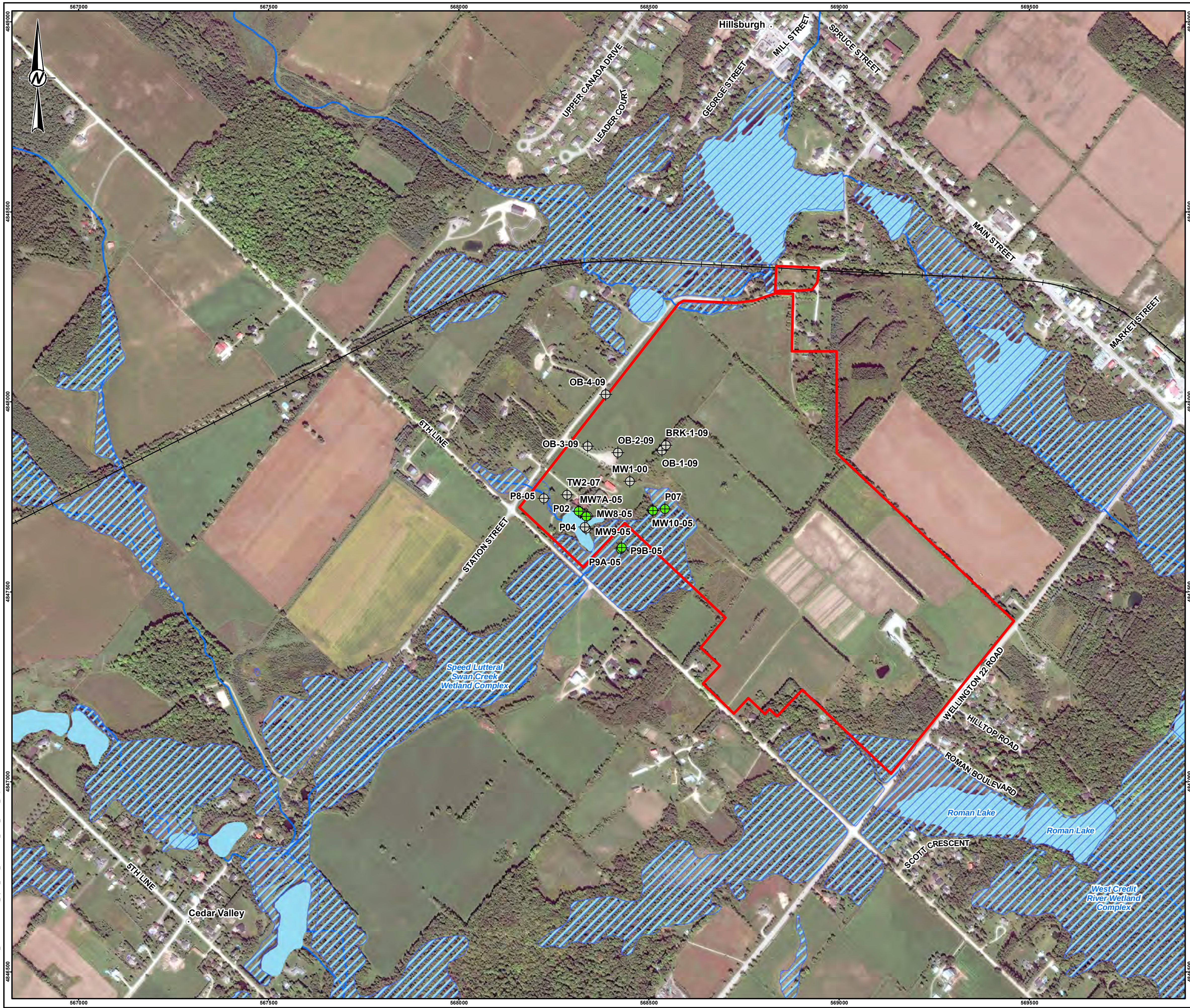
CONSULTANT

GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	3.3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- City/Town
- Destroyed/Removed/Decommissioned
- Unused (status unknown)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)

BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

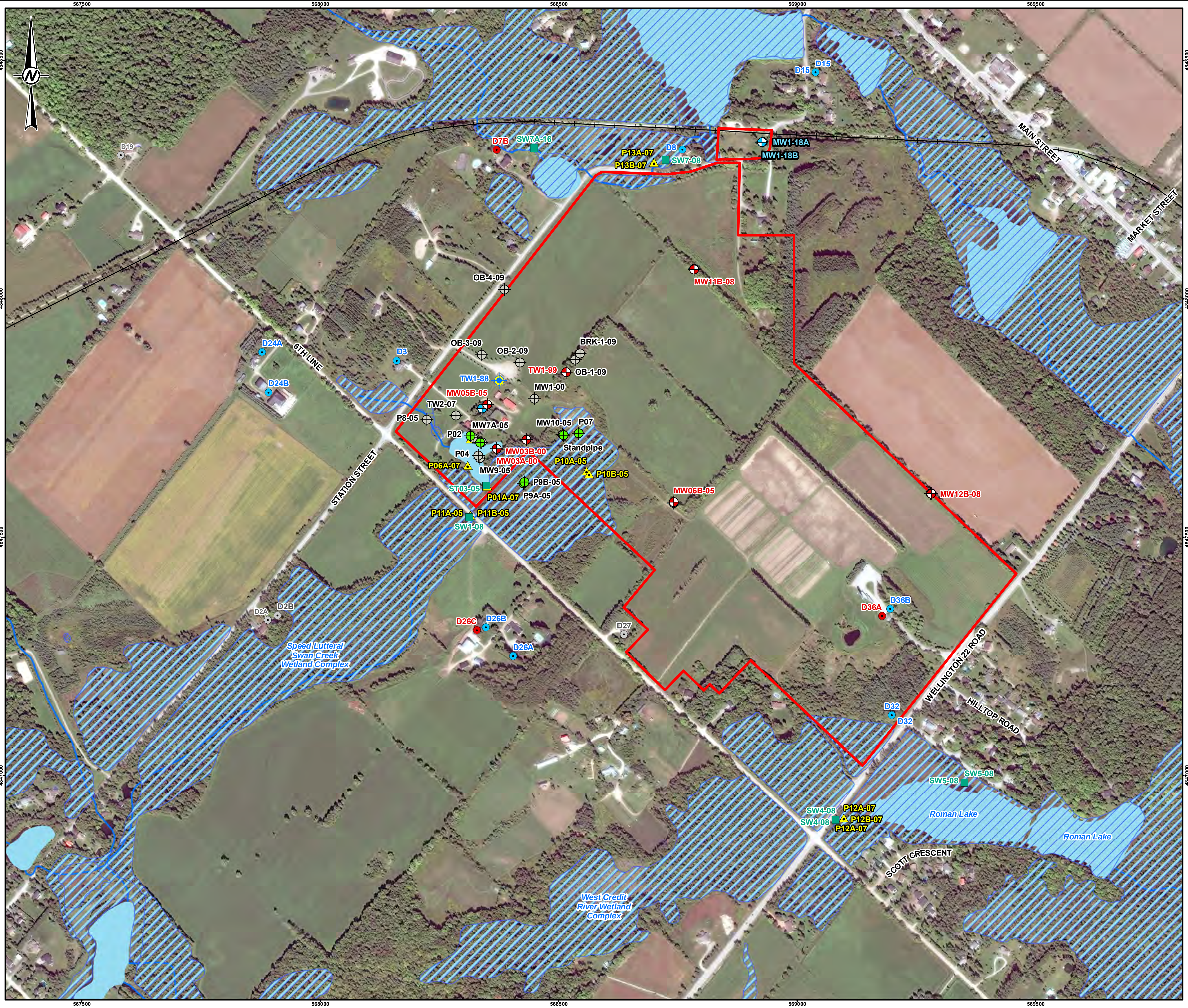
TITLE
UNUSED OR DECOMMISSIONED WELLS

CONSULTANT
GOLDER

YYYY-MM-DD	2021-01-25
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	3.4

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- City/Town
- Destroyed/Removed/Decommissioned
- Unused (status unknown)
- Production Well
- Monitoring Well (Bedrock)
- Monitoring Well (Overburden)
- Private Well (Bedrock)
- Private Well (Overburden)
- Piezometer
- Surface Water Station
- Private Well (Overburden - not monitored)
- Private Well (Bedrock - not monitored)
- Main Road
- Local Road
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600

1:8,000 Meters

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

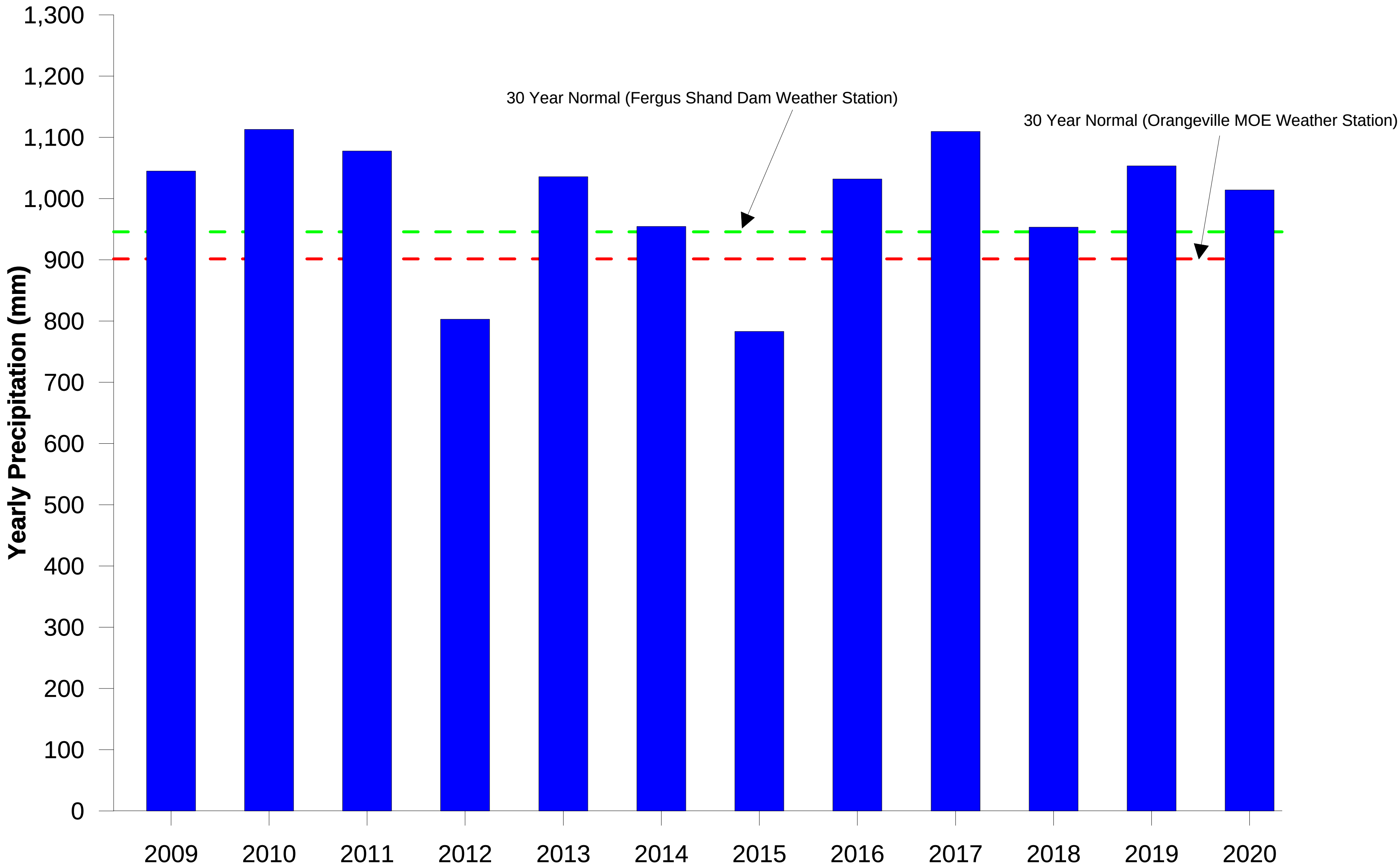
TITLE
WELL LOCATIONS

CONSULTANT

GOLDER

YYYY-MM-DD	2021-02-02
DESIGNED	JMC
PREPARED	JMC/PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	3.5



Data for Orangeville Station prior to 2016, and data for Shand Dam Station from 2016-2019

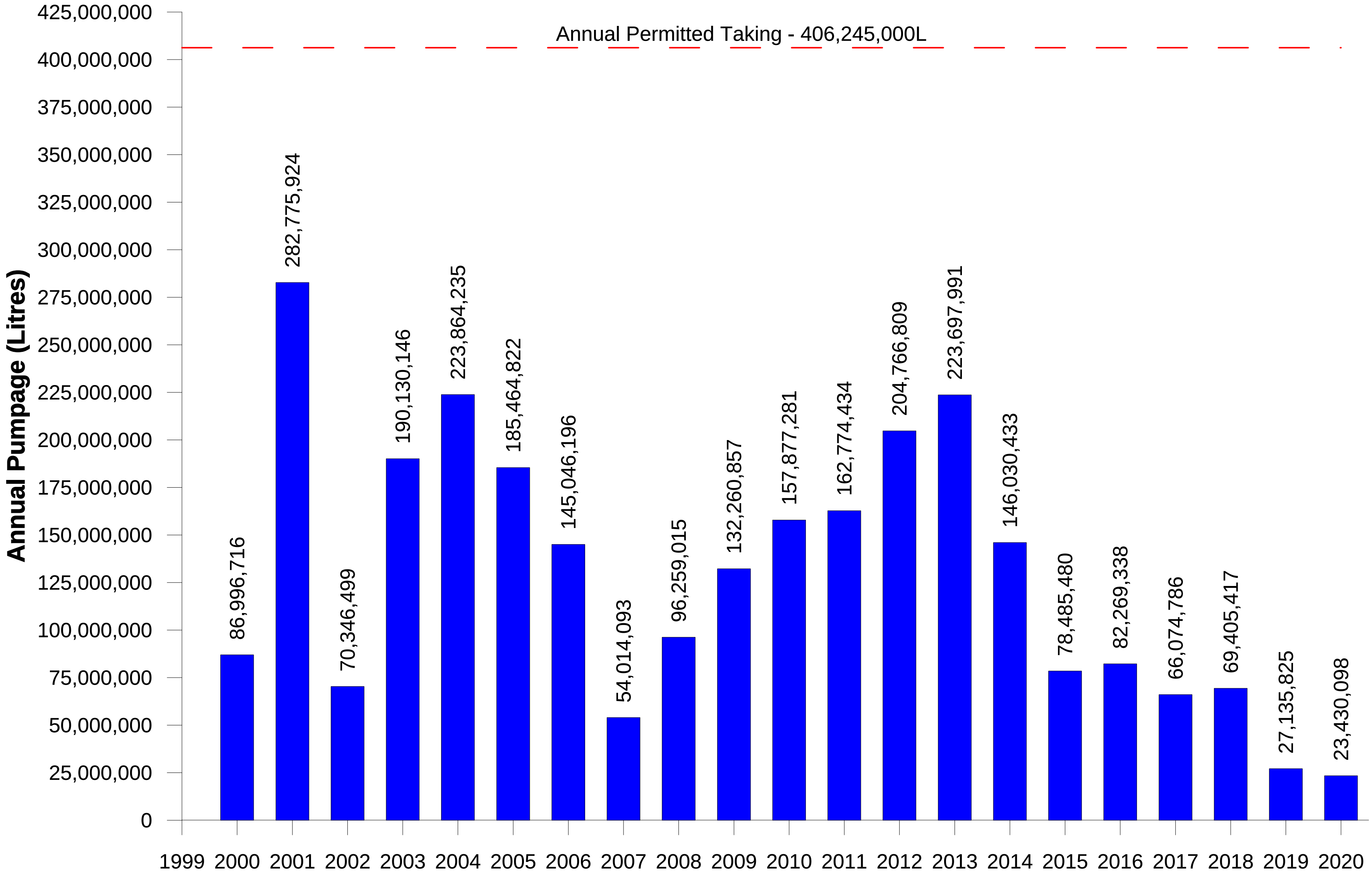
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Erin, Ontario

TITLE
HISTORICAL ANNUAL PRECIPITATION (2009 TO 2020)
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	3.6



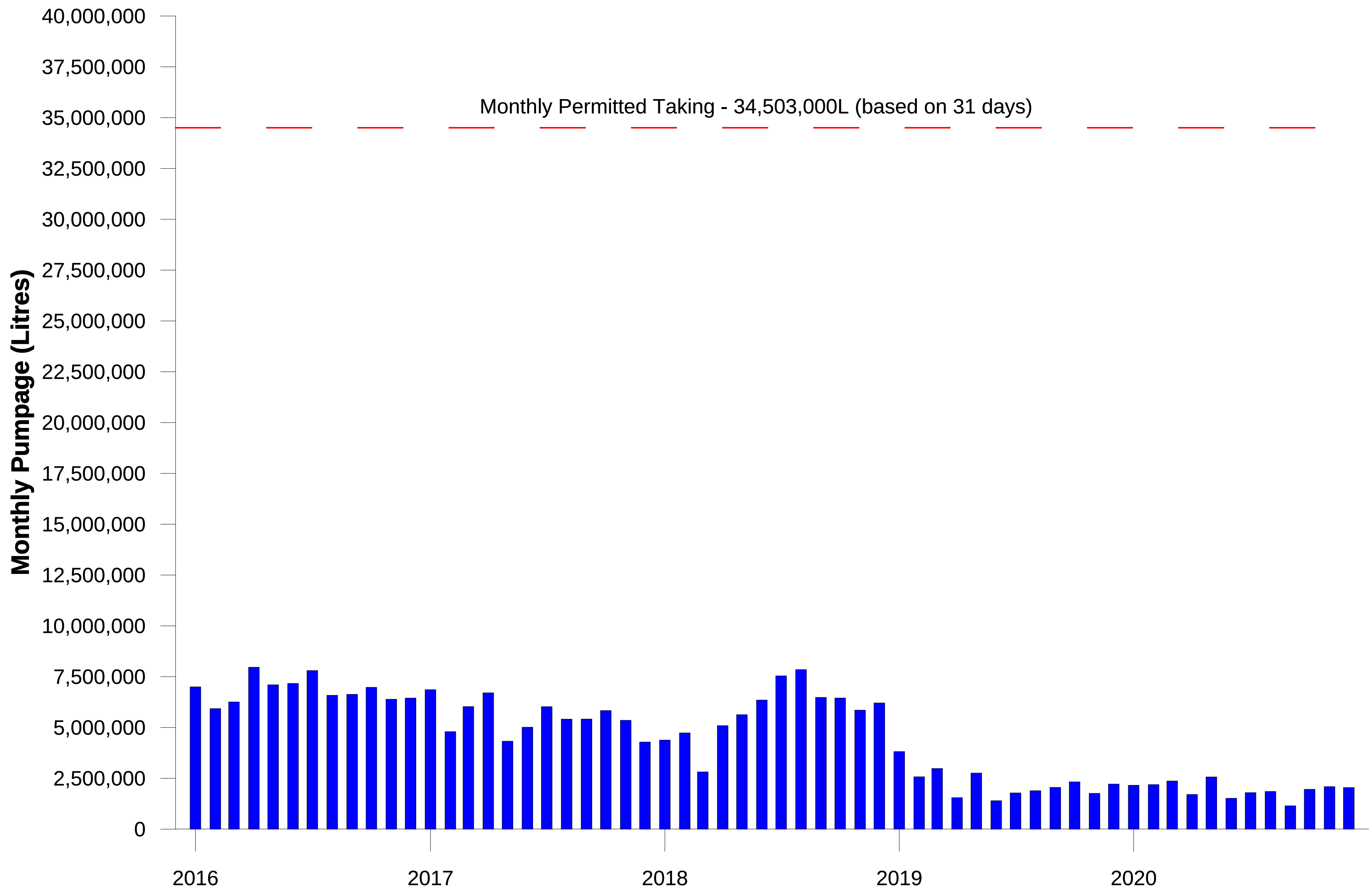
PROJECT
NESTLE WATERS CANADA
Erin, Ontario

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

TITLE
TW1-88 ANNUAL WATER TAKING (2000 TO 2020)
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	4.1



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Erin, Ontario

TITLE
TW1-88 MONTHLY WATER TAKING (2016 TO 2021)
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	4.2

LEGEND

- City/Town
- Production Well
- Monitoring Well (Bedrock)
- Private Well (Bedrock)
- 420.1 Water Elevation (August 21, 2020)
- Water Elevation Contour (masl)
- Railway
- Watercourse
- Wetland
- Provincially Significant Wetland
- Waterbody
- Municipal Boundary
- Property Boundary

0 200 400 600 800

1:10,000 Meters

REFERENCE(S)
BASE DATA - MNR LIO, OBTAINED 2015
PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM
ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2013
PROJECTION: UTM NAD83 ZONE 17
PROPERTY BOUNDARY FROM CRA FILE 13764-10(017)GN-WA002.DWG.

CLIENT
NESTLE WATERS CANADA

PROJECT
2020 ANNUAL REPORT

TITLE
POTENTIOMETRIC SURFACE OF BEDROCK AQUIFER (AUGUST 2020)

CONSULTANT

GOLDER

YYYY-MM-DD	2019-02-15
DESIGNED	JMC
PREPARED	PR
REVIEWED	GP
APPROVED	JAP

PROJECT NO.	CONTROL	REV.	FIGURE
20449101 (2000)	0016	1.0	4.3

APPENDIX A

Permit To Take Water Number 3716-8UZMCU

Ministry of the Environment
West-Central Region
Technical Support Section
12th Floor
119 King St W
Hamilton ON L8P 4Y7
Fax: (905)521-7820
Tel: (905) 521-7720

Ministère de l'Environnement
Direction régionale du Centre-Ouest
Secteur du Soutien Technique
12e étage
119 rue King W
Hamilton ON L8P 4Y7
Télécopieur: (905)521-7820
Tél:(905) 521-7720

Ontario

February 25, 2014

Nestle Canada Inc.
101 Brock Road S.
Puslinch, Ontario N1H 6H9

Attention: Ms. Andreanne Simard

Dear Ms. Simard:

RE: Amendments to monitoring program
Permit to Take Water 3716-8UZMCU
Reference Number 8420-8TAMGM

NOTICE

Pursuant to s. 100, Ontario Water Resources Act, R.S.O. 1990, c. O.40 as amended, I am issuing notice that, as Director of Section 34 of the Ontario Water Resources Act, I am exercising my discretion to amend Permit to Take Water 3716-8UZMCU part of condition 4.1. All other terms and conditions of Permit to Take Water 3716-8UZMCU shall continue in force.

Per condition 4.4, the Permit Holder notified the Director on July 25, 2013 of inaccuracies in condition 4.1 and certain monitoring locations becoming inaccessible or requiring replacement. The notification included suggested replacements. Further reasoning was provided by the Permit Holder on January 31, 2014. The delay in approving the amendment was due to other processes regarding the Permit. On February 24, 2014 Ms. Simard clarified the monitoring locations of condition 4.1(ii).

This Notice supersedes the Notice issued February 3, 2014. Condition 4.1 is hereby revoked and replaced as follows:

4.1 The Permit Holder shall establish the following monitoring program for the duration of the Permit:

Bedrock Wells

(i) Continuous monitoring of ground water levels at the following locations:

- TW1-88
- D2A
- D3 (MOE #6710228)
- MW5A
- MW6A
- D36B (MOE Tag#A001807)

(ii) Monthly monitoring of ground water levels at the following locations:

- D19 (MOE #6709207)
- MW11A/B-08
- D24B (MOE #6708146) and D24A (MOE #6711344)
- D26A (MOE #6700678) and D26B
- MW12A/B-08
- D8 (MOE#6708720)
- D15 (MOE#6709532)
- D32 (MOE#6708153)

Overburden Wells

(i) Continuous monitoring of ground water levels at the following locations:

- MW3A/B
- D2B
- MW5B
- MW6B
- D26C
- D36A
- D27

(ii) Monthly monitoring of ground water levels at the following locations:

- TW1-99 (MOE #6712960)
- D27 (MOE #6712147)
- D7B
- MW2

Piezometers

i) Continuous monitoring of water level and vertical hydraulic gradients at the following locations:

- P01A/B-07
- P03A/B-05
- P06A/B-07
- P10A/B-05
- P11A/B-05
- P12A/B-07
- P13A/B-07

Surface Water

(i) Continuous monitoring of surface water levels at the following locations:

- ST03-05
- SW1
- SW3
- SW4
- SW5
- SW7

(ii) Monthly monitoring of flow and development of appropriate stage-discharge curves at the following locations:

- SW1
- SW3
- SW7

This Notice now forms part of the current permit and must be attached to the original Permit to Take Water, if available. If the original is no longer available, this letter must be kept attached to a certified copy of the Permit to Take Water.

Any change in circumstances related to this permit should be reported promptly to a Director.

It is your responsibility to ensure that any person taking water under the authority of this permit is familiar with and complies with the terms and conditions.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, ***Environmental Bill of Rights****, R.S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the Ontario Water Resources Act, as amended provides that the Notice requiring a hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

The Secretary *Environmental Review Tribunal* *2300 Yonge Street, Suite 1700* *Toronto, Ontario M4P 1E4*	*AND*	*The Director, Section 34* *Ministry of the Environment* *12th Floor* *119 King St W* *Hamilton ON L8P 4Y7* *Fax: (905)521-7820*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600 ***by fax at (416) 314-4506*** ***by e-mail at www.ert.gov.on.ca***

Yours truly,

Carl Slater

Carl Slater
Director, Section 34, Ontario Water Resources Act
West Central Region

File Storage Number: AP28 ERNE

Ontario

Ministry of the Environment
Ministère de l'Environnement

PERMIT TO TAKE WATER
Ground Water
NUMBER 3716-8UZMCU

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

Nestle Canada Inc.
101 Brock Road S.
Puslinch, Ontario N1H 6H9

For the water taking from: One bedrock drilled well (TW1-88) MOE Well Tag No.: A095193

Located at: Lot 24, Concession 7, Geographic Township of Erin
Erin, County of Wellington

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

(a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.

(b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.

(c) "Ministry" means Ontario Ministry of the Environment.

(d) "District Office" means the Guelph District Office.

(e) "Permit" means this Permit to Take Water No. 3716-8UZMCU including its Schedules, if any, issued in accordance with Section 34 of the OWRA.

(f) "Permit Holder" means Nestle Canada Inc..

(g) "OWRA " means the *Ontario Water Resources Act,* R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated March 22, 2012 and signed by Don DeMarco, and all Schedules included in this Permit.

1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.

1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.

1.4 This Permit is not transferable to another person.

1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.

1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.

1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

2.2 Other Approvals
The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information
The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action
The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability
The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts
Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 **Expiry**
This Permit expires on **August 31, 2017**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted
The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	TW1-88	Well Drilled	Bottled Water	Commercial	773	24	1,113,000	365	17 568384 4847833
						Total Taking:	1,113,000		

3.3 Notwithstanding the Maximum Taken per Minute and Maximum Taken per Day specified in the Table A of Condition 3.2, the instantaneous rate and amount of taking may increase up to a maximum of 946 litres per minute (LPM) and 1,362,240 liters per day (LPD) in each month between April 1 and September 30 for the duration of the Permit in order to provide operational flexibility. However, the average daily taking in any month between April 1 and September 30 shall not exceed 1,113,000 (LPD).

3.4 Notwithstanding Conditions 3.2 and 3.3 the maximum daily water taking shall be reduced should the Grand River Low Water Response Team declare a Level 1 or Level 2 drought condition in the watershed in which the taking is located. The reductions shall be in accordance with the Ontario Low Water Response Protocol and ensure that the reduction is based on the maximum taken per day permitted in Table A.

3.5 Nothwithstanding Conditions 3.2, 3.3, and 3.4 should the Ontario Water Directors Committee declare a Level 3 drought condition in the watershed in which the taking is located, the maximum daily water taking shall be reduced in accordance with the Level 3 declaration.

4. Monitoring

4.1 The Permit Holder shall establish the following monitoring program for the duration of the Permit:

<u>Bedrock Wells</u>

(i) Continuous monitoring of ground water levels at the following locations:

- TW1-88
- D2A
- D3 (MOE #6710228)
- MW5A
- MW6A
- D36B (MOE Tag#A001807)

(ii) Monthly monitoring of ground water levels at the following locations:

- D19 (MOE #6709207)
- D24A (MOE #6711344)
- D24B (MOE #6708146)

- D26A (MOE #6700678)
- D26D
- D27
- MOE #6714441
- MOE # 6705153
- D7 (MOE#6708388)
- D8 (MOE#6708720)
- D12
- D32 (MOE#6708153)

<u>Overburden Wells</u>

(i) Continuous monitoring of ground water levels at the following locations:

- MW3A/B
- D2B
- MW5B
- MW6B
- D26C
- D36A

(ii) Monthly monitoring of ground water levels at the following locations:

- TW1-99 (MOE #6712960)
- D27 (MOE #6712147)
- new overburden well replacing D5
- MW2

<u>Piezometers</u>

i) Continuous monitoring of water level and vertical hydraulic gradients at the following locations:

- P01A/B-05
- P03A/B-07
- P06A/B-07
- P10A/B-05
- P11A/B-05
- P12A/B-07
- P13A/B-07

<u>Surface Water</u>

(i) Continuous monitoring of surface water levels at the following locations:

- ST03-05
- SW1
- SW3
- SW4
- SW5
- SW7

(ii) Monthly monitoring of flow and development of appropriate stage-discharge curves at the following locations:

- SW1
- SW3

- SW7

4.2 Continuous ground water monitoring shall be datalogged at 60 minute intervals and downloaded monthly; however, daily minimum water levels may be used to evaluate the water level variation with respect to pumping to improve the data handling and presentation. Monthly monitoring shall be conducted in the same week each calendar month for the duration of the Permit.

4.3 The water level data collected in piezometers or multilevel monitoring wells (two wells at one location or multiple wells in one borehole screened at different intervals) shall be plotted as gradient vs. time and interpreted to assess the potential impact of taking on vertical hydraulic gradients (upward/downward) and hydraulic connection of the ground water with the surface water, if any.

4.4 The Permit Holder shall identify to the Director in writing for his or her approval, within 15 days of any monthly monitoring event, any monitoring locations identified in Condition 4.1 which become inaccessible and/or abandoned along with a recommendation for replacement of these monitoring locations. Upon approval of the Director, the monitoring program shall be appropriately modified.

4.5 Under section 9 of O. Reg. 387/04, and as authorized by subsection 34(6) of the Ontario Water Resources Act, the Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit, or as otherwise accepted by the Director. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31st in every year, the records required by this condition to the ministry's Water Taking Reporting System.

4.6 The Permit Holder shall submit to the Director, an annual monitoring report which presents and interprets the monitoring data to be collected under the Terms and Conditions of this Permit. This report shall be prepared, signed and stamped by a licenced professional geoscientist or a licensed professional engineer specializing in hydrogeology who shall take responsibility for its accuracy. The report shall be submitted to the Director by April 30 of each calendar year or as supporting documentation to any application for renewal of this Permit, and include monitoring data for the 12 month period ending December 31 of the previous year.

4.7 In addition to the requirement of Condition 4.6, the Permit Holder shall provide a letter report to the Director and Town of Erin which includes pumped volumes and water level information within 30 days of the end of each month where the water taking is in accordance with Condition 3.3.

4.8 The Permit Holder shall include as part of the annual monitoring report required under Condition 4.6, the following information:

(i) Location and name of the facilities to which water is delivered in bulk containers greater than 20L from this source.
(ii) Whether or not the bulk water transported is containerized at the receiving location.
(iii) The size of the container(s) into which the water is transferred.
(iv) Total volume of the water transported in bulk in each calendar year to each remote facility.

4.9 The Permit Holder shall investigate any complaints received from the public or agency with regard to this water taking in accordance with the interference complaints resolution protocol and notify the District Manager, District Office within two (2) working days of receiving the complaint. Details of any complaints and its resolution shall be outlined to the Director in the annual monitoring report required under Condition 4.6.

5. Impacts of the Water Taking

5.1 Notification
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Groundwater Takings
If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

6. Director May Amend Permit
The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act* , Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.

2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.

3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the <u>Ontario Water Resources Act</u>, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, ***Environmental Bill of Rights****, R.S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the <u>Ontario Water Resources Act</u>, as amended provides that the Notice requiring a hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

The Secretary *Environmental Review Tribunal* *655 Bay Street, 15th Floor* *Toronto ON* *M5G 1E5* *Fax: (416) 314-4506* *Email:* *ERTTribunalsecretary@ontario.ca*	*<u>AND</u>*	*The Environmental Commissioner* *1075 Bay Street* *6th Floor, Suite 605* *Toronto, Ontario M5S 2W5*	*<u>AND</u>*	*The Director, Section 34* *Ministry of the Environment* *12th Floor* *119 King St W* *Hamilton ON L8P 4Y7* *Fax: (905)521-7820*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600 ***by fax at (416) 314-4506*** ***by e-mail at <u>www.ert.gov.on.ca</u>***

This instrument is subject to Section 38 of the ***Environmental Bill of Rights*** *that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.*

This Permit cancels and replaces Permit Number 6480-74BKR4, issued on 2007/08/24.

Dated at Hamilton this 28th day of September, 2012.

Carl Slater
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 3716-8UZMCU, dated September 28, 2012.

Ministry of the Environment
West Central Region

119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement
Direction regionale du Centre-Ouest

119 rue King ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél. : 905 521-7640
Téléc. : 905 521-7820

Ontario

April 28, 2014

Ms. Andreanne Simard
Natural Resource Manager
Nestlè Waters Canada
101 Brock Road South
Guelph, Ontario.
N1H 6H9

Dear Ms. Simard:

Re: Clarification of reporting requirements
Condition 4.7, Permit to Take Water 3716-8UZMCU

This is to clarify ministry expectations with respect the reporting requirements of Condition 4.7 of Permit to Take Water 3716-8UZMCU.

Condition 4.7 states:

"In addition to the requirement of Condition 4.6, the Permit Holder shall provide a letter report to the Director and Town of Erin which includes pumped volumes and water level information within 30 days of the end of each month where the water taking is in accordance with Condition 3.3."

For greater certainty the Letter Report is expected to include the following:

1. Pumped volumes are the total daily volume for each day in the month from the production well TW1-88.
2. Water Level information is the level data for the following locations:
    a. P01A/B-07 pond
    b. P12A/B-07 Roman Lake
    c. P13A/B-07 Erin Branch of the Credit
    d. P10A/B-05
3. No interpretation of the data is expected for the monthly report.
4. Data interpretation is expected in the annual report required by Condition 4.6.

I trust that you find this satisfactory. If you require further information or clarification, please contact Ms. Belinda Koblik at (905)521-7615 or at Belinda.Koblik@ontario.ca.

Yours truly,

Carl Slater

Carl Slater
Technical Support Manager, West Central Region
Director, Section 34, Ontario Water Resources Act.

C: Ms. B. Koblik/Mr. A. Quyum

Ministry of the Environment
and Climate Change
West Central Region

119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement
et de l'Action en matière de changement climatique
Direction régionale du Centre-Ouest

119 rue King Ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél. : 905 521-7640
Téléc. : 905 521-7820

Ontario

February 5, 2015

Nestle Canada Inc.
101 Brock Road S.
Puslinch, Ontario
N1H 6H9

Attention: Ms. Andreanne Simard

Dear Ms. Simard:

RE: Amendments to monitoring program and well sanitization conditions
Permit to Take Water 3716-8UZMCU

NOTICE

Pursuant to s. 100, Ontario Water Resources Act, R.S.O. 1990, c. O.40 as amended, I am issuing notice that, as Director of Section 34 of the Ontario Water Resources Act, I am exercising my discretion to amend Permit to Take Water 3716-8UZMCU condition 3.6 and part of condition 4.1. All other terms and conditions of Permit to Take Water 3716-8UZMCU shall continue in force.

An inaccuracy in the monitoring program listed in condition 4.1(ii) of a Notice issued February 25, 2014 was brought to the attention of the ministry in an email from Ms. Andreanne Simard, Natural Resources Manager dated May 29, 2014. In an email dated November 27, 2014, Ms. Simard, requested the sanitation Notice issued on January 20, 2014 be applicable for all years remaining on the permit.

This Notice supersedes the Notices issued on January 20, 2014 and February 25, 2014.

Condition 3.6 is hereby revoked and replaced as follows:

3.6 Notwithstanding Table A, the maximum pumping of water extracted from Source TW1-88 may be increased to 1040 litres per minute (275 U.S. gallons per minute) annually, or as needed, for the sole purpose of sanitization of the well. The maximum amount of water taken shall not exceed 1,113,000 litres/day.

Condition 4.1 is hereby revoked and replaced as follows:

4.1 The Permit Holder shall establish the following monitoring program for the duration of the Permit:

a. Bedrock Wells

(i) Continuous monitoring of ground water levels at the following locations:

- TW1-88
- D2A
- D3 (MOE #6710228)
- MW5A
- MW6A
- D36B (MOE Tag#A001807)

(ii) Monthly monitoring of ground water levels at the following locations:

- D19 (MOE #6709207)
- MW11A/B-08
- D24B (MOE #6708146) and D24A (MOE #6711344)
- D26A (MOE #6700678) and D26B
- MW12A/B-08
- D8 (MOE#6708720)
- D15 (MOE#6709532)
- D32 (MOE#6708153)

b. Overburden Wells

(i) Continuous monitoring of ground water levels at the following locations:

- MW3A/B
- D2B
- MW5B
- MW6B
- D26C
- D36A

(ii) Monthly monitoring of ground water levels at the following locations:

- TW1-99 (MOE #6712960)
- D27 (MOE #6712147)
- D7B
- MW2

c. Piezometers

(i) Continuous monitoring of water level and vertical hydraulic gradients at the following locations:

- P01A/B-07
- P03A/B-05
- P06A/B-07
- P10A/B-05
- P11A/B-05
- P12A/B-07
- P13A/B-07

d. <u>Surface Water</u>

(i) Continuous monitoring of surface water levels at the following locations:

- ST03-05
- SW1
- SW3
- SW4
- SW5
- SW7

(ii) Monthly monitoring of flow and development of appropriate stage-discharge curves at the following locations:

- SW1
- SW3
- SW7

This Notice now forms part of the current permit and must be attached to the original Permit to Take Water, if available. If the original is no longer available, this letter must be kept attached to a certified copy of the Permit to Take Water.

Any change in circumstances related to this permit should be reported promptly to a Director.

It is your responsibility to ensure that any person taking water under the authority of this permit is familiar with and complies with the terms and conditions.

In accordance with Section 100 of the <u>Ontario Water Resources Act</u>, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, ***Environmental Bill of Rights****, R.S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the <u>Ontario Water Resources Act</u>, as amended provides that the Notice requiring a hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

The Secretary *Environmental Review Tribunal* *2300 Yonge Street, Suite 1700* *Toronto, Ontario M4P 1E4*	*AND*	*The Director, Section 34* *Ministry of the Environment* *12th Floor* *119 King St W* *Hamilton ON L8P 4Y7* *Fax: (905)521-7820*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600 ***by fax at (416) 314-4506*** ***by e-mail at www.ert.gov.on.ca***

Yours truly,

Dan Dobrin
Director, Section 34, Ontario Water Resources Act
West Central Region

File Storage Number: AP28 ERNE

APPENDIX B

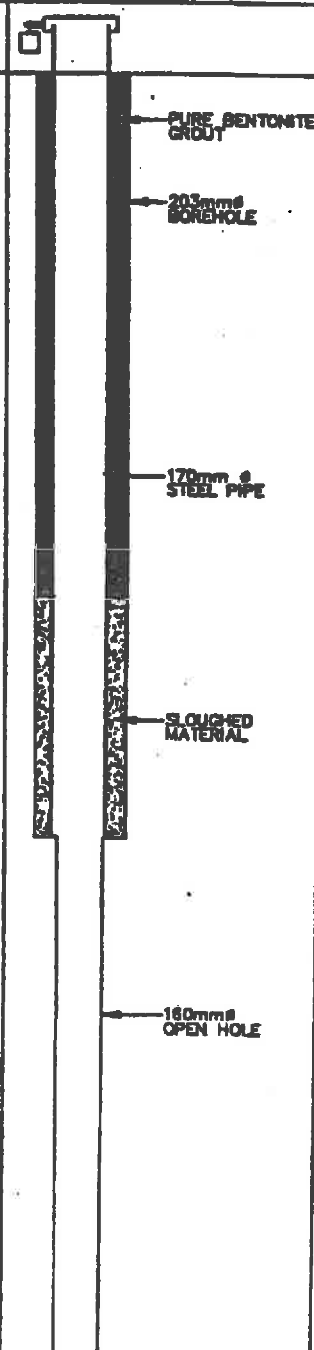
TW1-88 Borehole Log

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L–1)

PROJECT NAME:	HILLSBURGH	HOLE DESIGNATION:	TW1–88 (Page 1 of 2)
PROJECT NO.:	2603	DATE COMPLETED:	AUGUST 11, 1988
CLIENT:	IHOR PASHYNSKY	DRILLING METHOD:	WET/AIR ROTARY
LOCATION:	LOT 24, CONCESSION 7, ERIN TOWNSHIP	CRA SUPERVISOR:	S. CROSSMAN

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION m AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE
	GROUND SURFACE (Approximate)	430.0				
	TOPSOIL–sand, some silt, little gravel, compact, rootlets, humus material, brown, moist	429.5				
2.5	SM (SAND)–some silt, trace of fine gravel, compact, medium grained, poorly graded, brown, moist					
5.0						
7.5	GW (GRAVEL)–some sand, little silt, very dense, well graded, fine to coarse grained, grey–brown, water bearing	423.9				
10.0						
	SP (SAND)–trace silt, loose, uniform, medium grained, wet	419.3				
12.5	GW (GRAVEL)–some sand, little silt, dense, well graded, coarse to fine grained, water bearing	418.7				
	ML (TILL) SILT– some sand, some gravel, trace clay, stiff, low to non–plastic, light brown, wet	417.8				
15.0	CL (TILL) CLAY– some silt, little sand, little gravel, stiff, low plastic, grey–brown, moist	415.7				
17.5						
20.0	LST (LIMESTONE) BEDROCK– soft, friable, fractured, light grey – becomes sound, less fractured, hard	410.5				
22.5						
25.0	– Fracture (152mm dia); brown water in return air with lumps of brown silty clay, fracture infilled; water becomes light grey immediately after passing fracture					
27.5	– Fracture (20mm dia.), no change in water colour					
30.0	– light grey, fracture					
32.5						



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

GRAIN SIZE ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-1)

PROJECT NAME: HILLSBURGH
PROJECT NO.: 2603
CLIENT: IHOR PASHYNSKY
LOCATION: LOT 24, CONCESSION 7, ERIN TOWNSHIP

HOLE DESIGNATION: TW1-88 (Page 2 of 2)
DATE COMPLETED: AUGUST 11, 1988
DRILLING METHOD: WET/AIR ROTARY
CRA SUPERVISOR: S. CROSSMAN

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION m AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE
	LST (LIMESTONE) BEDROCK– hard, sound, some fracturing, massive, grey					
35.0			150mm OPEN HOLE			
37.5						
40.0						
42.5						
45.0						
	Dolostone, dark grey to black	383.4				
47.5	– fracture, clay filled 100 to 150mm, brown					
50.0						
52.5	– fracture 100 to 150mm, clay filled					
55.0	– fracture 100 to 200mm, unfilled					
57.5	– sound, unfractured, crystalline, basal to concoidal fracture, grey.	372.7				
	END OF HOLE @ 57.30m BGS.					
60.0	NOTE: 1. Casing set to 20.88m BGS and grouted into bedrock using a pure bentonite grout. 2. All elevations are approximate.					
62.5						
65.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

GRAIN SIZE ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

Ontario Ministry of the Environment

Well Tag No. (Place Sticker and/or Print Below) A095193 A095193

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Measurements recorded in: ☐ Metric ☑ Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	NESTLE WATERS CANADA		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
101 BROCK ROAD	GUELPH	ON	N1H6H9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
STATION STREET	ERIN	24	7

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

UTM Coordinates Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83 17	558362	4847825		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
BROWN	SAND	SILT GRAVEL		0	31
BROWN	GRAVEL		COARSE	31	39
GREY	CLAY TILL	SAND, COBBLES		39	63
LT GREY	LIMESTONE		SOFT	63	83
BROWN	LIMESTONE		HARD	83	103
DK GREY	LIMESTONE			103	128
			ORIGINAL WELL DRILLED 08/11/68		
			ORIGINAL CASING OVERDRILLED &		
			REPLACED		

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	12	SAND CEMENT	
12	71.5	NEAT CEMENT PRESSURE GROUT	

Results of Well Yield Testing

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

If pumping discontinued, give reason: AIRLIFT REDEVELOP

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping hrs + min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

Well production (l/min / GPM) 150+

Disinfected? ☐ Yes N ☐ No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level	36		
1	NA	1	NA
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Method of Construction

☐ Cable Tool ☐ Diamond
R ☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public C ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
8	STAINLESS 304	.322	+3	71.5

Construction Record - Screen

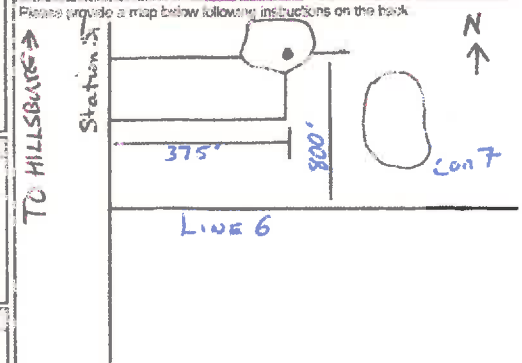
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

W ☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

Map of Well Location

Please provide a map below following instructions on the back



Water Details

Water found at Depth (m/ft)	Kind of Water
63	F ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify
81	F ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify
103	F ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	71.5	14.5
71.5	128	6.25

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Durl Hopper Ltd.	2844

Business Address (Street Number/Name)	Municipality
RR#7	St. Marys

Province	Postal Code	Business E-mail Address
Ont	N4X1C9	hopper@cyg.net

Bus. Telephone No. (inc. area code) 5192717860 Name of Well Technician (Last Name, First Name) HOPPER, SHAWN

Well Technician's Licence No. 2315 Signature of Technician and/or Contractor Date Submitted 12/8/2010

Comments

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☑ No	NA	Audit No. z115126
	Date Work Completed 11/22/2010	Received

0506E (2007/12) © Queen's Printer for Ontario, 2007

Ministry's Copy

APPENDIX C

TW1-88 Water Taking

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Jan-20	19,750	14	74,762	53
2-Jan-20	9,940	7	37,627	26
3-Jan-20	19,750	14	74,762	52
4-Jan-20	0	0	0	0
5-Jan-20	19,790	14	74,913	53
6-Jan-20	0	0	0	0
7-Jan-20	19,870	14	75,216	53
8-Jan-20	19,790	14	74,913	52
9-Jan-20	27,160	20	102,812	75
10-Jan-20	15,800	11	59,809	42
11-Jan-20	30,500	21	115,455	78
12-Jan-20	10,500	7	39,747	28
13-Jan-20	21,030	15	79,607	56
14-Jan-20	31,520	22	119,316	83
15-Jan-20	21,040	15	79,645	56
16-Jan-20	0	0	0	0
17-Jan-20	19,810	14	74,989	53
18-Jan-20	30,320	21	114,774	80
19-Jan-20	0	0	0	0
20-Jan-20	10,500	7	39,747	28
21-Jan-20	31,540	22	119,392	84
22-Jan-20	15,490	18	58,636	70
23-Jan-20	20,800	15	78,737	56
24-Jan-20	12,530	9	47,431	33
25-Jan-20	24,230	17	91,720	65
26-Jan-20	27,400	18	103,720	70
27-Jan-20	10,520	7	39,823	28
28-Jan-20	21,100	15	79,872	56
29-Jan-20	31,600	22	119,619	84
30-Jan-20	21,050	15	79,683	56
31-Jan-20	27,550	20	104,288	77

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	**Volume** (US gpd)	**Average Flow Rate Over Time Taken** (US gpm)	**Volume** (L/day)	**Average Flow Rate Over Time Taken** (L/min)
1-Feb-20	25,380	18	96,074	68
2-Feb-20	20,460	14	77,449	51
3-Feb-20	0	0	0	0
4-Feb-20	19,800	14	74,951	52
5-Feb-20	19,800	14	74,951	52
6-Feb-20	19,830	14	75,065	53
7-Feb-20	19,820	14	75,027	53
8-Feb-20	0	0	0	0
9-Feb-20	19,850	14	75,140	53
10-Feb-20	19,880	14	75,254	53
11-Feb-20	10,580	7	40,050	28
12-Feb-20	10,500	7	39,747	28
13-Feb-20	21,030	15	79,607	56
14-Feb-20	21,040	15	79,645	56
15-Feb-20	21,040	15	79,645	56
16-Feb-20	10,520	7	39,823	28
17-Feb-20	19,850	14	75,140	53
18-Feb-20	21,040	15	79,645	56
19-Feb-20	33,430	24	126,546	92
20-Feb-20	38,780	27	146,798	103
21-Feb-20	27,850	19	105,424	74
22-Feb-20	36,810	25	139,341	95
23-Feb-20	21,050	15	79,683	56
24-Feb-20	19,820	14	75,027	53
25-Feb-20	0	0	0	0
26-Feb-20	19,880	14	75,254	53
27-Feb-20	7,540	5	28,542	20
28-Feb-20	34,850	25	131,922	95
29-Feb-20	38,690	26	146,458	100

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Mar-20	21,050	15	79,683	55
2-Mar-20	31,570	22	119,505	83
3-Mar-20	21,040	15	79,645	56
4-Mar-20	0	0	0	0
5-Mar-20	24,090	18	91,191	67
6-Mar-20	25,010	18	94,673	67
7-Mar-20	16,870	12	63,860	47
8-Mar-20	22,910	16	86,724	61
9-Mar-20	26,700	18	101,070	67
10-Mar-20	25,580	19	96,831	71
11-Mar-20	27,160	19	102,812	72
12-Mar-20	17,970	13	68,024	48
13-Mar-20	16,130	11	61,059	43
14-Mar-20	23,770	17	89,979	64
15-Mar-20	15,090	10	57,122	37
16-Mar-20	21,030	15	79,607	56
17-Mar-20	21,020	15	79,569	56
18-Mar-20	21,060	16	79,721	59
19-Mar-20	23,900	17	90,471	63
20-Mar-20	10,570	7	40,012	28
21-Mar-20	17,880	12	67,683	44
22-Mar-20	25,730	19	97,399	73
23-Mar-20	16,210	11	61,361	40
24-Mar-20	34,700	25	131,354	95
25-Mar-20	23,990	16	90,812	61
26-Mar-20	18,460	15	69,879	56
27-Mar-20	18,540	13	70,182	50
28-Mar-20	25,900	17	98,042	66
29-Mar-20	10,550	7	39,936	28
30-Mar-20	0	0	0	0
31-Mar-20	21,480	16	81,311	60

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Apr-20	28,590	20	108,225	76
2-Apr-20	18,980	13	71,847	51
3-Apr-20	23,800	16	90,093	61
4-Apr-20	31,570	22	119,505	83
5-Apr-20	10,520	7	39,823	28
6-Apr-20	0	0	0	0
7-Apr-20	0	0	0	0
8-Apr-20	30,990	22	117,310	82
9-Apr-20	2,560	3	9,691	10
10-Apr-20	24,080	17	91,153	64
11-Apr-20	20,570	15	77,866	55
12-Apr-20	29,980	21	113,487	80
13-Apr-20	17,060	11	64,579	42
14-Apr-20	30,900	22	116,969	83
15-Apr-20	21,450	15	81,197	56
16-Apr-20	10,520	7	39,823	28
17-Apr-20	10,010	7	37,892	27
18-Apr-20	0	0	0	0
19-Apr-20	0	0	0	0
20-Apr-20	3,420	2	12,946	9
21-Apr-20	10,510	7	39,785	28
22-Apr-20	31,050	22	117,537	84
23-Apr-20	14,090	10	53,336	40
24-Apr-20	17,670	12	66,888	44
25-Apr-20	10,530	7	39,860	28
26-Apr-20	16,620	12	62,914	47
27-Apr-20	14,750	10	55,835	36
28-Apr-20	0	0	0	0
29-Apr-20	21,150	15	80,061	56
30-Apr-20	0	0	0	0

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-May-20	19,810	14	74,989	53
2-May-20	0	0	0	0
3-May-20	0	0	0	0
4-May-20	30,420	21	115,152	81
5-May-20	39,460	28	149,372	107
6-May-20	23,510	16	88,995	59
7-May-20	21,020	15	79,569	56
8-May-20	26,460	20	100,162	74
9-May-20	22,250	16	84,225	59
10-May-20	24,710	17	93,537	63
11-May-20	10,700	7	40,504	28
12-May-20	52,680	37	199,415	139
13-May-20	49,430	36	187,113	135
14-May-20	24,090	16	91,191	61
15-May-20	31,540	22	119,392	83
16-May-20	31,550	22	119,430	83
17-May-20	19,820	14	75,027	53
18-May-20	10,510	7	39,785	28
19-May-20	0	0	0	0
20-May-20	21,050	15	79,683	56
21-May-20	36,350	26	137,600	100
22-May-20	33,240	23	125,827	88
23-May-20	30,610	22	115,871	82
24-May-20	33,810	24	127,985	90
25-May-20	12,900	8	48,832	31
26-May-20	21,070	15	79,759	56
27-May-20	14,050	11	53,185	40
28-May-20	16,830	11	63,708	42
29-May-20	10,490	7	39,709	28
30-May-20	0	0	0	0
31-May-20	10,500	7	39,747	28

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	**Volume** (US gpd)	**Average Flow Rate Over Time Taken** (US gpm)	**Volume** (L/day)	**Average Flow Rate Over Time Taken** (L/min)
1-Jun-20	0	0	0	0
2-Jun-20	19,790	14	74,913	53
3-Jun-20	19,830	14	75,065	53
4-Jun-20	0	0	0	0
5-Jun-20	19,810	14	74,989	53
6-Jun-20	0	0	0	0
7-Jun-20	19,820	14	75,027	53
8-Jun-20	0	0	0	0
9-Jun-20	10,960	8	41,488	32
10-Jun-20	30,530	21	115,569	78
11-Jun-20	10,500	7	39,747	28
12-Jun-20	10,500	7	39,747	28
13-Jun-20	25,880	19	97,966	72
14-Jun-20	16,140	10	61,097	40
15-Jun-20	27,740	20	105,007	77
16-Jun-20	26,830	19	101,563	71
17-Jun-20	7,750	5	29,337	18
18-Jun-20	20,810	15	78,774	56
19-Jun-20	19,290	14	73,021	54
20-Jun-20	12,230	8	46,296	29
21-Jun-20	10,520	7	39,823	28
22-Jun-20	980	1	3,710	4
23-Jun-20	19,470	13	73,702	49
24-Jun-20	0	0	0	0
25-Jun-20	19,810	14	74,989	52
26-Jun-20	0	0	0	0
27-Jun-20	19,800	14	74,951	53
28-Jun-20	0	0	0	0
29-Jun-20	21,530	16	81,500	61
30-Jun-20	10,940	8	41,412	30

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Jul-20	19,880	13	75,254	50
2-Jul-20	10,530	7	39,860	28
3-Jul-20	10,500	7	39,747	28
4-Jul-20	10,510	8	39,785	31
5-Jul-20	10,520	7	39,823	25
6-Jul-20	16,980	13	64,276	48
7-Jul-20	24,720	17	93,575	66
8-Jul-20	25,120	18	95,089	67
9-Jul-20	20,830	15	78,850	56
10-Jul-20	15,900	10	60,188	39
11-Jul-20	10,540	7	39,898	28
12-Jul-20	10,500	7	39,747	28
13-Jul-20	0	0	0	0
14-Jul-20	0	0	0	0
15-Jul-20	19,810	14	74,989	53
16-Jul-20	19,800	14	74,951	53
17-Jul-20	10,520	7	39,823	28
18-Jul-20	19,810	14	74,989	53
19-Jul-20	0	0	0	0
20-Jul-20	16,440	12	62,232	47
21-Jul-20	23,300	16	88,200	62
22-Jul-20	12,650	25	47,885	95
23-Jul-20	25,570	19	96,793	71
24-Jul-20	16,400	11	62,081	40
25-Jul-20	13,520	10	51,179	39
26-Jul-20	17,950	13	67,948	48
27-Jul-20	10,530	7	39,860	25
28-Jul-20	34,160	25	129,310	94
29-Jul-20	17,030	11	64,466	42
30-Jul-20	17,850	13	67,570	51
31-Jul-20	13,550	9	51,292	33

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Aug-20	21,040	15	79,645	56
2-Aug-20	21,010	15	79,531	56
3-Aug-20	10,510	7	39,785	28
4-Aug-20	26,170	19	99,064	73
5-Aug-20	25,160	17	95,241	64
6-Aug-20	20,550	15	77,790	56
7-Aug-20	18,150	13	68,705	51
8-Aug-20	24,280	16	91,910	62
9-Aug-20	10,510	7	39,785	28
10-Aug-20	0	0	0	0
11-Aug-20	9,960	7	37,703	26
12-Aug-20	19,800	14	74,951	53
13-Aug-20	0	0	0	0
14-Aug-20	19,820	14	75,027	52
15-Aug-20	0	0	0	0
16-Aug-20	19,820	14	75,027	52
17-Aug-20	12,110	8	45,841	32
18-Aug-20	29,930	21	113,297	79
19-Aug-20	10,520	7	39,823	28
20-Aug-20	31,540	22	119,392	83
21-Aug-20	0	0	0	0
22-Aug-20	19,810	14	74,989	52
23-Aug-20	0	0	0	0
24-Aug-20	19,830	14	75,065	53
25-Aug-20	0	0	0	0
26-Aug-20	30,970	22	117,234	82
27-Aug-20	25,600	18	96,906	68
28-Aug-20	14,870	11	56,289	43
29-Aug-20	19,530	14	73,929	52
30-Aug-20	7,530	4	28,504	17
31-Aug-20	21,110	15	79,910	56

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Sep-20	10,510	7	39,785	28
2-Sep-20	30,470	21	115,341	81
3-Sep-20	0	0	0	0
4-Sep-20	19,810	14	74,989	53
5-Sep-20	0	0	0	0
6-Sep-20	19,820	14	75,027	52
7-Sep-20	0	0	0	0
8-Sep-20	19,810	14	74,989	53
9-Sep-20	0	0	0	0
10-Sep-20	9,940	7	37,627	26
11-Sep-20	0	0	0	0
12-Sep-20	19,790	14	74,913	53
13-Sep-20	0	0	0	0
14-Sep-20	21,020	15	79,569	55
15-Sep-20	13,960	10	52,844	37
16-Sep-20	0	0	0	0
17-Sep-20	19,860	14	75,178	53
18-Sep-20	0	0	0	0
19-Sep-20	19,800	14	74,951	52
20-Sep-20	0	0	0	0
21-Sep-20	0	0	0	0
22-Sep-20	19,810	14	74,989	53
23-Sep-20	19,800	14	74,951	53
24-Sep-20	0	0	0	0
25-Sep-20	19,920	14	75,405	53
26-Sep-20	0	0	0	0
27-Sep-20	19,810	14	74,989	52
28-Sep-20	0	0	0	0
29-Sep-20	0	0	0	0
30-Sep-20	19,820	14	75,027	53

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Oct-20	19,800	14	74,951	53
2-Oct-20	0	0	0	0
3-Oct-20	19,800	14	74,951	53
4-Oct-20	0	0	0	0
5-Oct-20	0	0	0	0
6-Oct-20	19,800	14	74,951	53
7-Oct-20	10,520	7	39,823	28
8-Oct-20	8,380	7	31,722	25
9-Oct-20	23,100	15	87,443	59
10-Oct-20	24,520	18	92,818	69
11-Oct-20	17,490	12	66,207	44
12-Oct-20	10,530	8	39,860	31
13-Oct-20	45,590	32	172,577	121
14-Oct-20	20,330	14	76,957	54
15-Oct-20	17,360	12	65,715	45
16-Oct-20	10,610	8	40,163	29
17-Oct-20	26,000	18	98,421	69
18-Oct-20	15,870	10	60,074	39
19-Oct-20	31,580	22	119,543	84
20-Oct-20	10,530	7	39,860	28
21-Oct-20	42,180	29	159,669	112
22-Oct-20	21,040	15	79,645	56
23-Oct-20	24,660	18	93,348	68
24-Oct-20	27,790	19	105,197	71
25-Oct-20	21,040	15	79,645	56
26-Oct-20	9,930	7	37,589	26
27-Oct-20	19,810	14	74,989	53
28-Oct-20	0	0	0	0
29-Oct-20	19,810	14	74,989	53
30-Oct-20	0	0	0	0
31-Oct-20	0	0	0	0

TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Nov-20	6,690	5	25,324	18
2-Nov-20	44,460	31	168,299	118
3-Nov-20	27,780	15	105,159	55
4-Nov-20	41,520	29	157,170	110
5-Nov-20	21,060	16	79,721	59
6-Nov-20	29,800	21	112,805	81
7-Nov-20	28,290	22	107,089	83
8-Nov-20	25,950	15	98,231	56
9-Nov-20	10,020	7	37,930	27
10-Nov-20	18,490	14	69,992	54
11-Nov-20	32,550	22	123,215	83
12-Nov-20	21,850	15	82,711	56
13-Nov-20	29,930	22	113,297	84
14-Nov-20	28,620	22	108,338	83
15-Nov-20	25,410	20	96,187	76
16-Nov-20	35,980	20	136,199	76
17-Nov-20	10,500	9	39,747	33
18-Nov-20	10,520	7	39,823	28
19-Nov-20	0	0	0	0
20-Nov-20	19,810	14	74,989	53
21-Nov-20	0	0	0	0
22-Nov-20	19,780	14	74,875	52
23-Nov-20	0	0	0	0
24-Nov-20	19,810	14	74,989	53
25-Nov-20	0	0	0	0
26-Nov-20	19,790	14	74,913	52
27-Nov-20	0	0	0	0
28-Nov-20	0	0	0	0
29-Nov-20	0	0	0	0
30-Nov-20	24,550	18	92,932	68

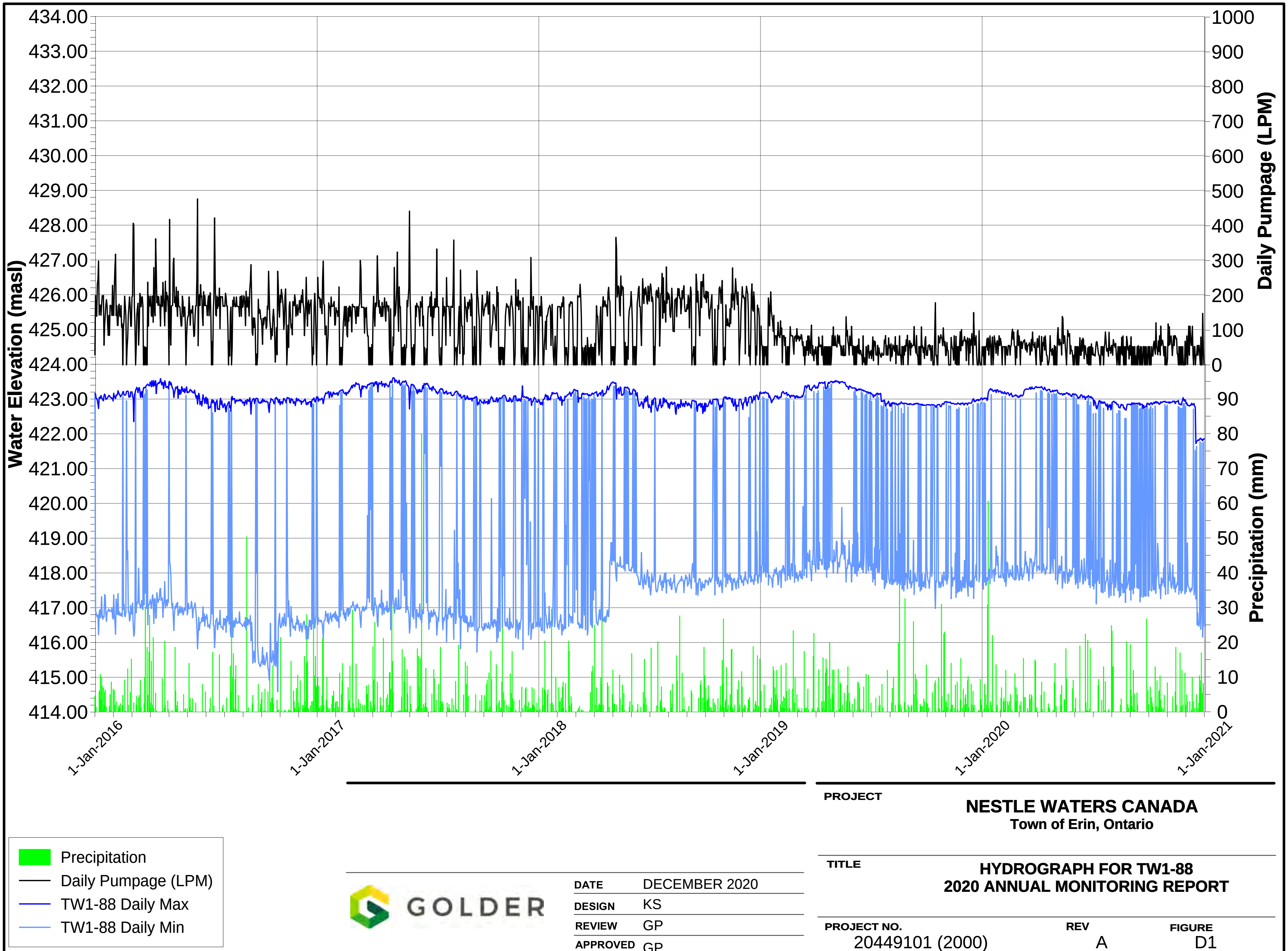
TABLE C1
TW1-88 DAILY WATER TAKING
NESTLE WATERS CANADA
ERIN, ONTARIO

Day	Volume (US gpd)	Average Flow Rate Over Time Taken (US gpm)	Volume (L/day)	Average Flow Rate Over Time Taken (L/min)
1-Dec-20	0	0	0	0
2-Dec-20	19,780	14	74,875	53
3-Dec-20	30,110	22	113,979	83
4-Dec-20	1,310	0	4,959	1
5-Dec-20	21,040	15	79,645	56
6-Dec-20	42,100	29	159,366	112
7-Dec-20	10,520	7	39,823	28
8-Dec-20	42,070	29	159,252	111
9-Dec-20	30,250	22	114,509	84
10-Dec-20	22,300	15	84,415	57
11-Dec-20	21,050	15	79,683	56
12-Dec-20	42,080	29	159,290	111
13-Dec-20	10,520	7	39,823	28
14-Dec-20	0	0	0	0
15-Dec-20	19,790	14	74,913	53
16-Dec-20	19,740	14	74,724	53
17-Dec-20	0	0	0	0
18-Dec-20	10,550	7	39,936	28
19-Dec-20	10,550	7	39,936	28
20-Dec-20	21,040	15	79,645	56
21-Dec-20	10,530	7	39,860	28
22-Dec-20	21,040	15	79,645	56
23-Dec-20	21,030	15	79,607	56
24-Dec-20	10,520	8	39,823	29
25-Dec-20	0	0	0	0
26-Dec-20	30,280	21	114,622	80
27-Dec-20	0	0	0	0
28-Dec-20	0	0	0	0
29-Dec-20	54,650	39	206,873	148
30-Dec-20	18,350	12	69,462	46
31-Dec-20	0	0	0	0

Notes:
1. All volumes measured with a flow meter and recorded on a datalogger.

APPENDIX D

Groundwater Level Monitoring



GOLDER

DATE	DECEMBER 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

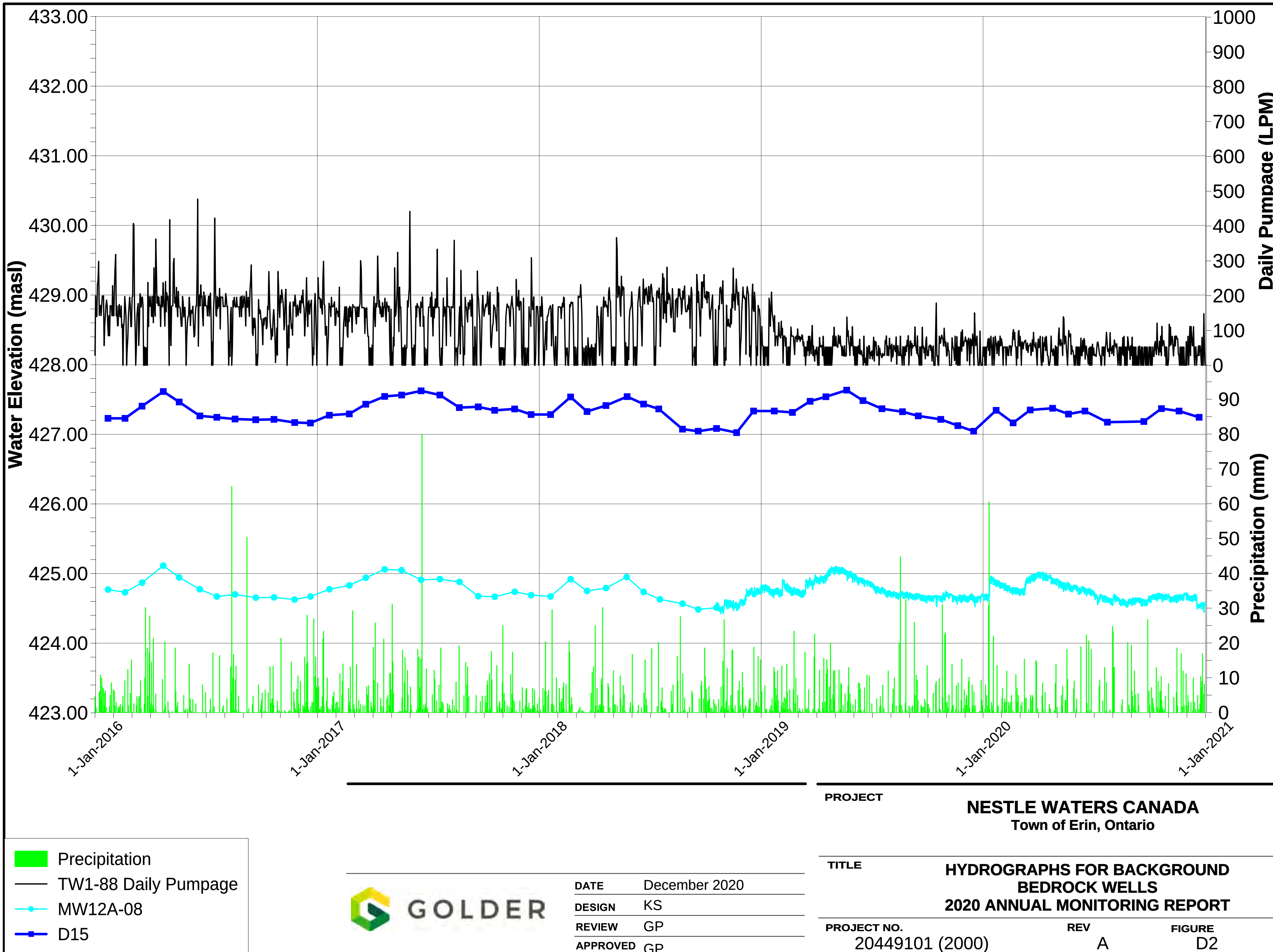
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR TW1-88
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D1



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR BACKGROUND BEDROCK WELLS
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
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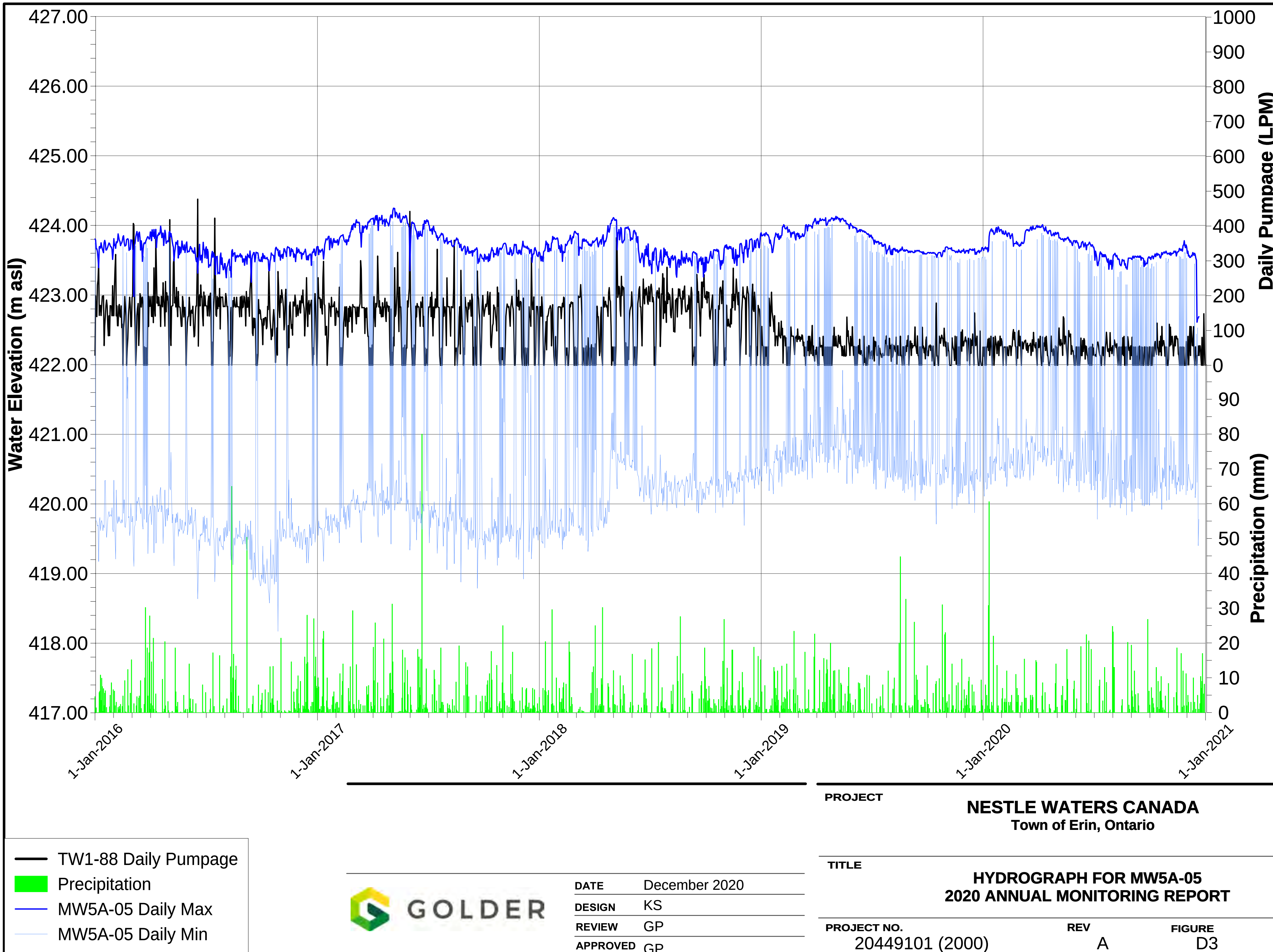

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR MW5A-05
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
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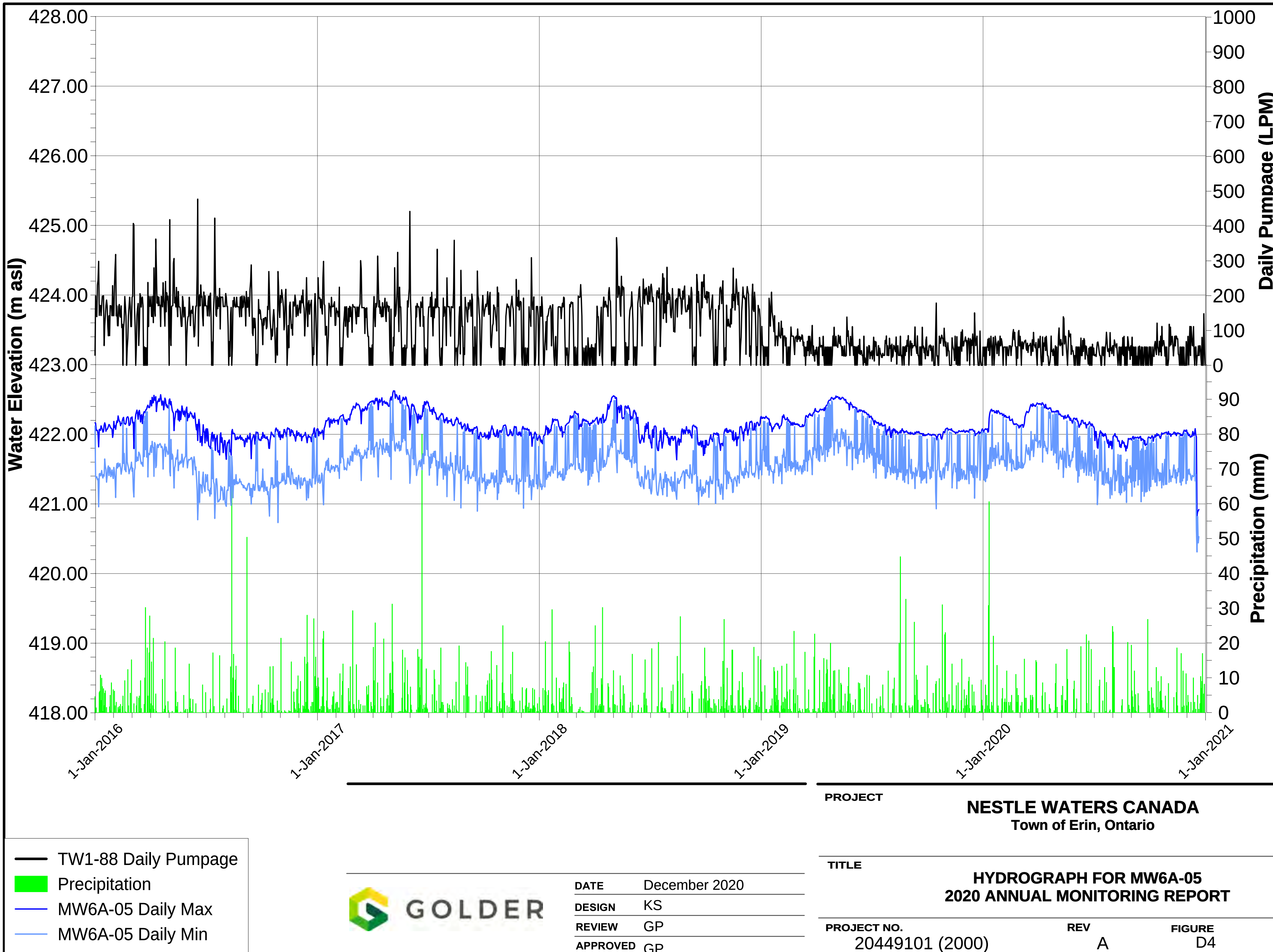

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR MW6A-05
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
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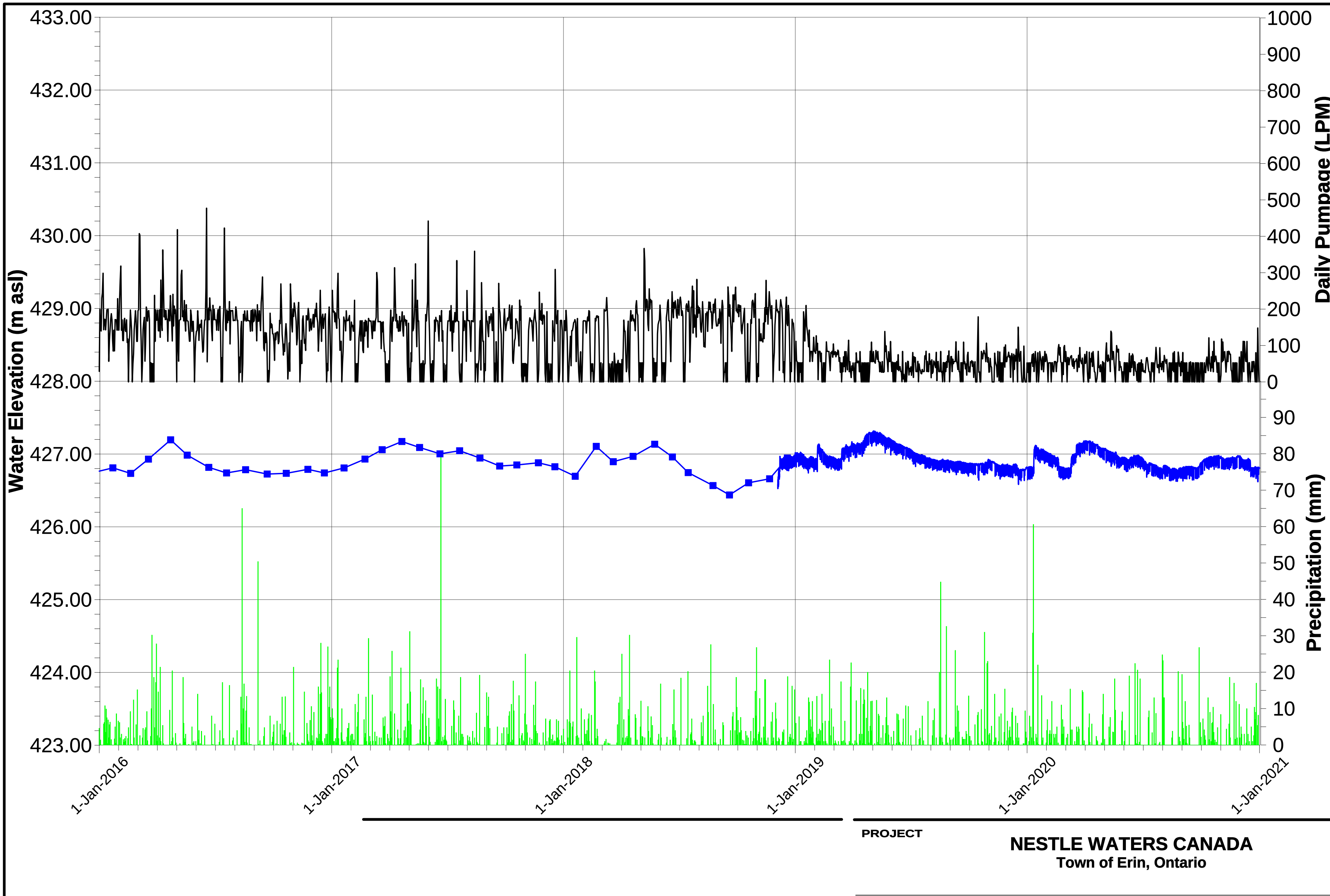


GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

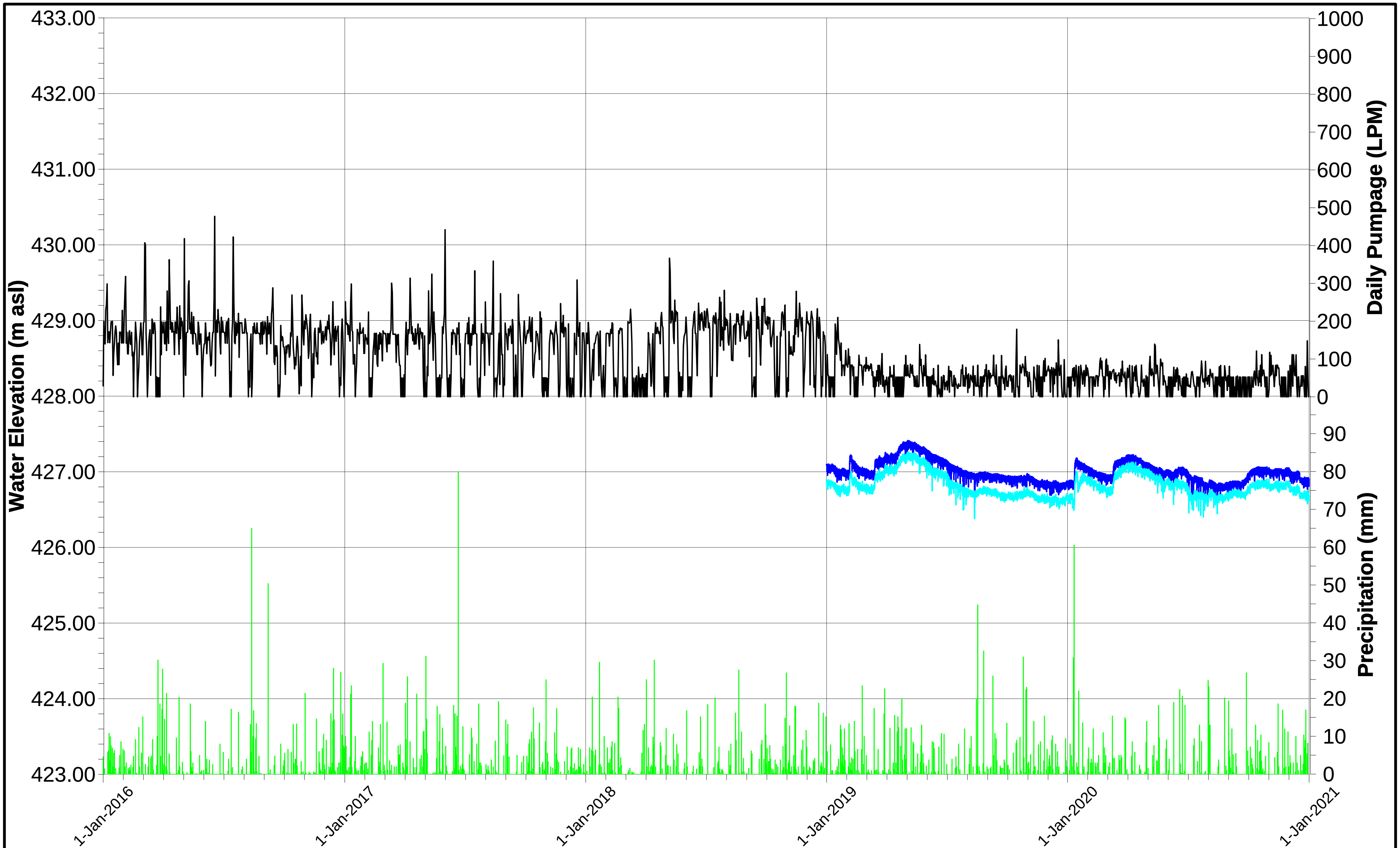
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR MW11A-08
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D5



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

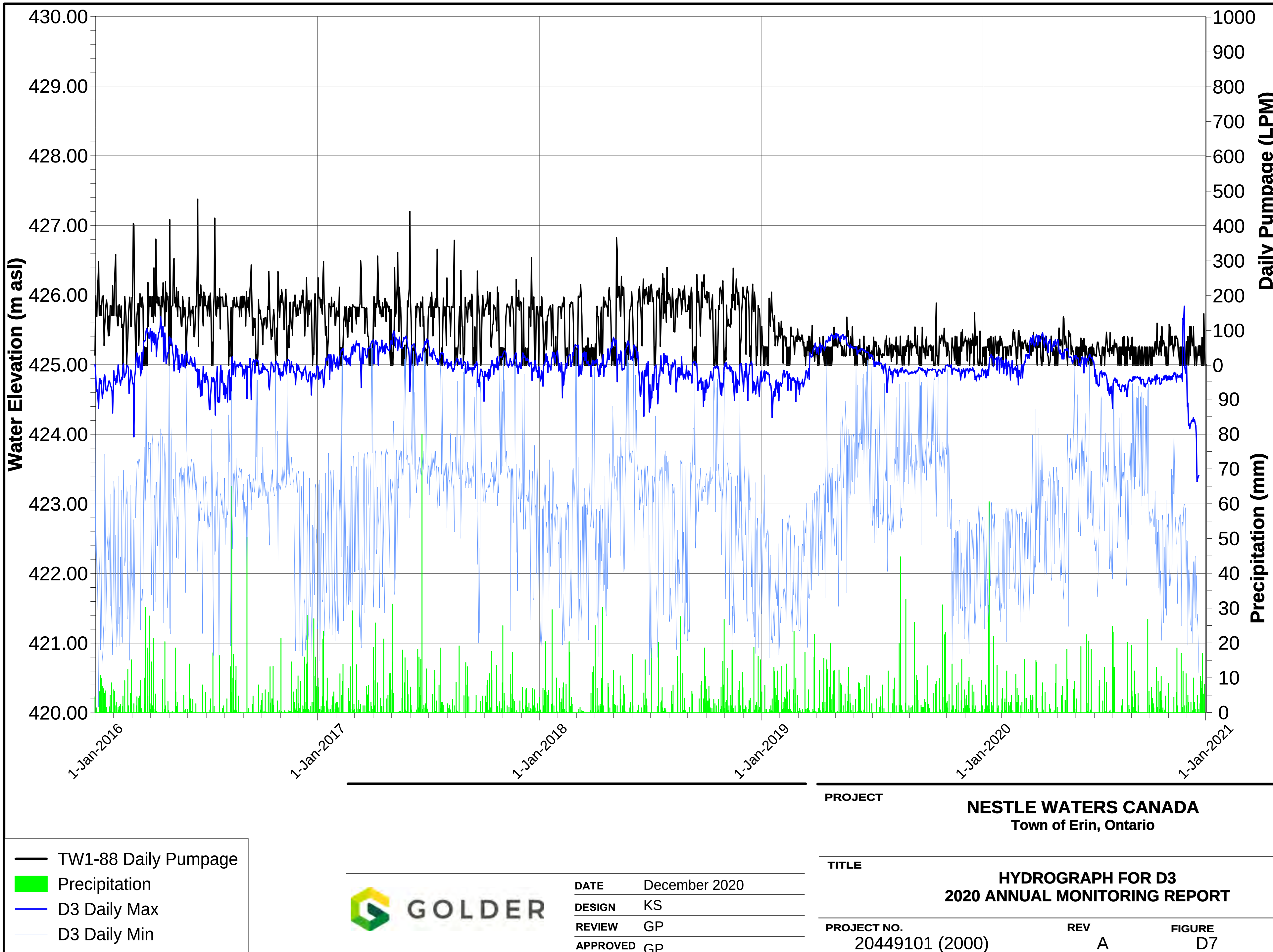
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR MW01-18
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D6



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

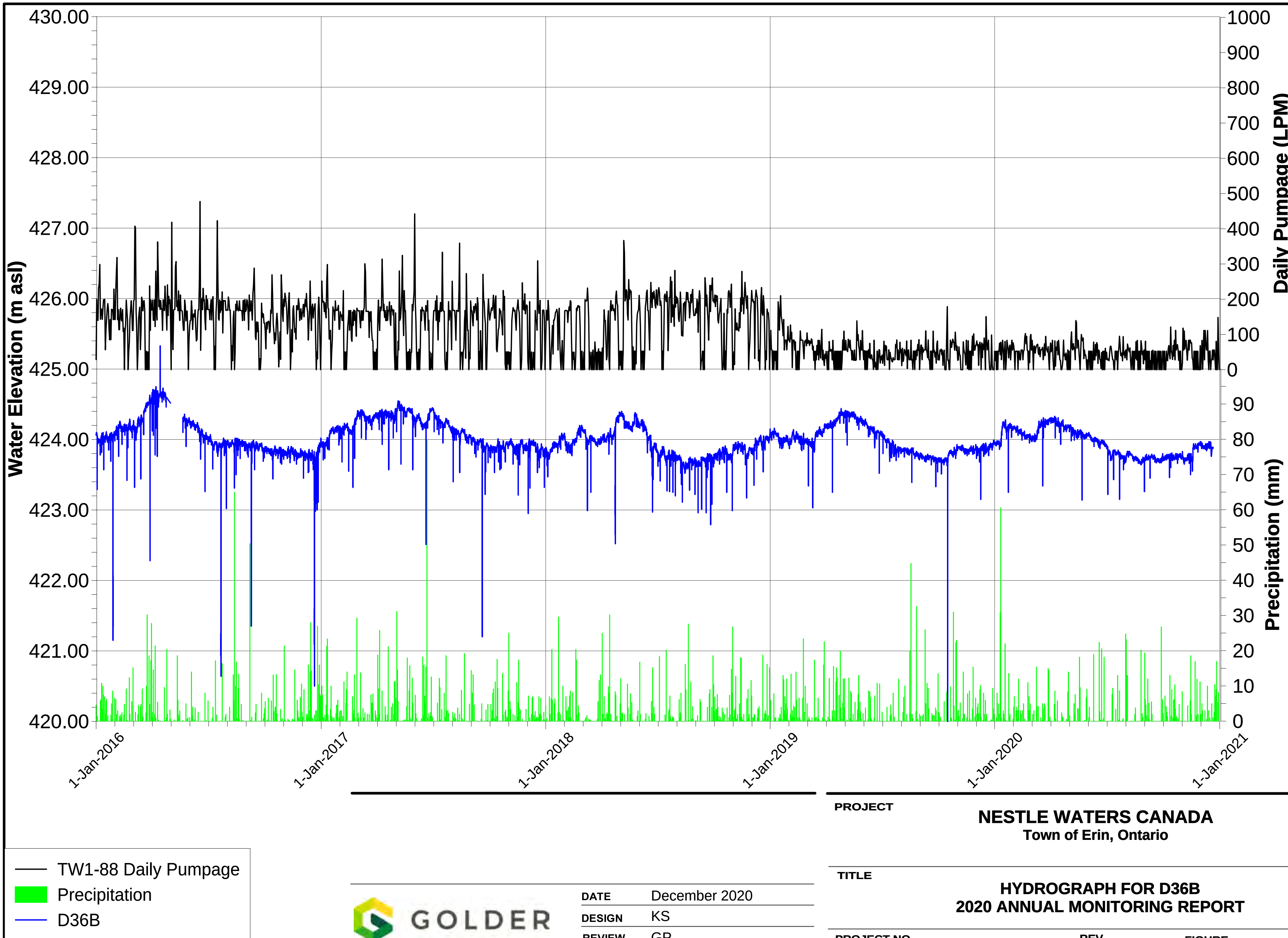
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR D3
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D7



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

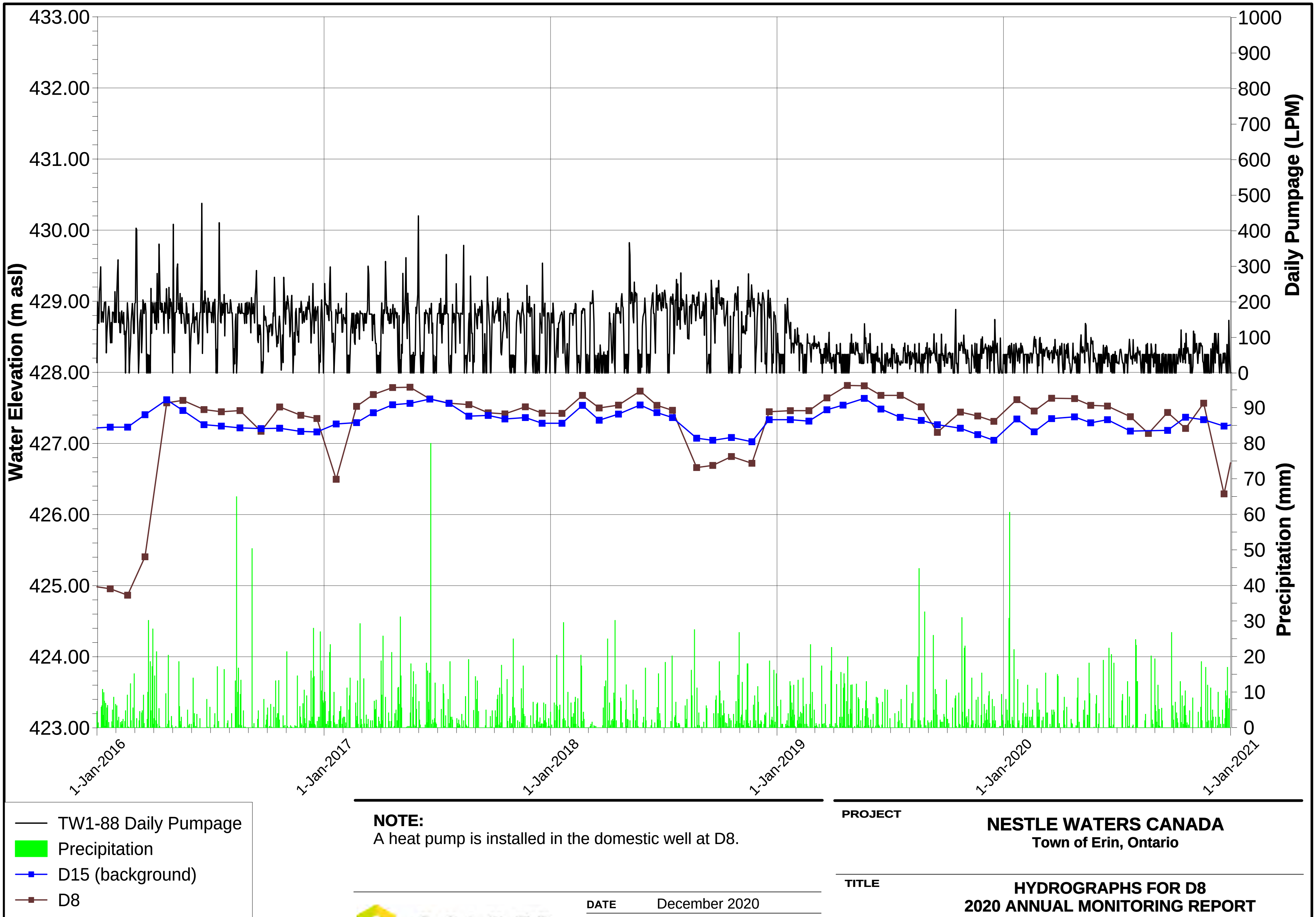
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR D36B
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D8



NOTE:
A heat pump is installed in the domestic well at D8.

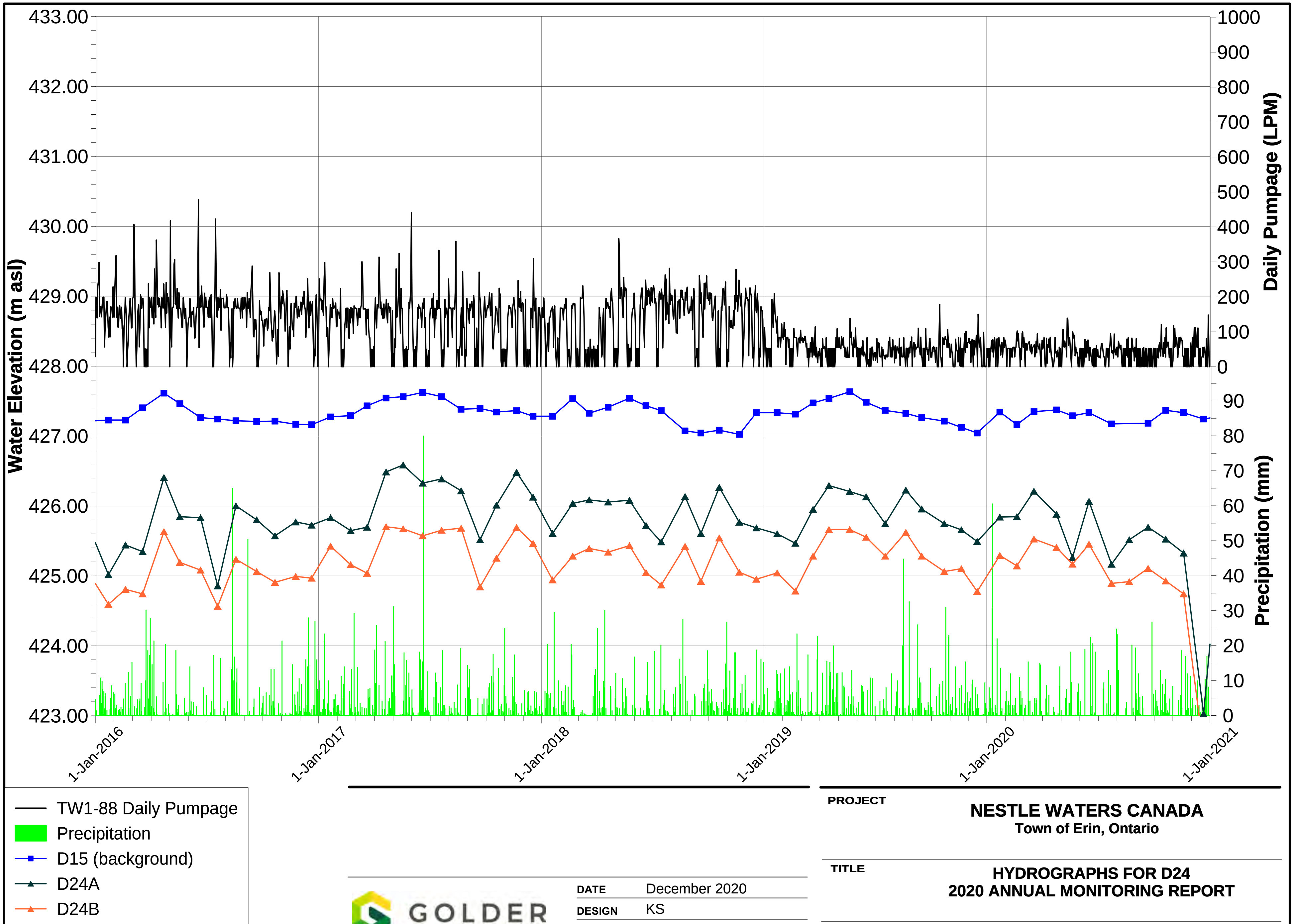
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE
HYDROGRAPHS FOR D8
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D9



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

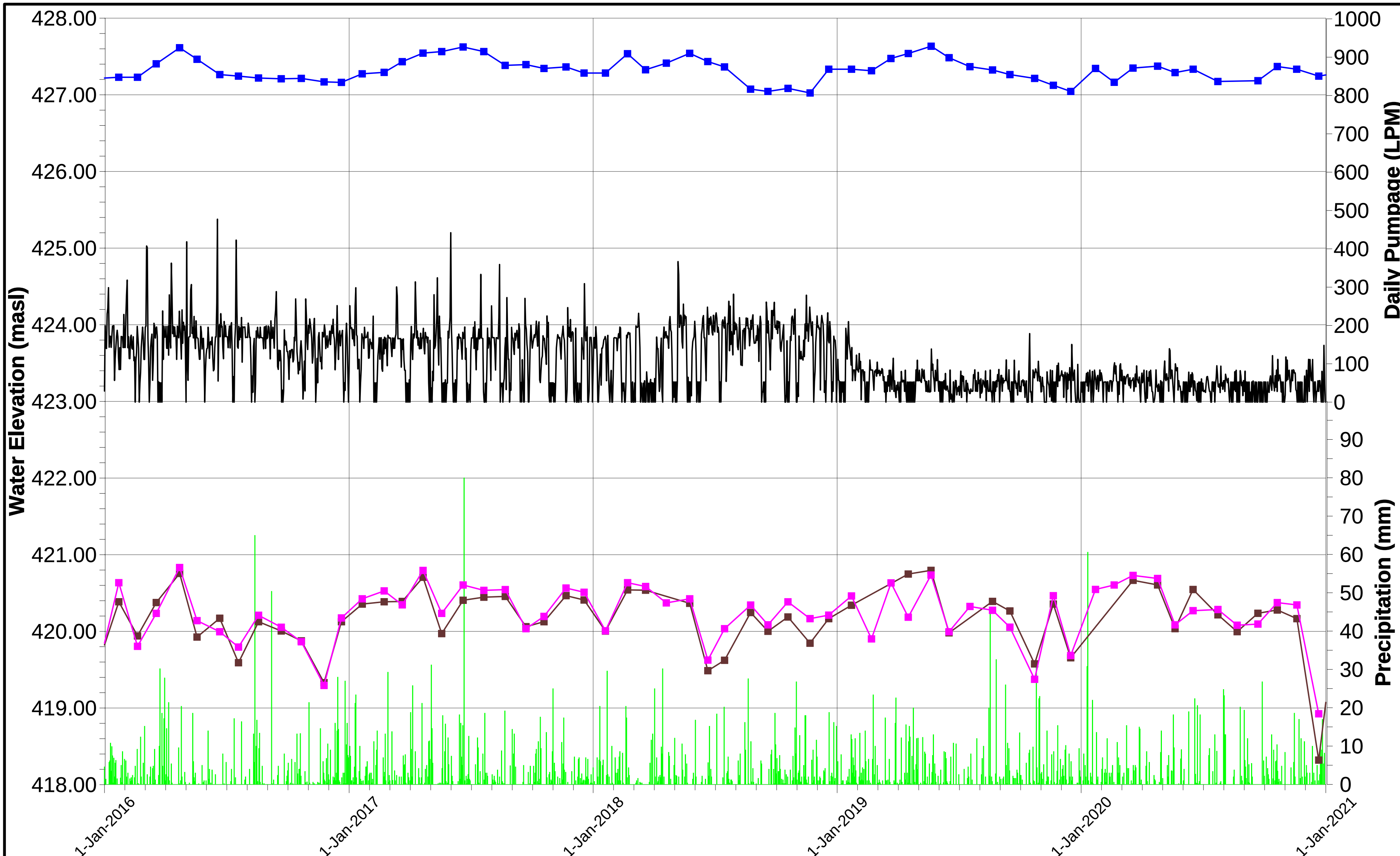
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR D24
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D10



TW1-88 Daily Pumpage
Precipitation
D15 (background)
D26A
D26B

Note: D26B manual reading not available for January, February, and December 2020 due to frozen lid.

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

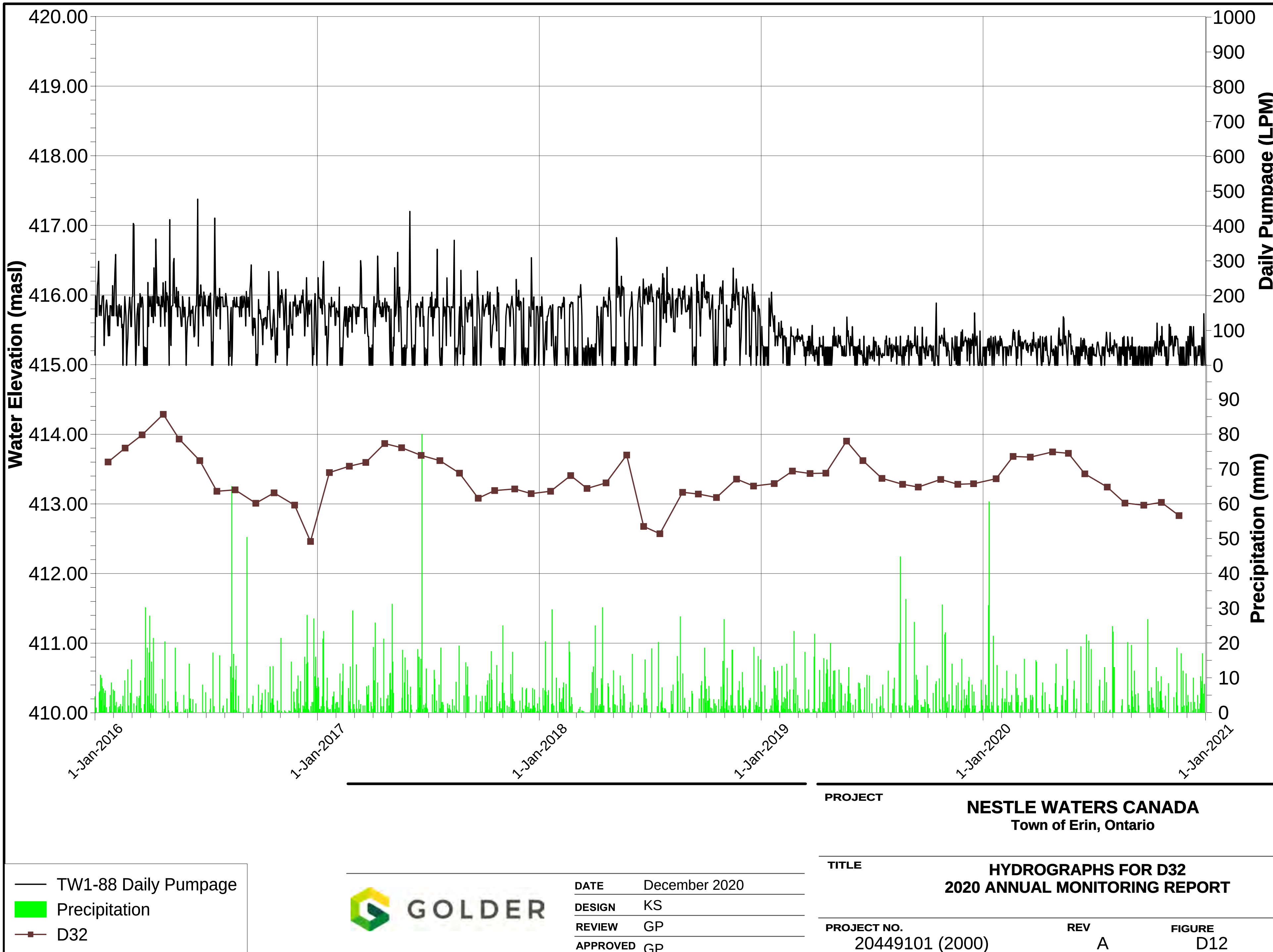
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR D26
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D11



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

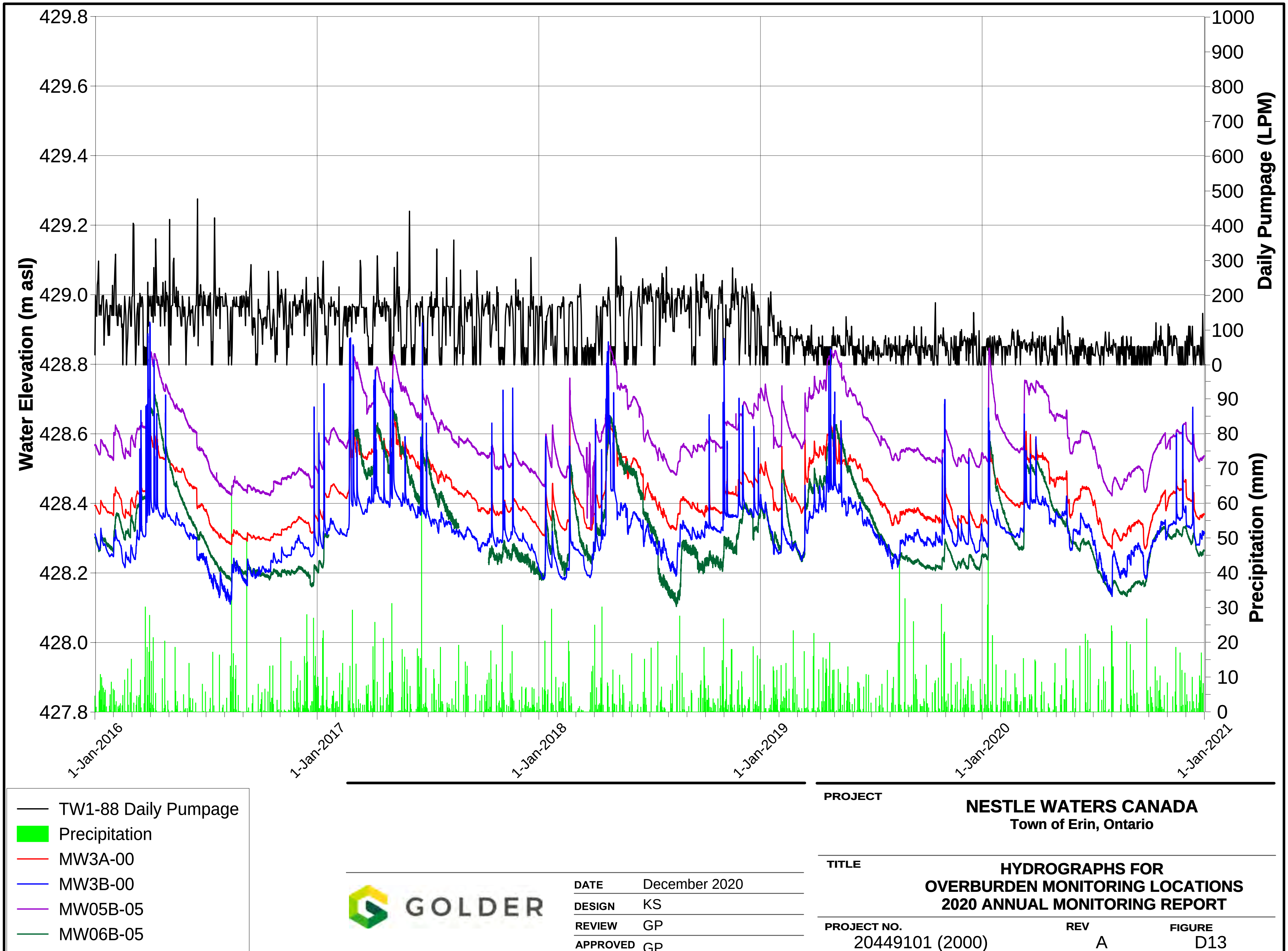
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR D32
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D12



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

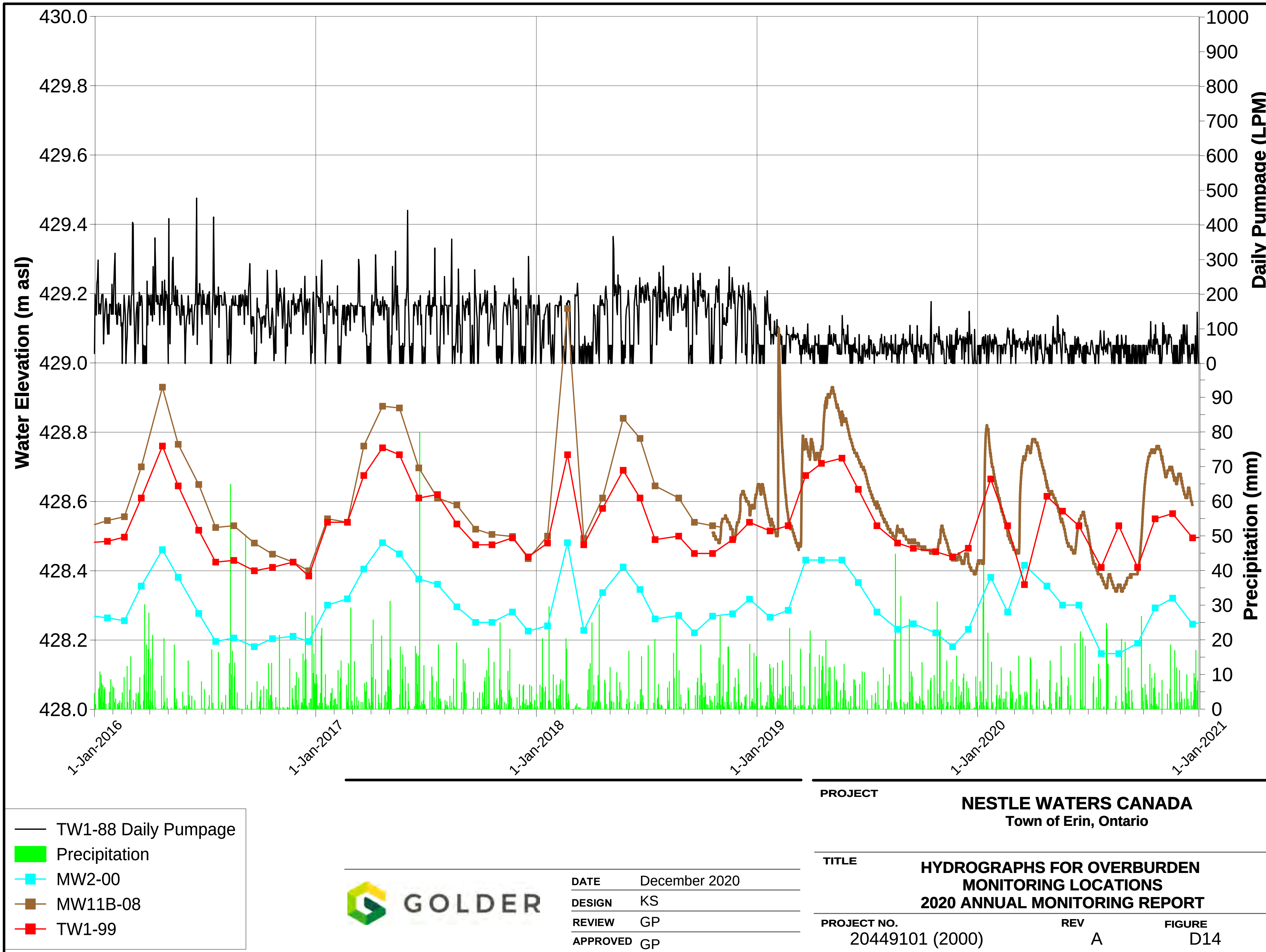
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR OVERBURDEN MONITORING LOCATIONS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D13



DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

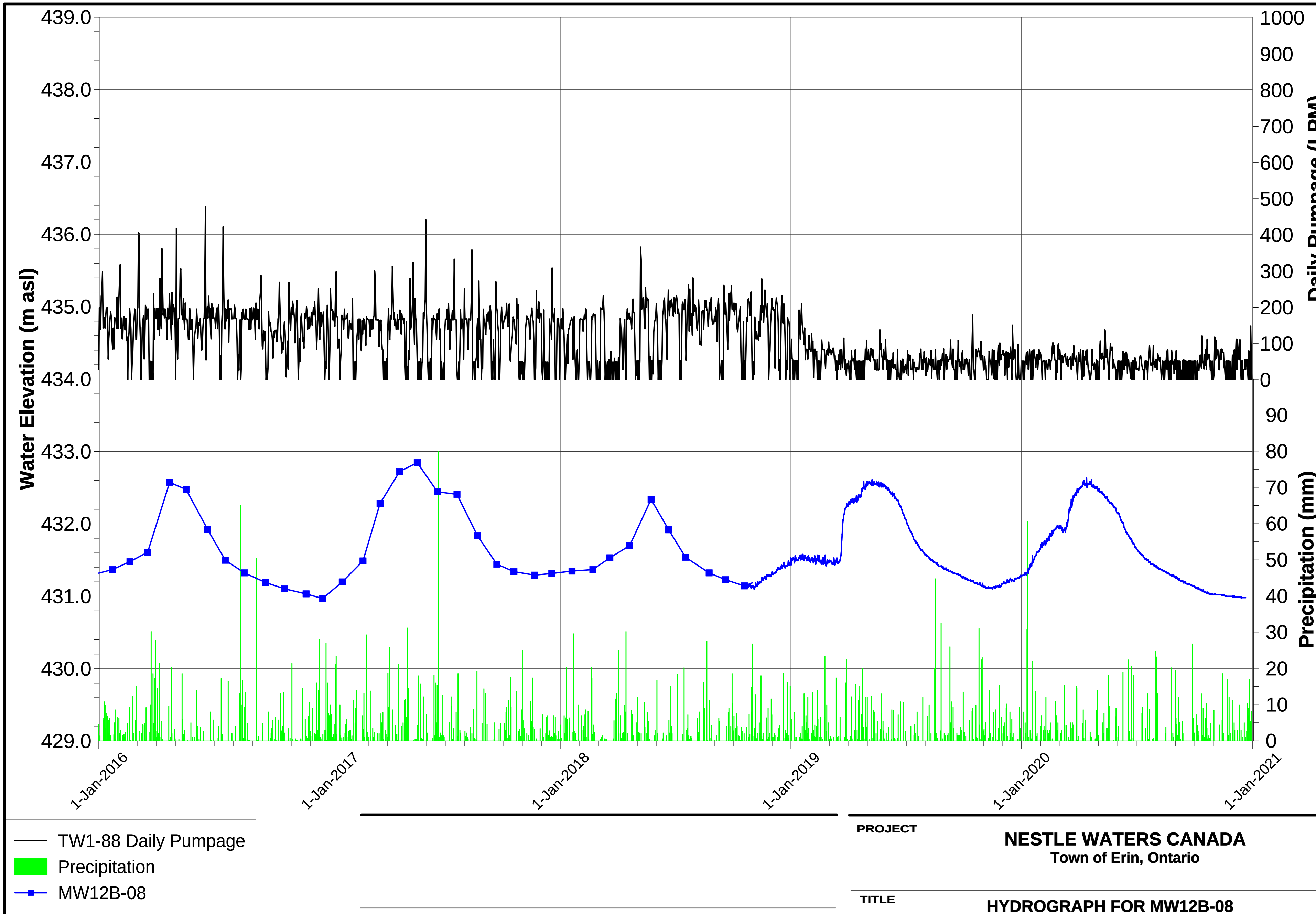
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR OVERBURDEN MONITORING LOCATIONS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D14



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

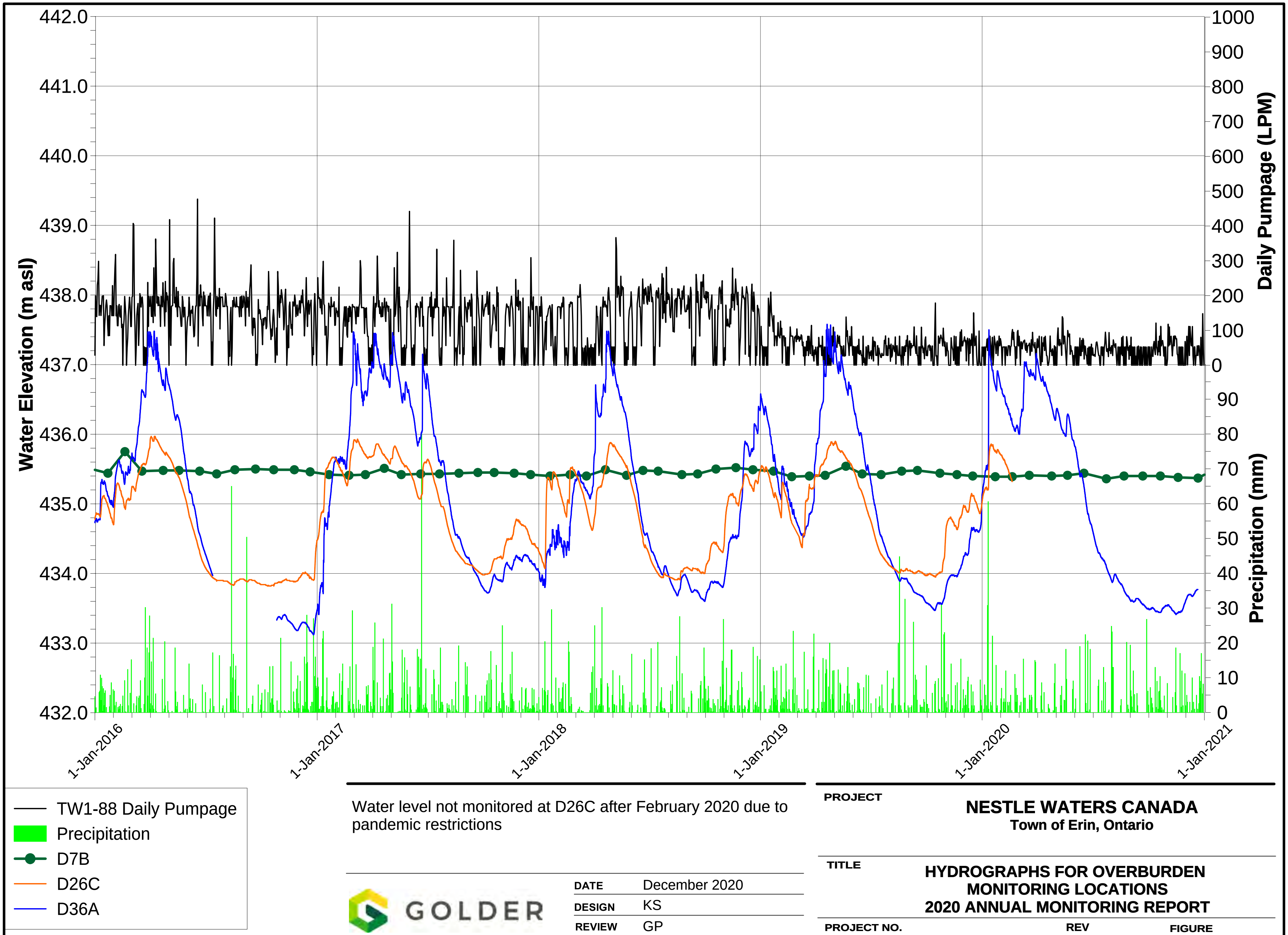
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR MW12B-08
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D15



Water level not monitored at D26C after February 2020 due to pandemic restrictions

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

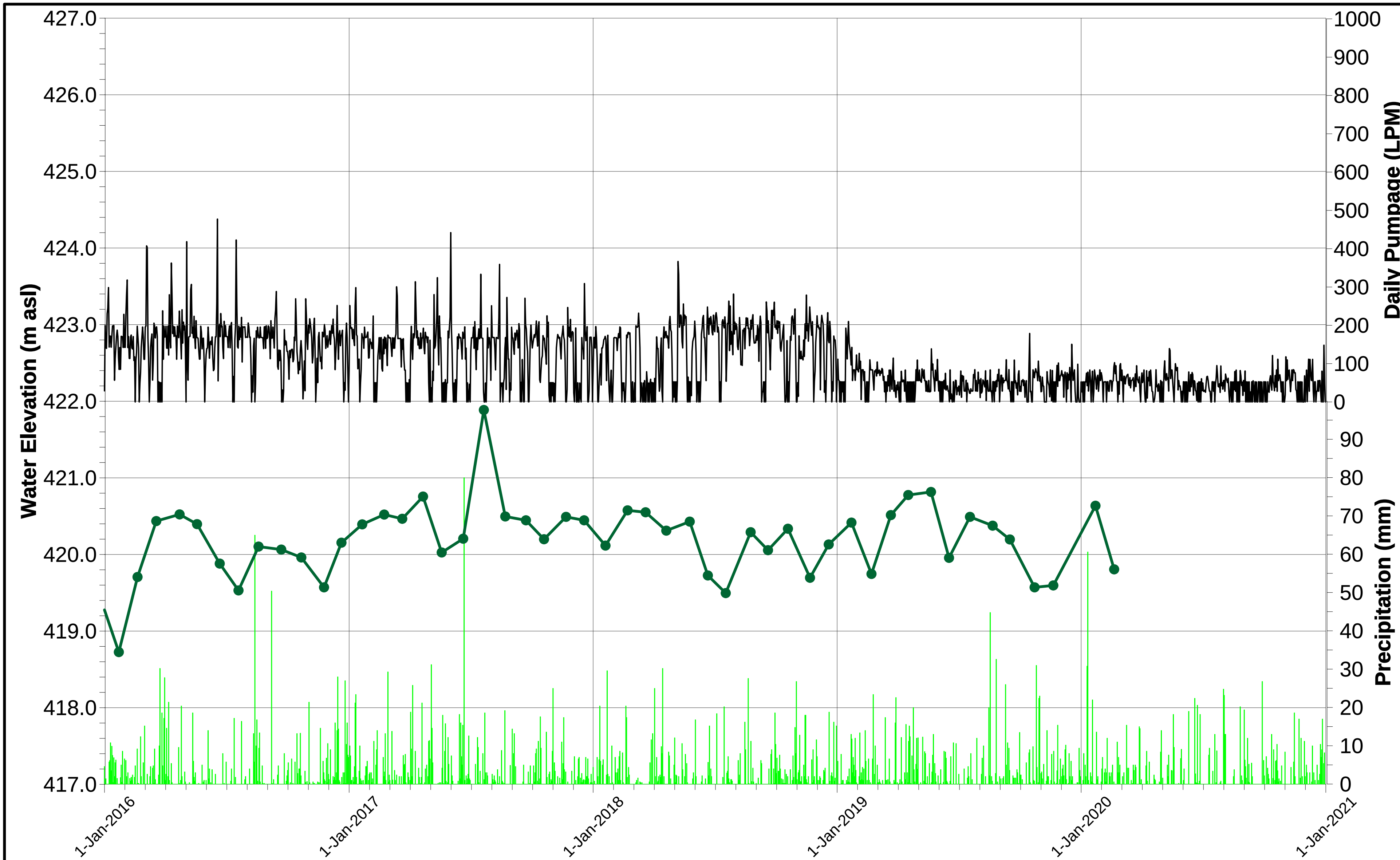
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR OVERBURDEN MONITORING LOCATIONS
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D16



Note: Beginning March 2020, the property owner no longer wanted their well included in the Nestle long term monitoring.

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

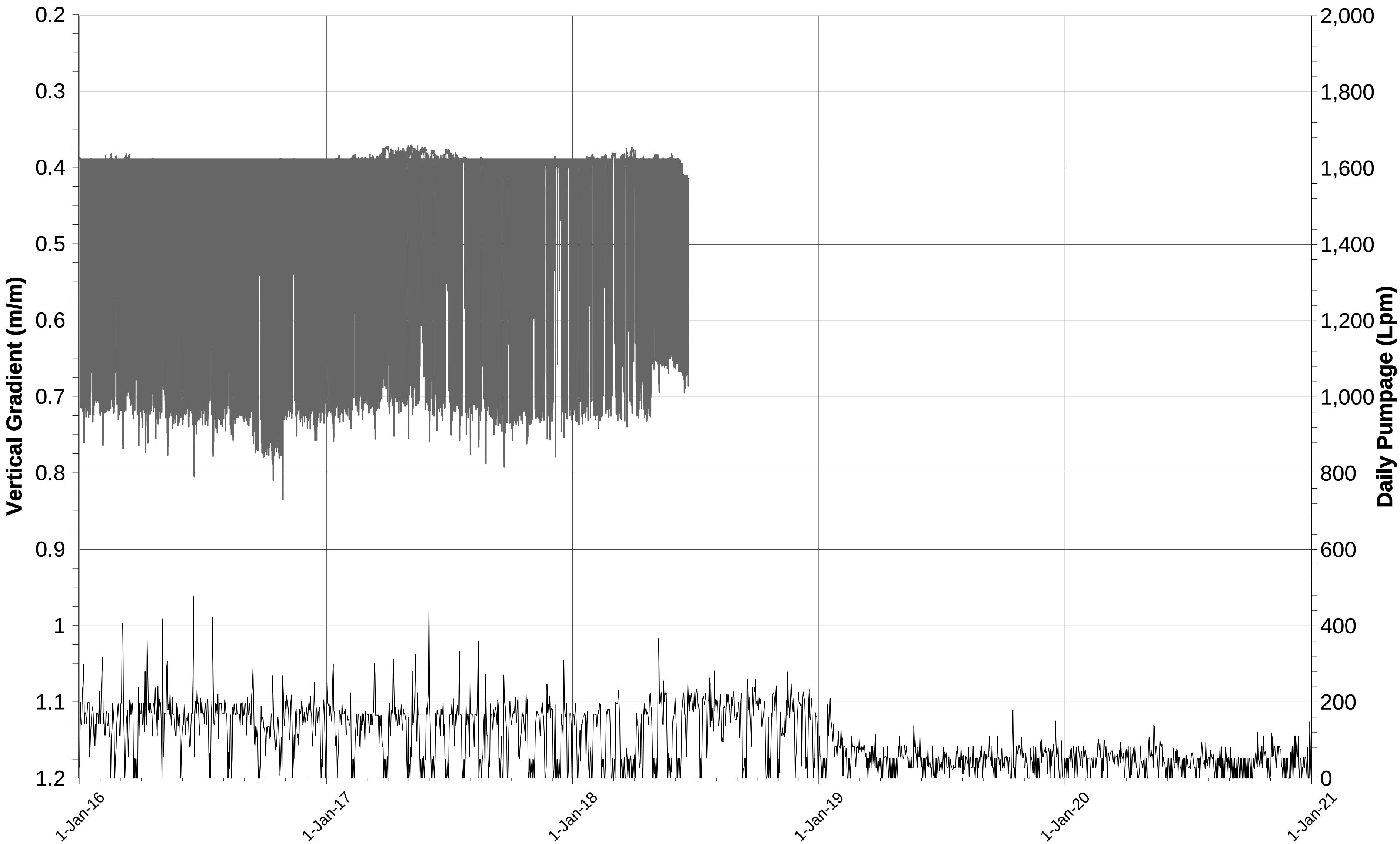
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR OVERBURDEN MONITORING LOCATIONS
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D17



TW1-88 Daily Pumpage
Vertical Gradient OB/BR

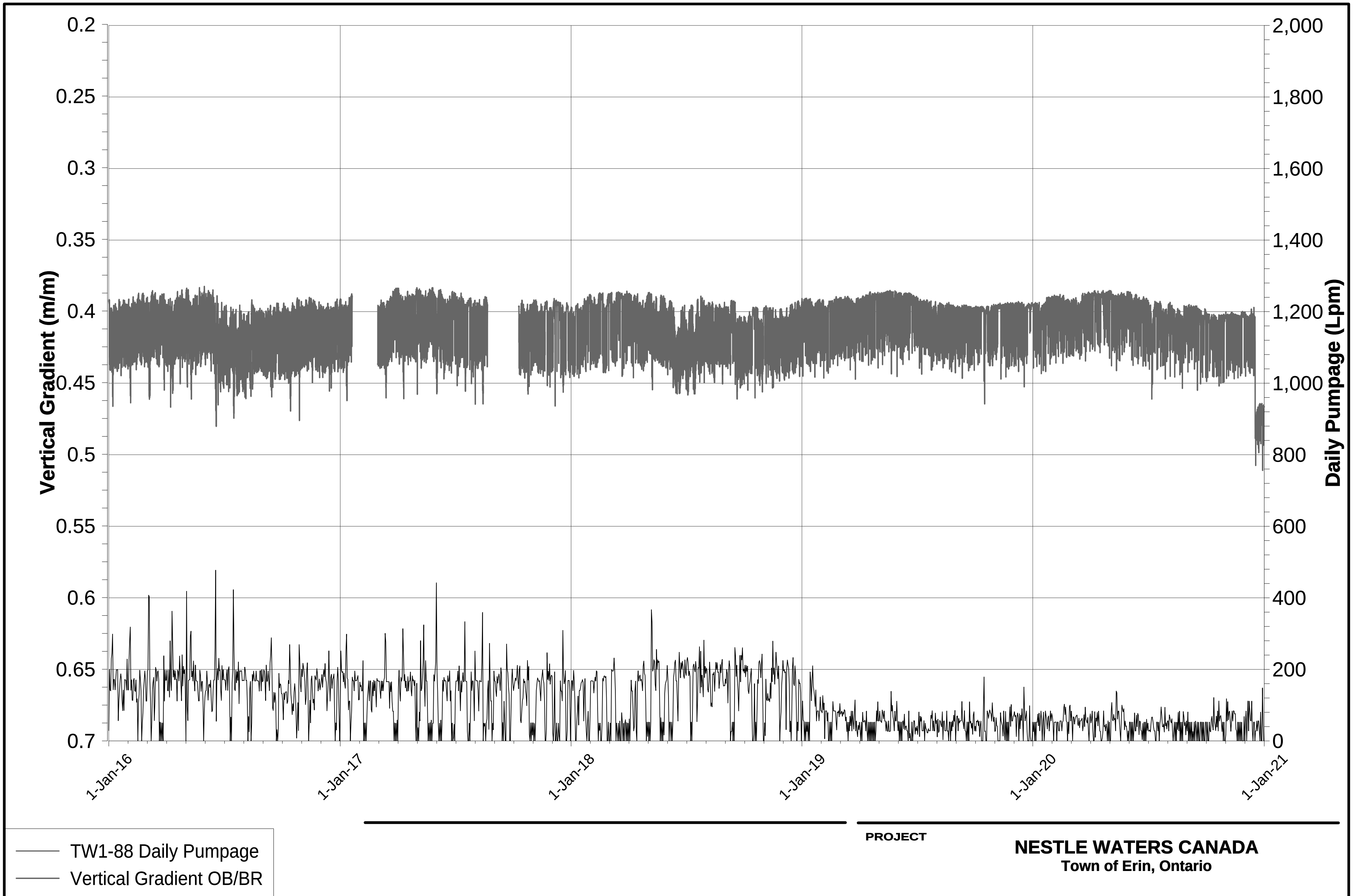
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE
MW5-05 VERTICAL GRADIENT
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D18



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

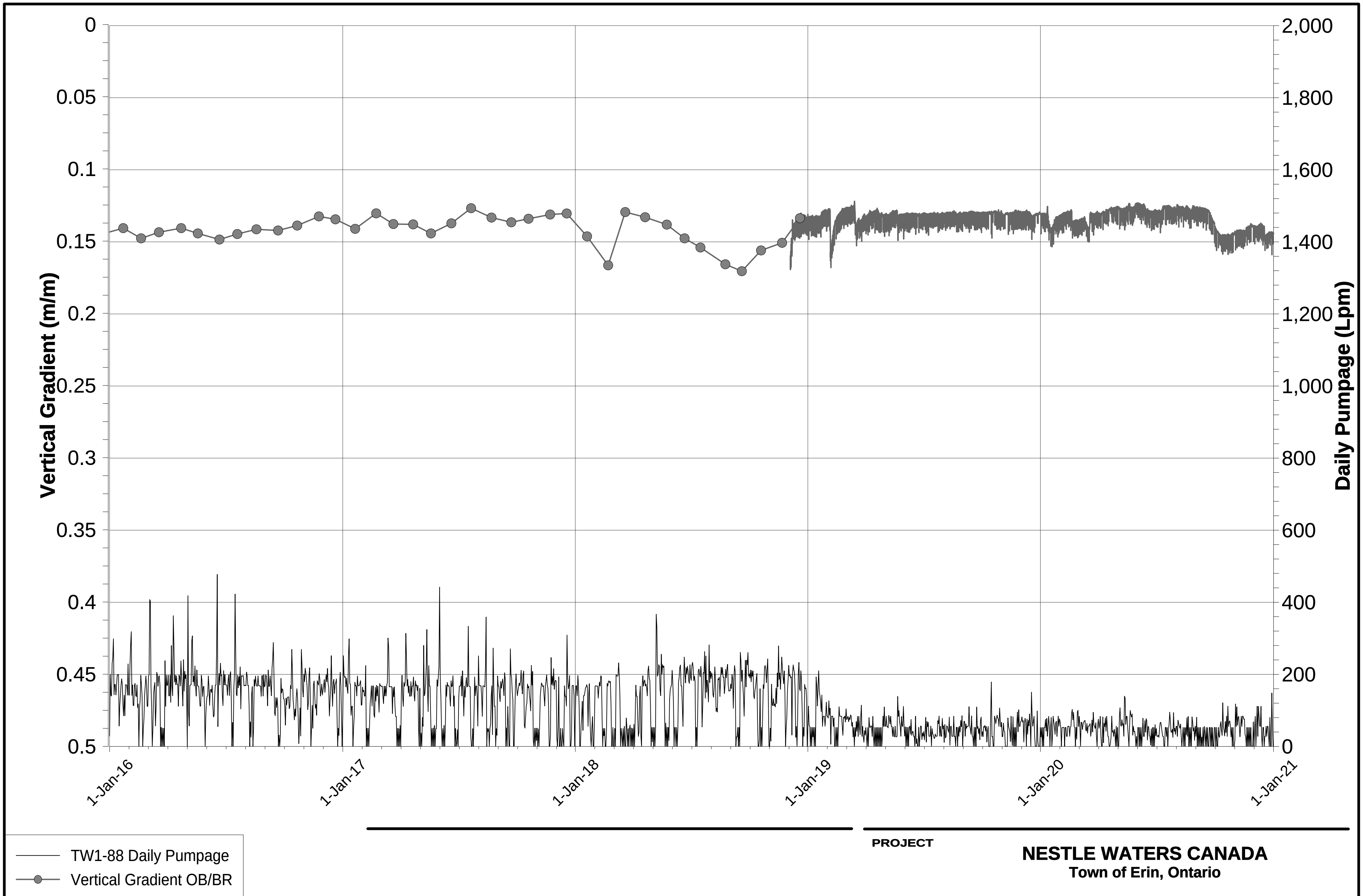
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

MW6-05 VERTICAL GRADIENT
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D19



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

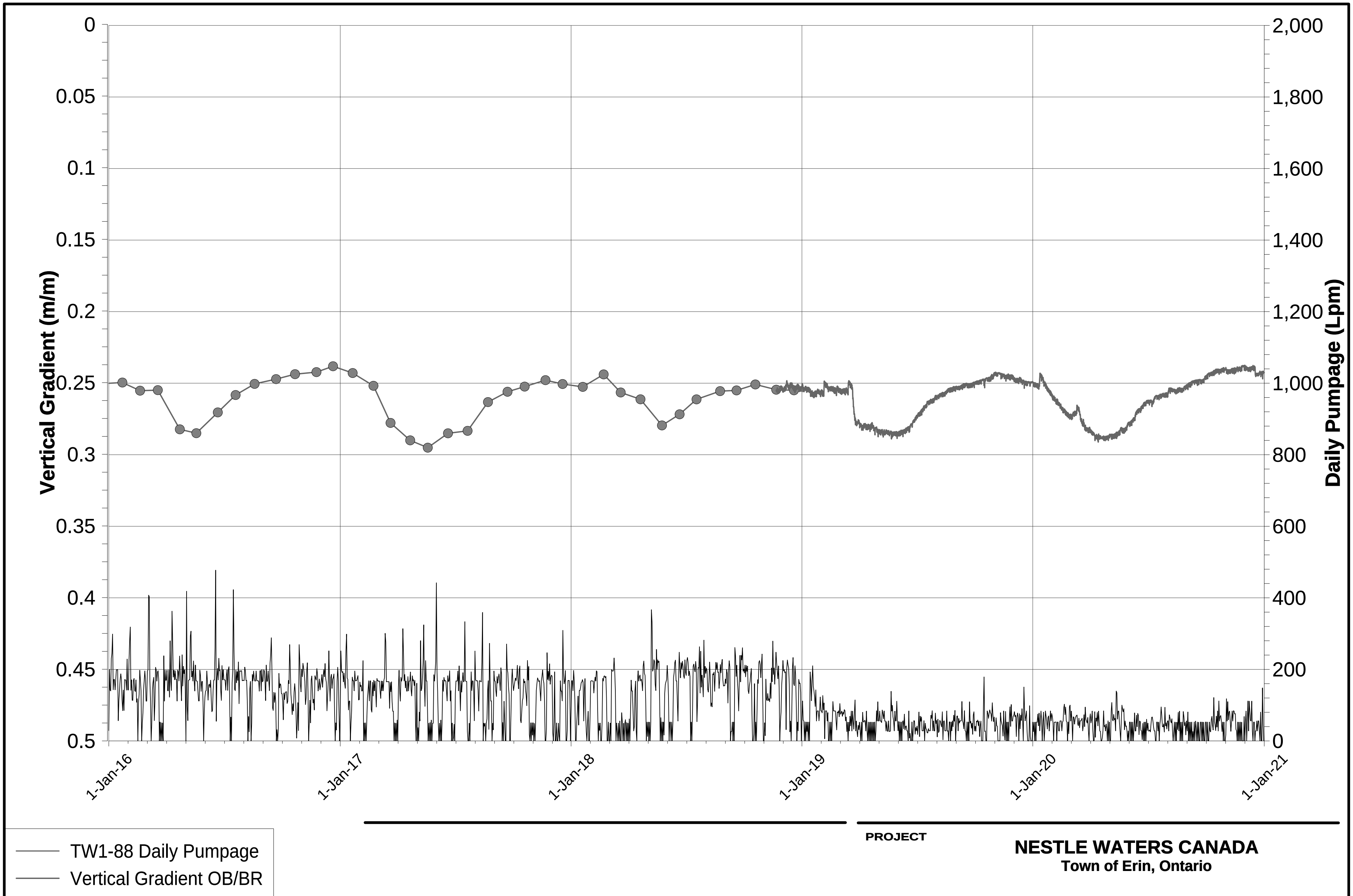
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

MW11-08 VERTICAL GRADIENT
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D20



DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

GOLDER

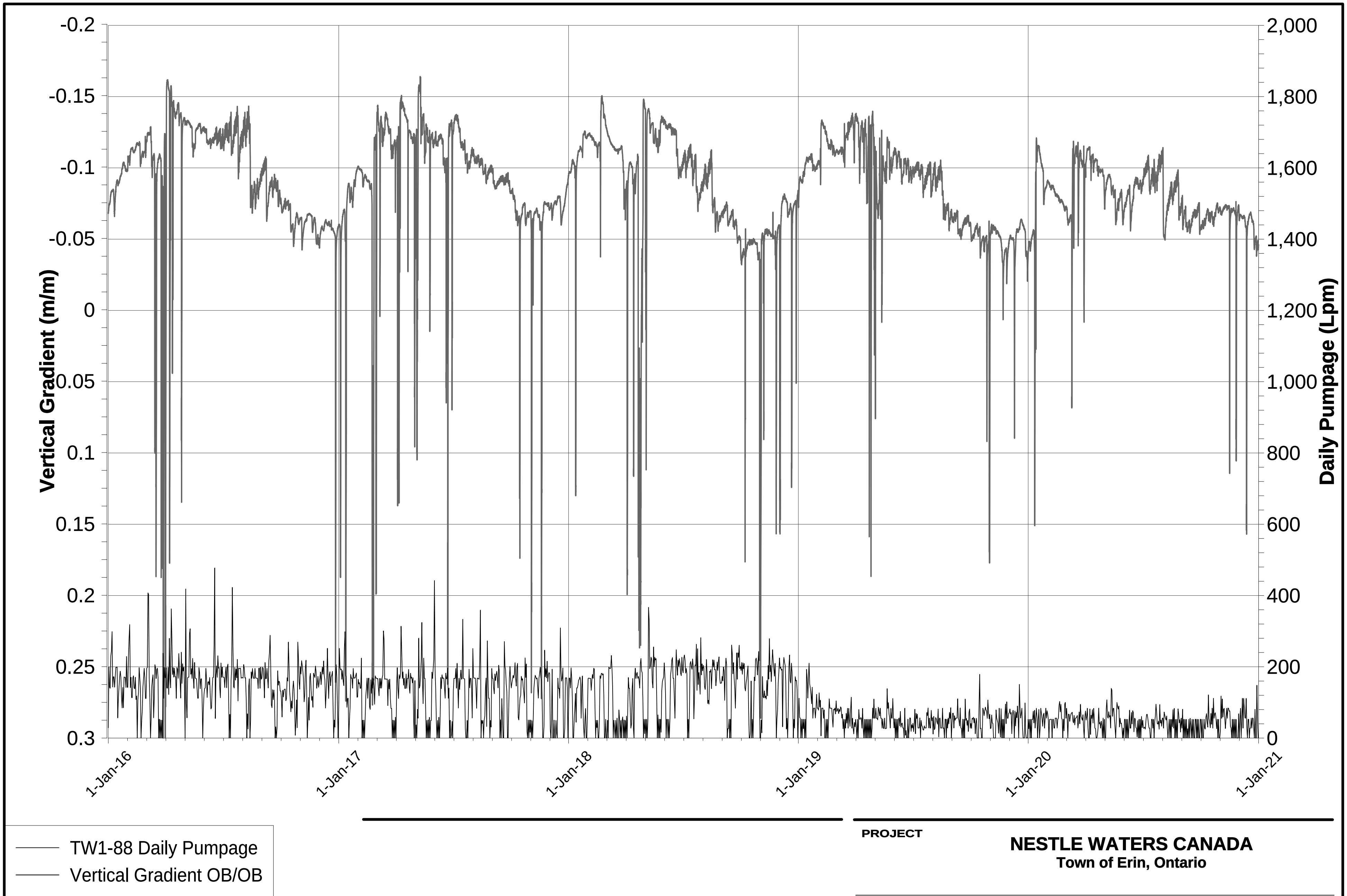
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

MW12-08 VERTICAL GRADIENT
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D21



DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE
MW3-00 VERTICAL GRADIENT
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	D22

TABLE D1

Manual Groundwater Elevations (masl)

2020 Annual Report

DATE	Water Level Elevation (masl)						
	MW2-00	MW3A-00	MW3B-00	MW05A-05	MW05B-05	MW06A-05	MW06B-05
22-Jan-20	428.38	428.47	428.35	423.75	428.66	422.01	428.45
19-Feb-20	428.28	428.40	428.30	423.61	428.56	421.95	428.30
18-Mar-20	428.41	428.51	428.38	423.84	428.71	421.76	428.48
24-Apr-20	428.35	428.46	428.35	423.80	428.65	422.16	428.39
20-May-20	428.30	428.41	428.33	423.65	428.60	422.04	428.33
16-Jun-20	428.30	428.44	428.34	423.59	428.60	421.37	428.28
23-Jul-20	428.16	428.29	428.18	423.37	428.44	421.82	428.16
21-Aug-20	428.16	428.31	428.21	423.34	428.46	421.67	428.14
21-Sep-20	428.19	428.33	428.25	423.49	428.49	421.90	428.18
20-Oct-20	428.29	428.40	428.33	423.48	428.57	421.75	428.32
18-Nov-20	428.32	428.44	428.35	423.45	428.59	421.46	428.31
21-Dec-20	428.24	428.35	428.28	422.56	428.53	420.84	428.25

TABLE D1

Manual Groundwater Elevations (masl)

2020 Annual Report

DATE	Water Level Elevation (masl)					
	MW11A-08	MW11B-08	MW12A-08	MW12B-08	TW1-88	TW1-99
22-Jan-20	427.00	428.73	424.87	431.54	418.49	428.66
19-Feb-20	426.88	428.52	424.72	431.84	421.78	428.53
18-Mar-20	426.99	428.73	424.91	432.24	418.41	428.36
24-Apr-20	427.05	428.66	424.89	432.54	423.05	428.61
20-May-20	426.94	428.55	424.84	432.28	418.06	428.57
16-Jun-20	426.85	428.54	424.72	432.15	418.20	428.53
23-Jul-20	426.81	428.39	424.62	431.45	422.59	428.41
21-Aug-20	426.77	428.36	424.58	431.31	422.62	428.53
21-Sep-20	426.81	428.40	424.62	431.16	422.82	428.41
20-Oct-20	426.88	428.74	424.68	431.04	422.14	428.55
18-Nov-20	426.83	428.69	424.67	431.01	422.40	428.56
21-Dec-20	426.78	428.59	424.53	430.98	421.66	428.49

TABLE D1

Manual Groundwater Elevations (masl)

2020 Annual Report

DATE	Water Level Elevation (masl)					
	D3	D7B	D8	D15	D24A	D24B
22-Jan-20	424.84	435.39	427.61	427.34	425.84	425.29
19-Feb-20	424.53	435.39	427.45	427.16	425.84	425.14
18-Mar-20	424.67	435.41	427.63	427.34	426.21	425.52
24-Apr-20	424.80	435.40	427.63	427.37	425.88	425.40
20-May-20	424.85	435.41	427.53	427.29	425.26	425.17
16-Jun-20	424.79	435.44	427.52	427.33	426.06	425.45
23-Jul-20	424.45	435.36	427.37	427.17	425.16	424.89
21-Aug-20	424.50	435.40	427.14	Erroneous	425.51	424.91
21-Sep-20	424.69	435.40	427.43	427.18	425.69	425.10
20-Oct-20	423.38	435.40	427.21	427.36	425.52	424.92
18-Nov-20	422.80	435.38	427.56	427.33	425.32	424.74
21-Dec-20	421.87	435.37	426.29	427.24	423.02	422.50

TABLE D1

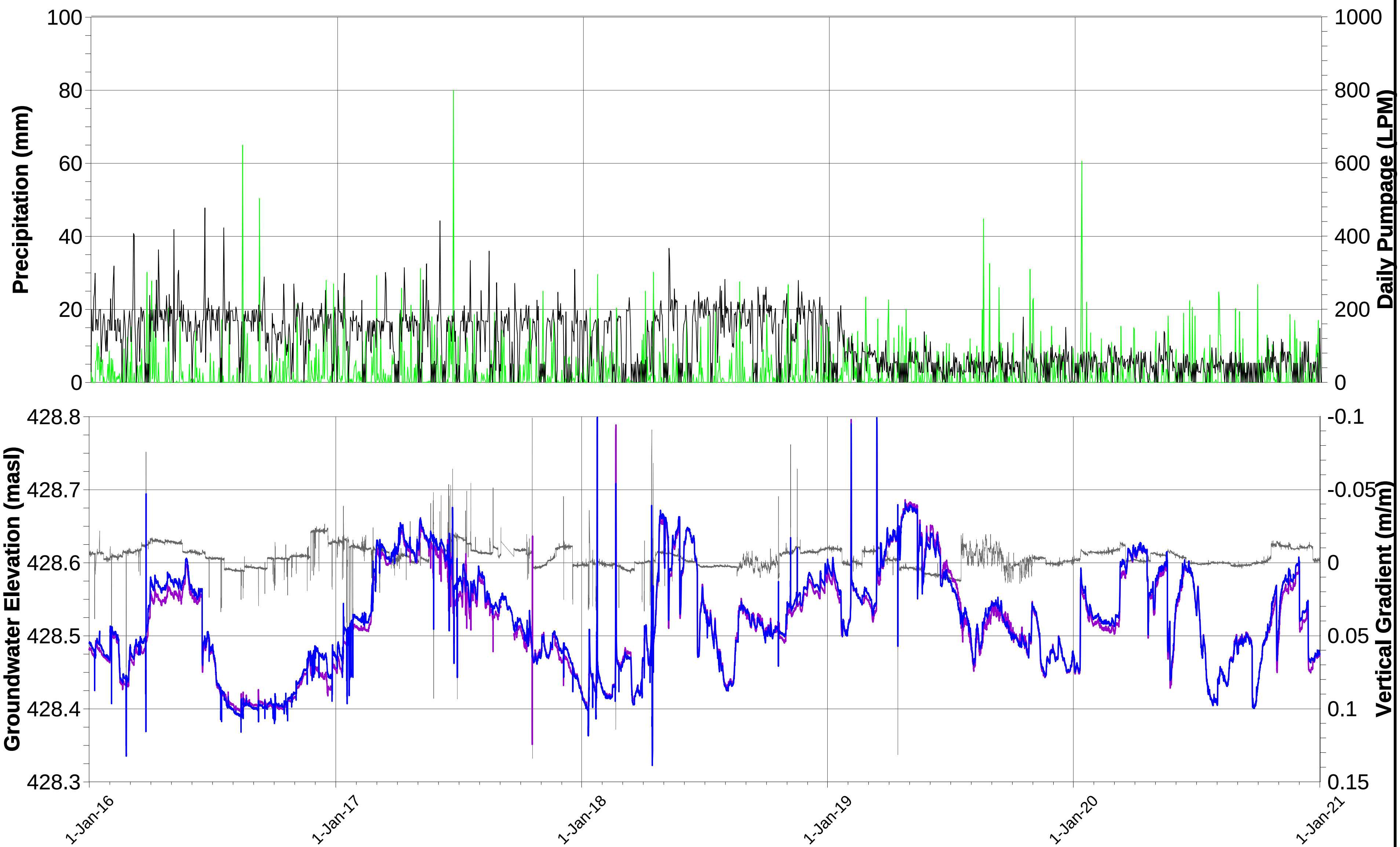
Manual Groundwater Elevations (masl)

2020 Annual Report

DATE	Water Level Elevation (masl)						
	D26A	D26B	D26C	D27	D32	D36A	D36B
22-Jan-20	FROZEN	420.55	435.76	420.63	413.36	436.70	424.20
19-Feb-20	FROZEN	420.61	435.32	419.80	413.68	436.16	424.03
18-Mar-20	420.66	420.73	No Access	No Access	413.67	436.84	424.23
24-Apr-20	420.60	420.69	No Access	No Access	413.74	436.42	424.31
20-May-20	420.03	420.08	No Access	No Access	413.72	436.27	424.08
16-Jun-20	420.54	420.27	No Access	No Access	413.43	435.27	423.97
23-Jul-20	420.21	420.28	No Access	No Access	413.24	434.11	423.79
21-Aug-20	419.99	420.08	No Access	No Access	413.01	433.77	423.85
21-Sep-20	420.23	420.09	No Access	No Access	412.98	433.55	423.71
20-Oct-20	420.27	420.37	No Access	No Access	413.02	433.44	423.75
18-Nov-20	420.16	420.34	No Access	No Access	412.83	433.46	423.88
21-Dec-20	418.32	418.93	No Access	No Access	Erroneous	433.77	423.88

APPENDIX E

Surface Water Level Monitoring



TW1-88 Daily Pumpage
Precipitation
P3B-05 (Shallow)
P3A-05 (Deep)
Vertical Gradient OB/OB

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

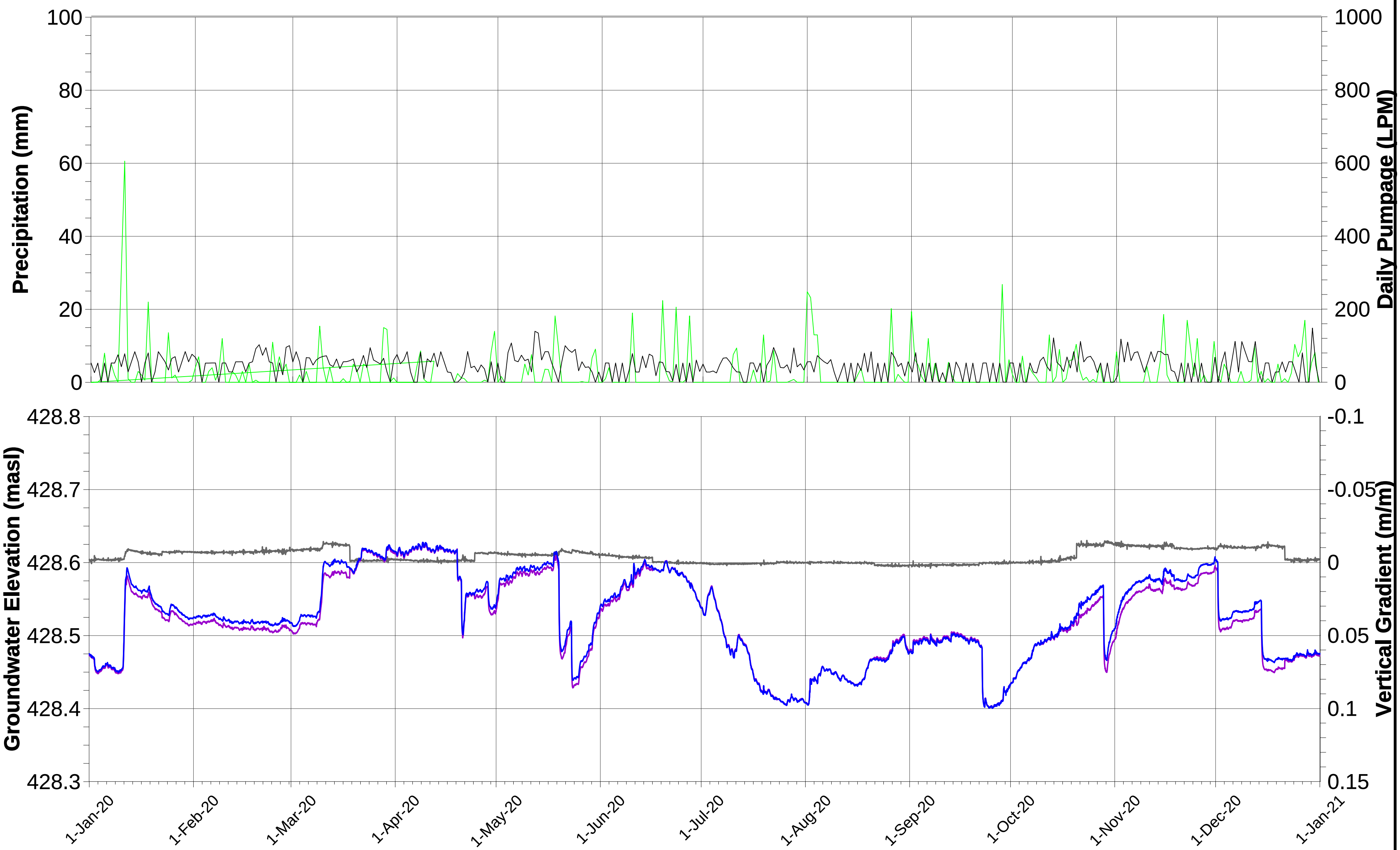
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P3-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E1a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

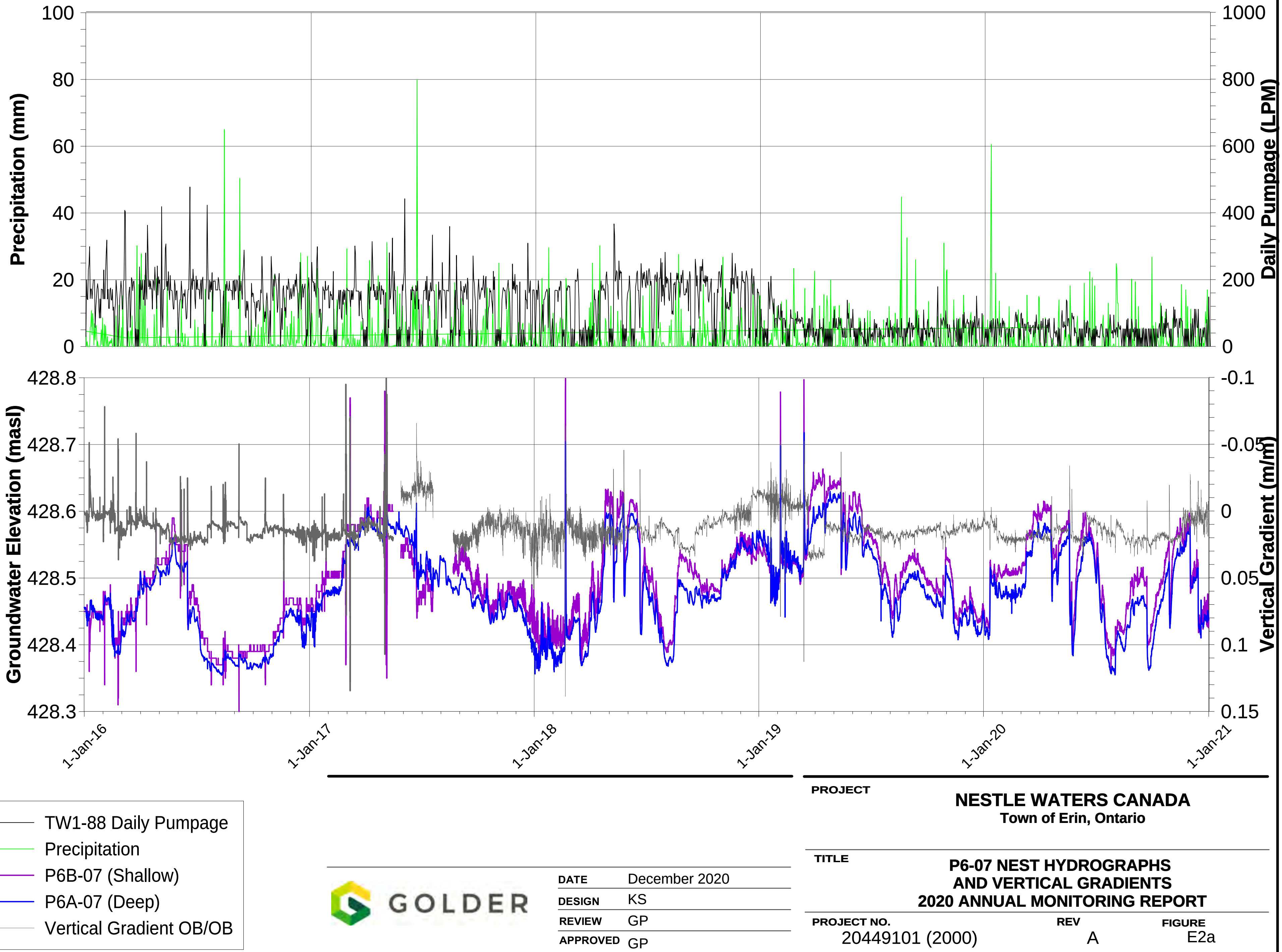
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P3-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E1b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

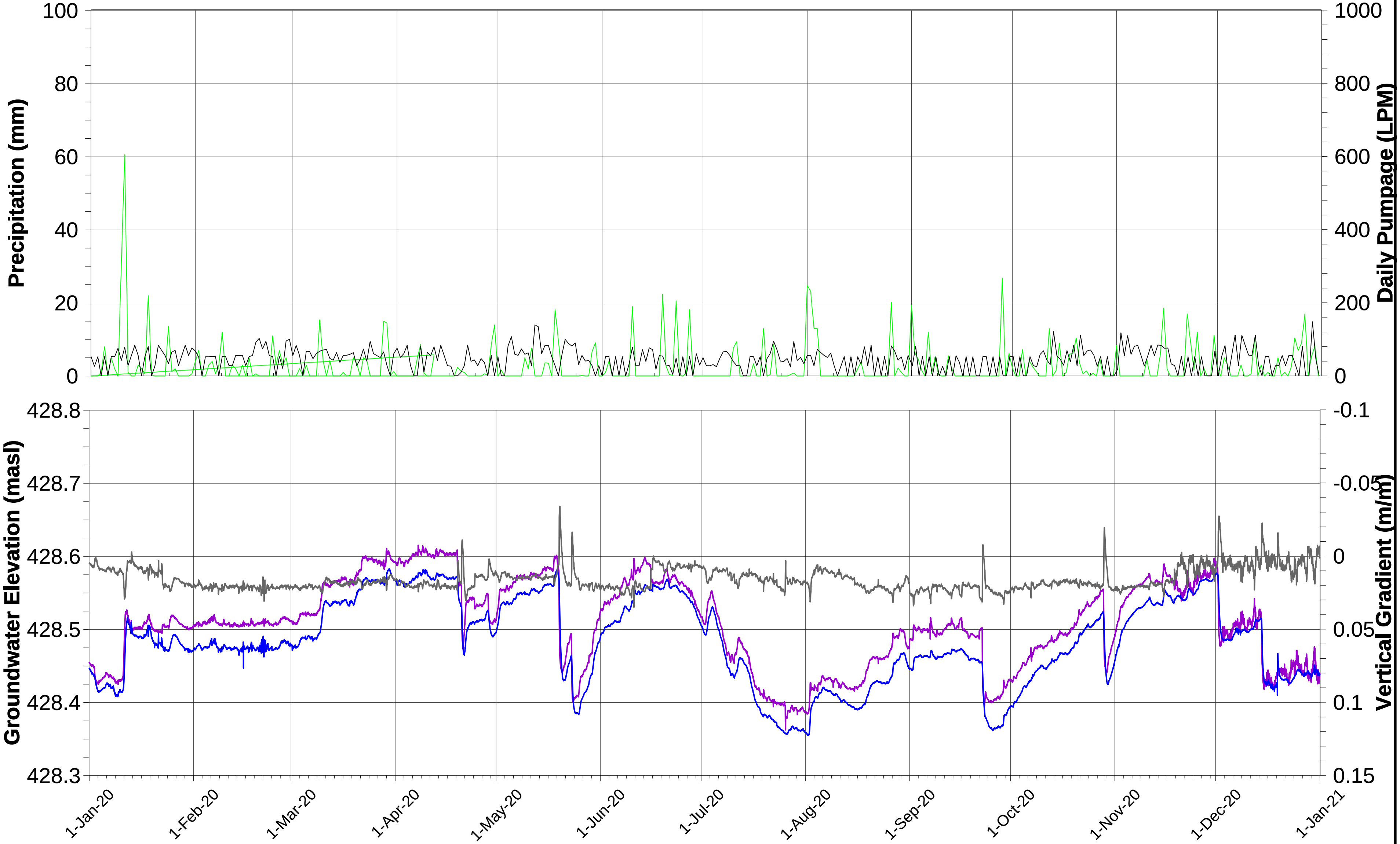
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P6-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E2a



TW1-88 Daily Pumping
Precipitation
P6B-07 (Shallow)
P6A-07 (Deep)
Vertical Gradient OB/OB

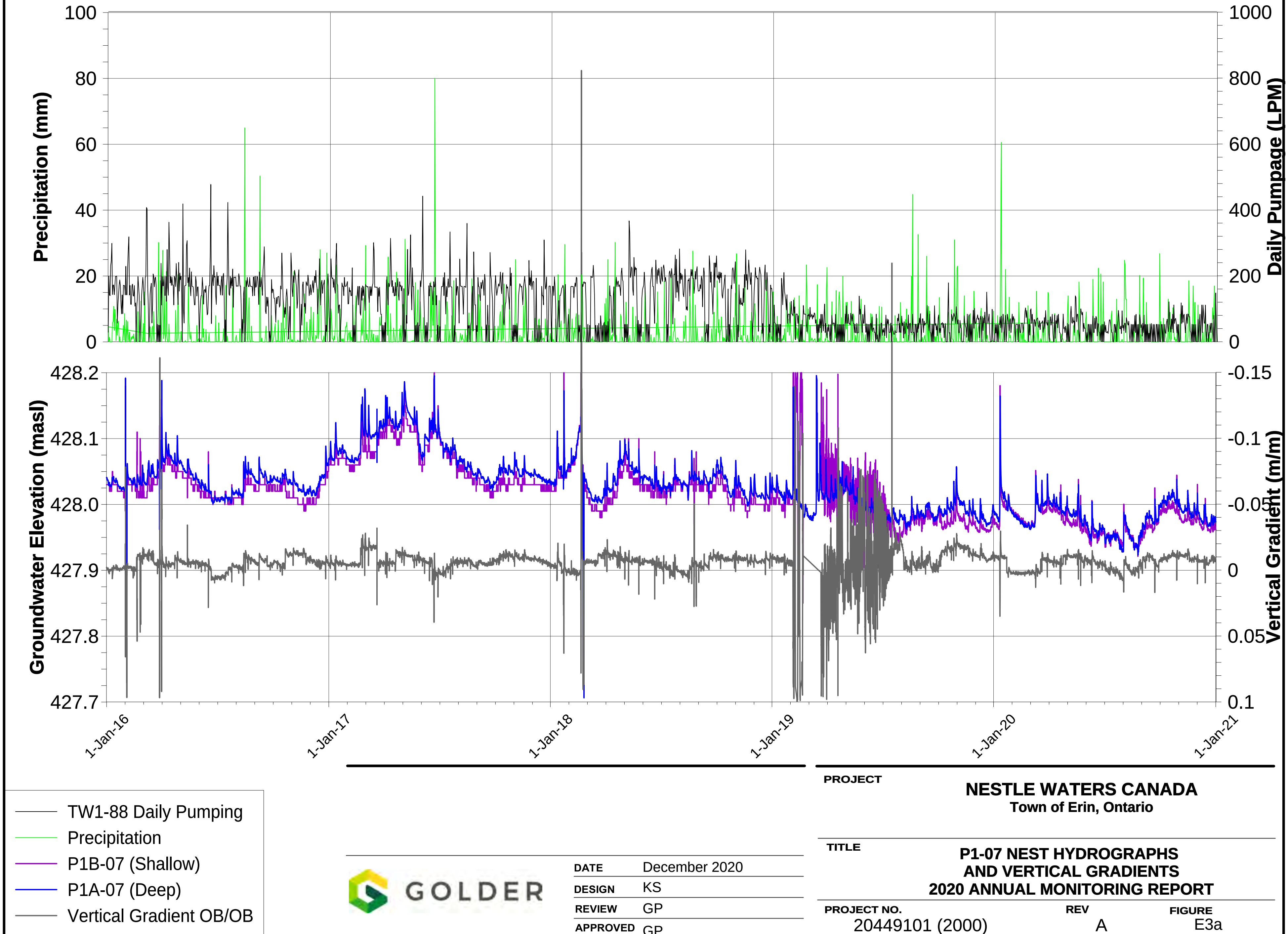
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE
P6-07 NEST HYDROGRAPHS
AND VERTICAL GRADIENTS (2020 DATA)
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E2b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

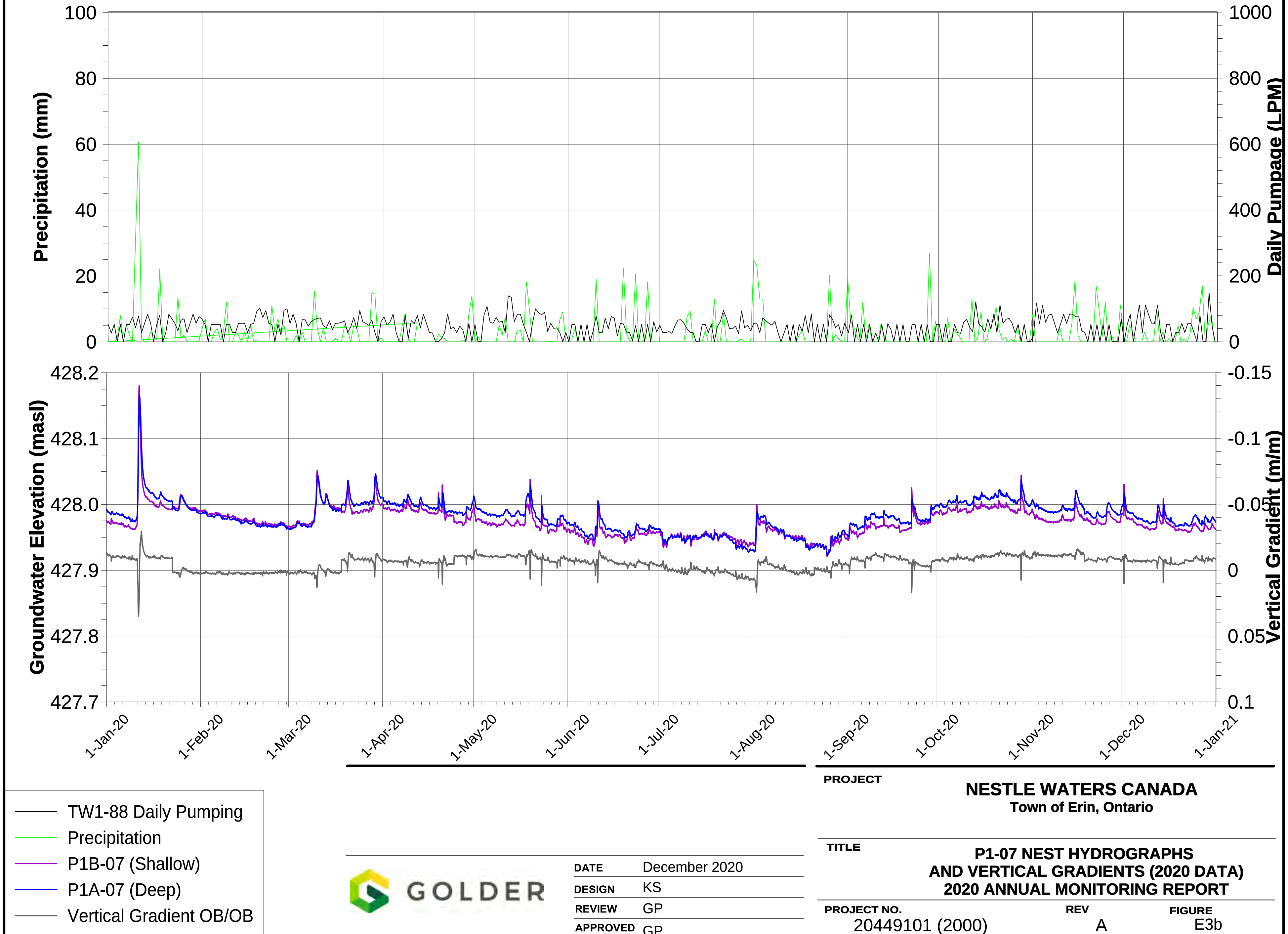
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P1-07 NEST HYDROGRAPHS
AND VERTICAL GRADIENTS
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E3a



DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

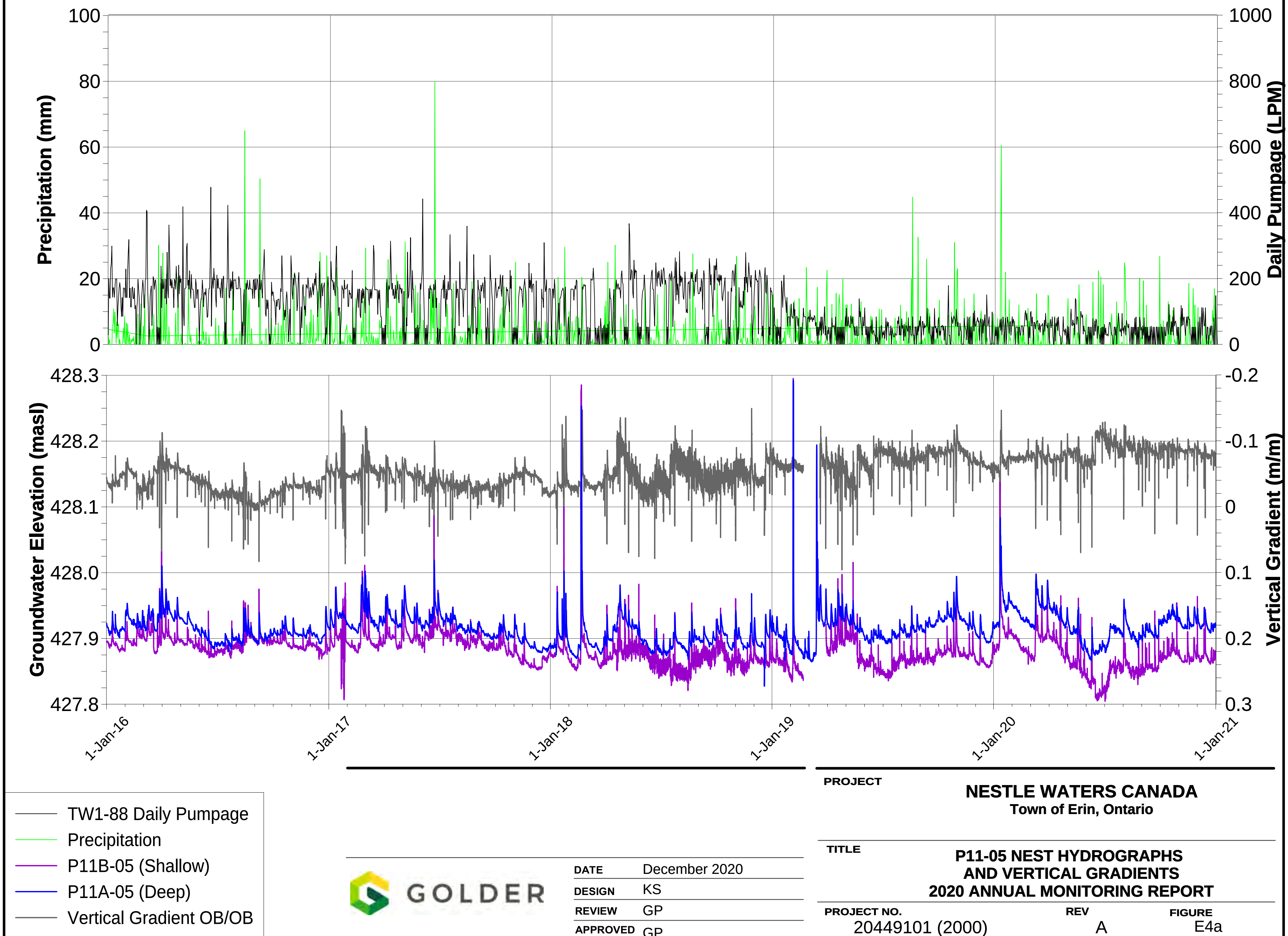
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P1-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E3b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

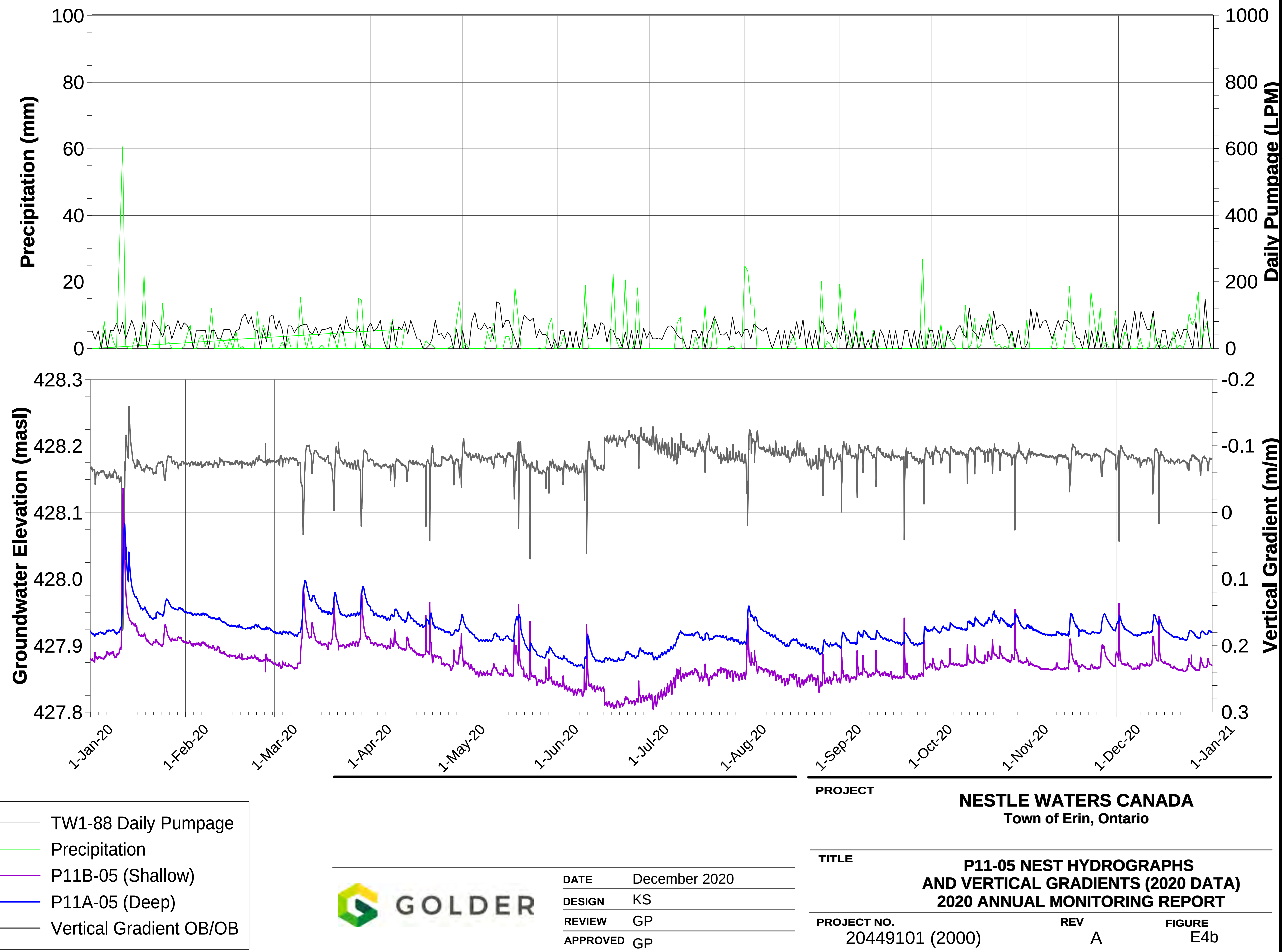
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P11-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E4a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

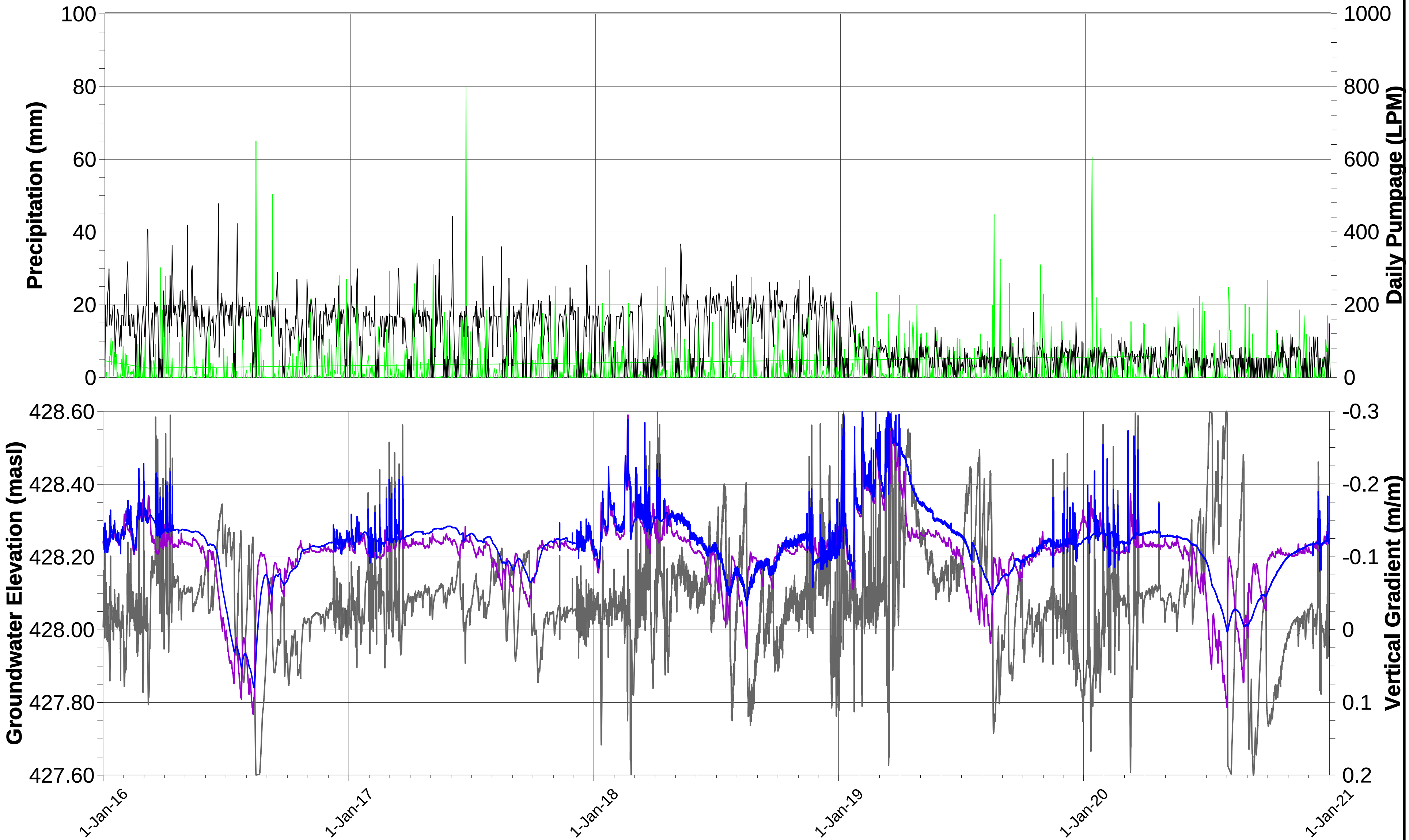
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P11-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E4b



TW1-88 Daily Pumpage
Precipitation
P10B-05 (Shallow)
P10A-05 (Deep)
Vertical Gradient OB/OB

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

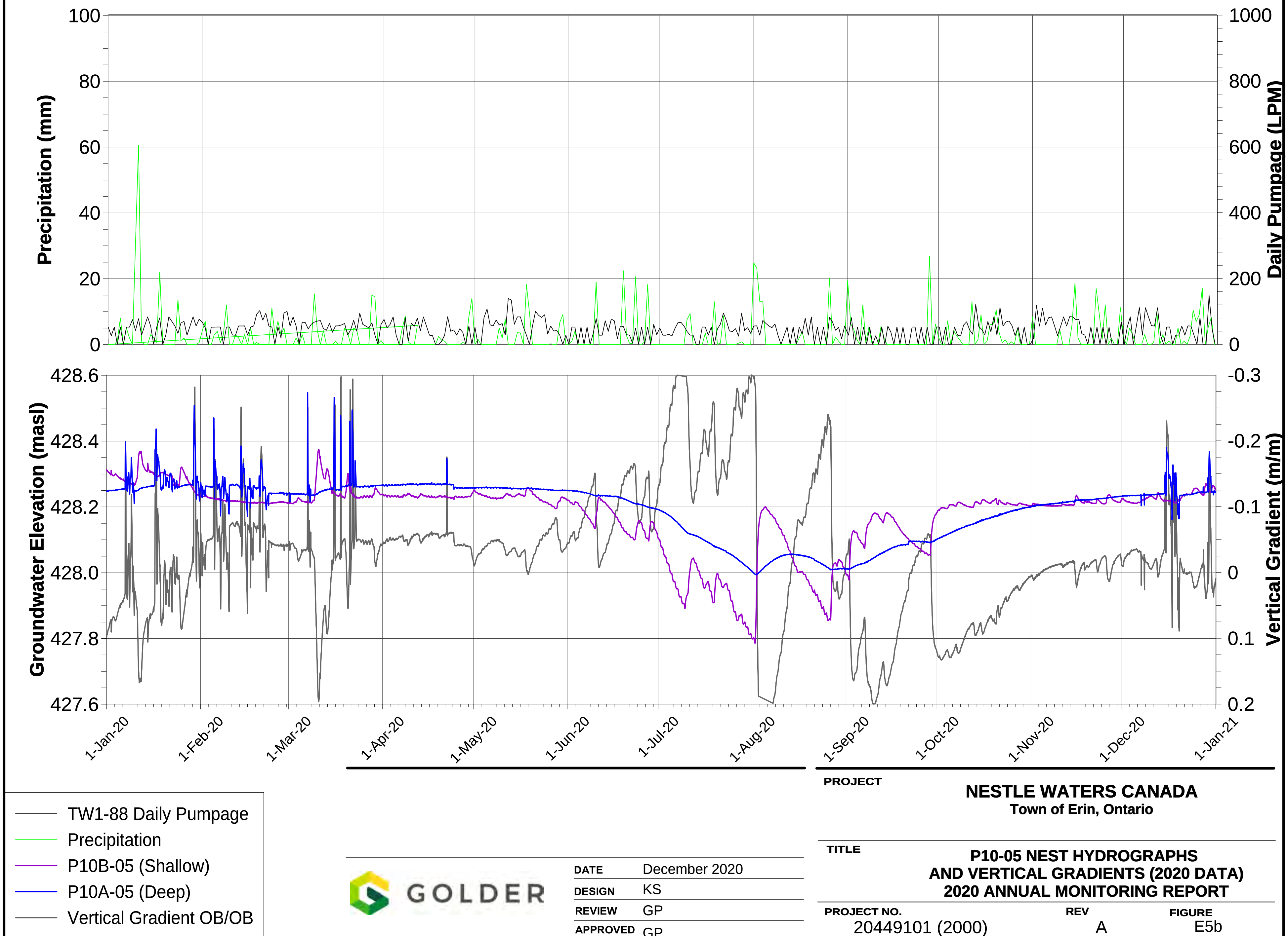
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P10-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E5a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

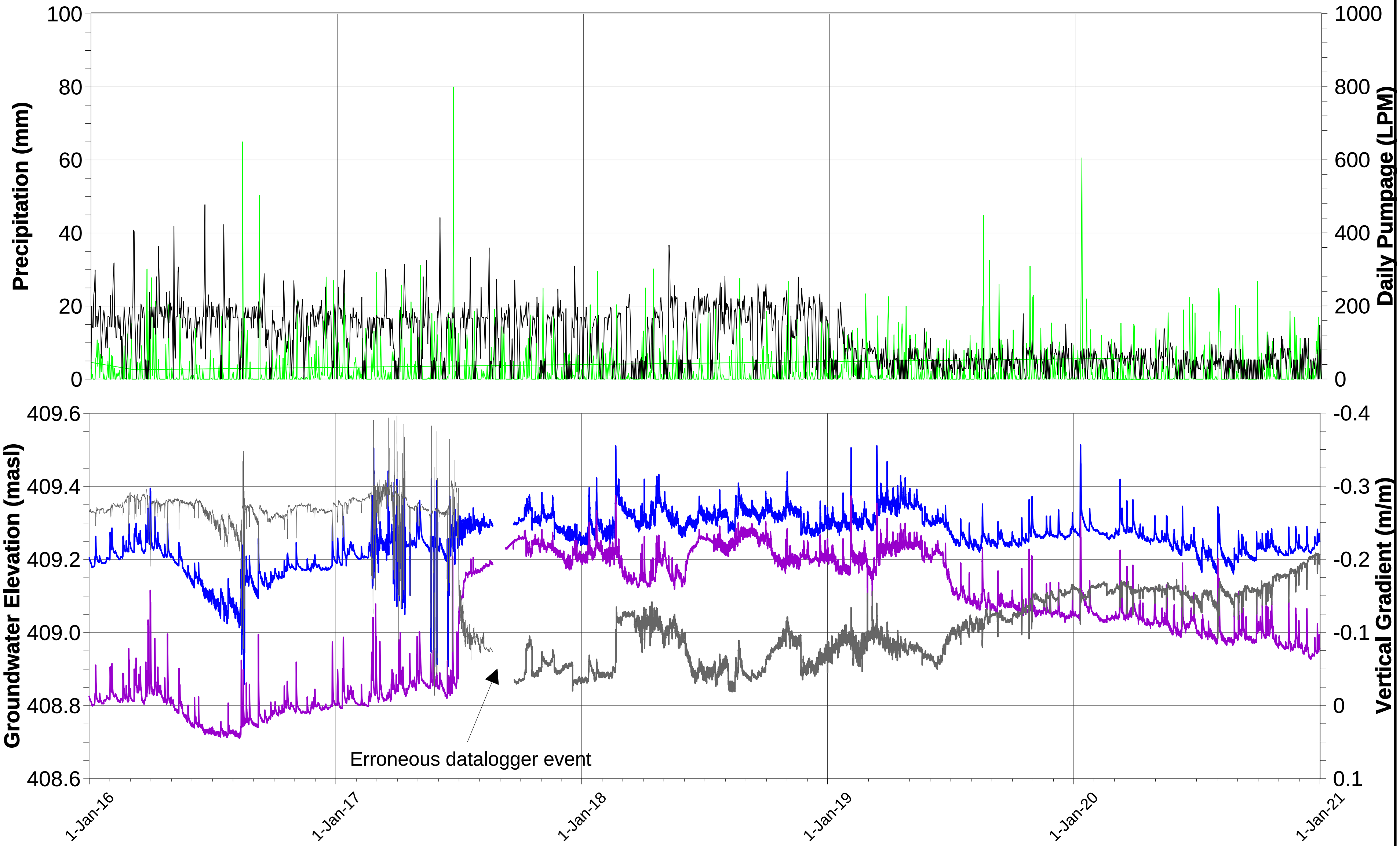
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P10-05 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E5b



TW1-88 Daily Pumpage
Precipitation
P12B-07 (Shallow)
P12A-07 (Deep)
Vertical Gradient OB/OB

NOTE:
Beaver activity caused the high water level in stream at P12A/B

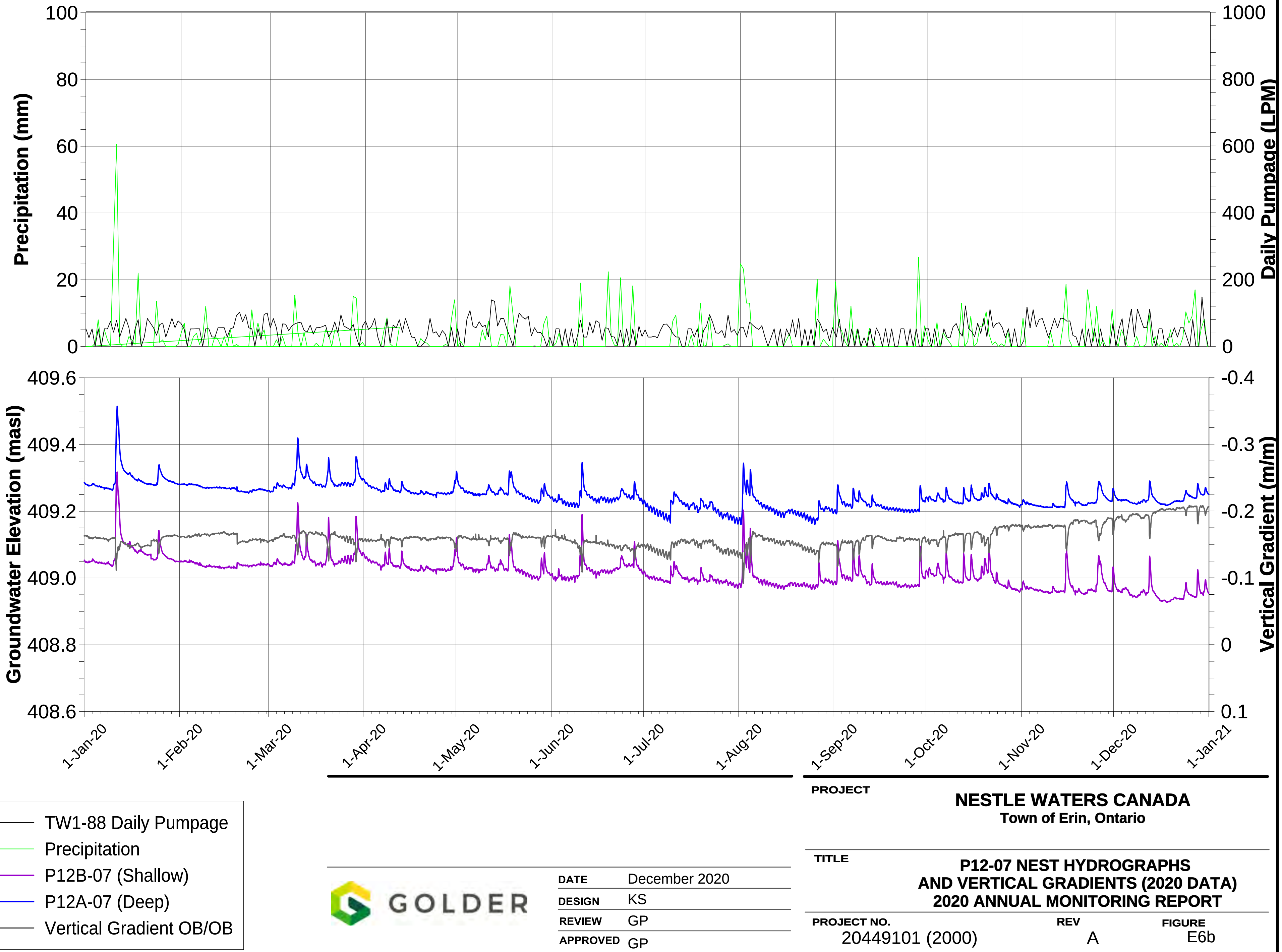
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT
NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE
P12-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E6a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

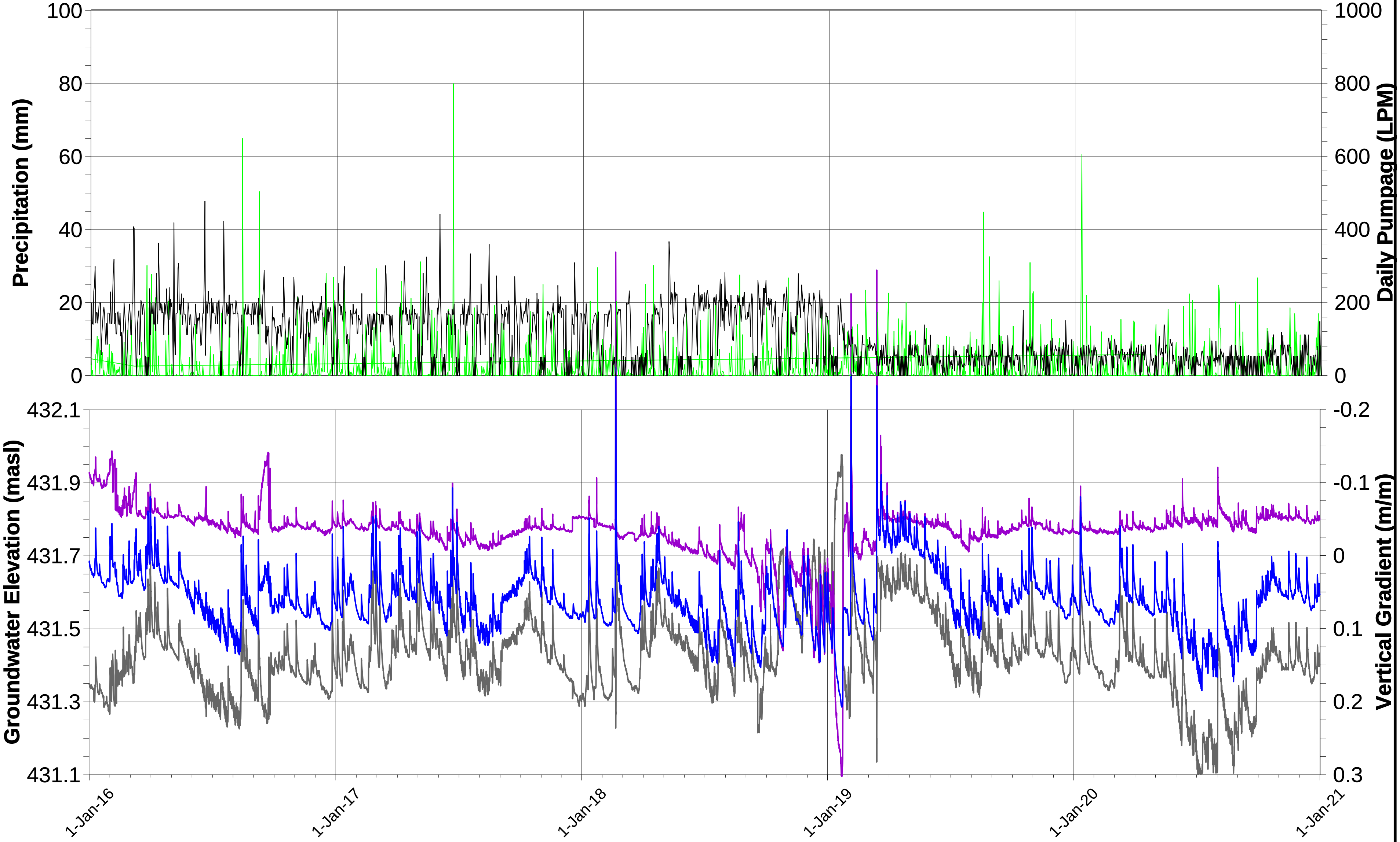
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P12-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E6b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

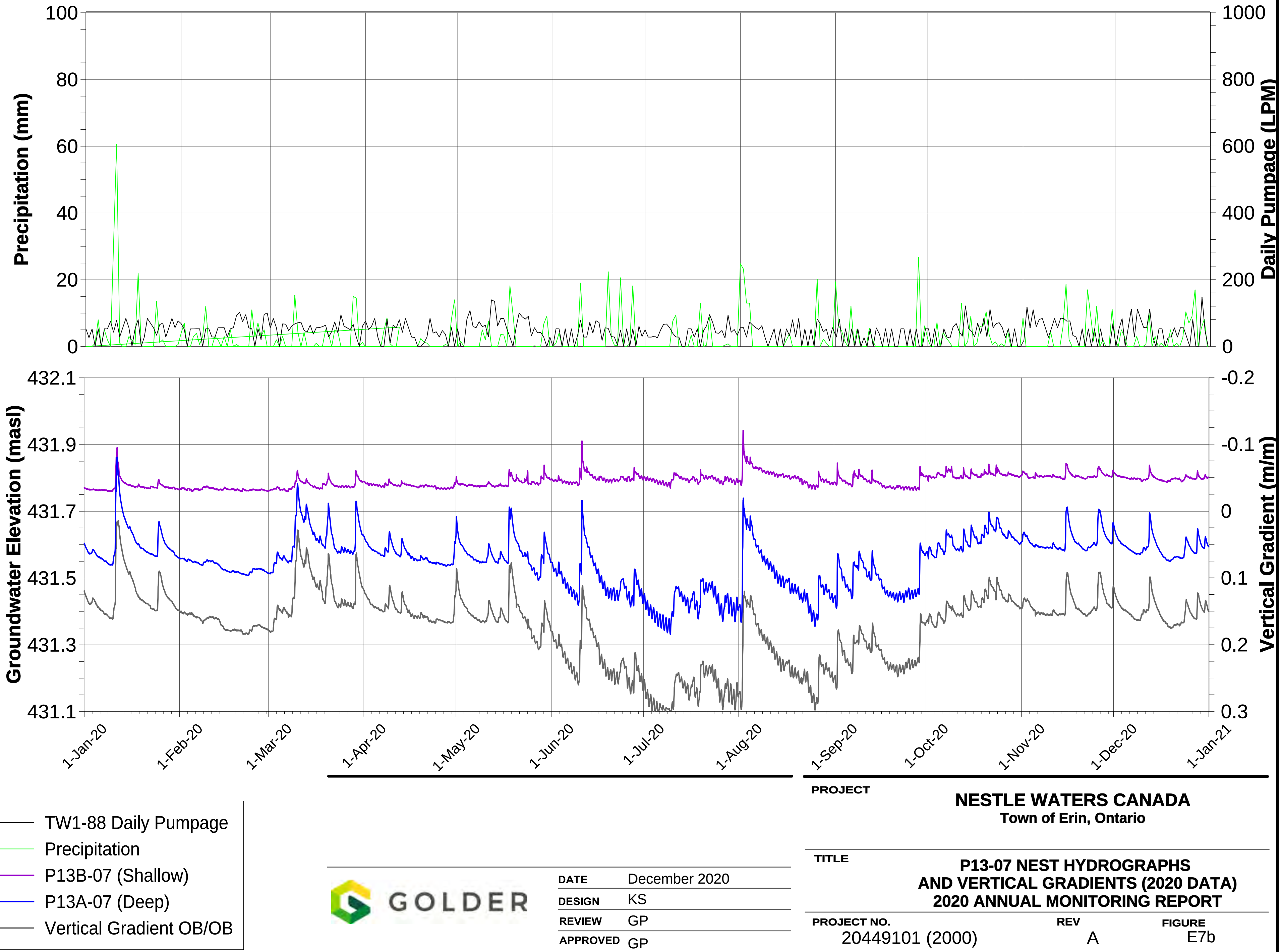
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P13-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E7a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

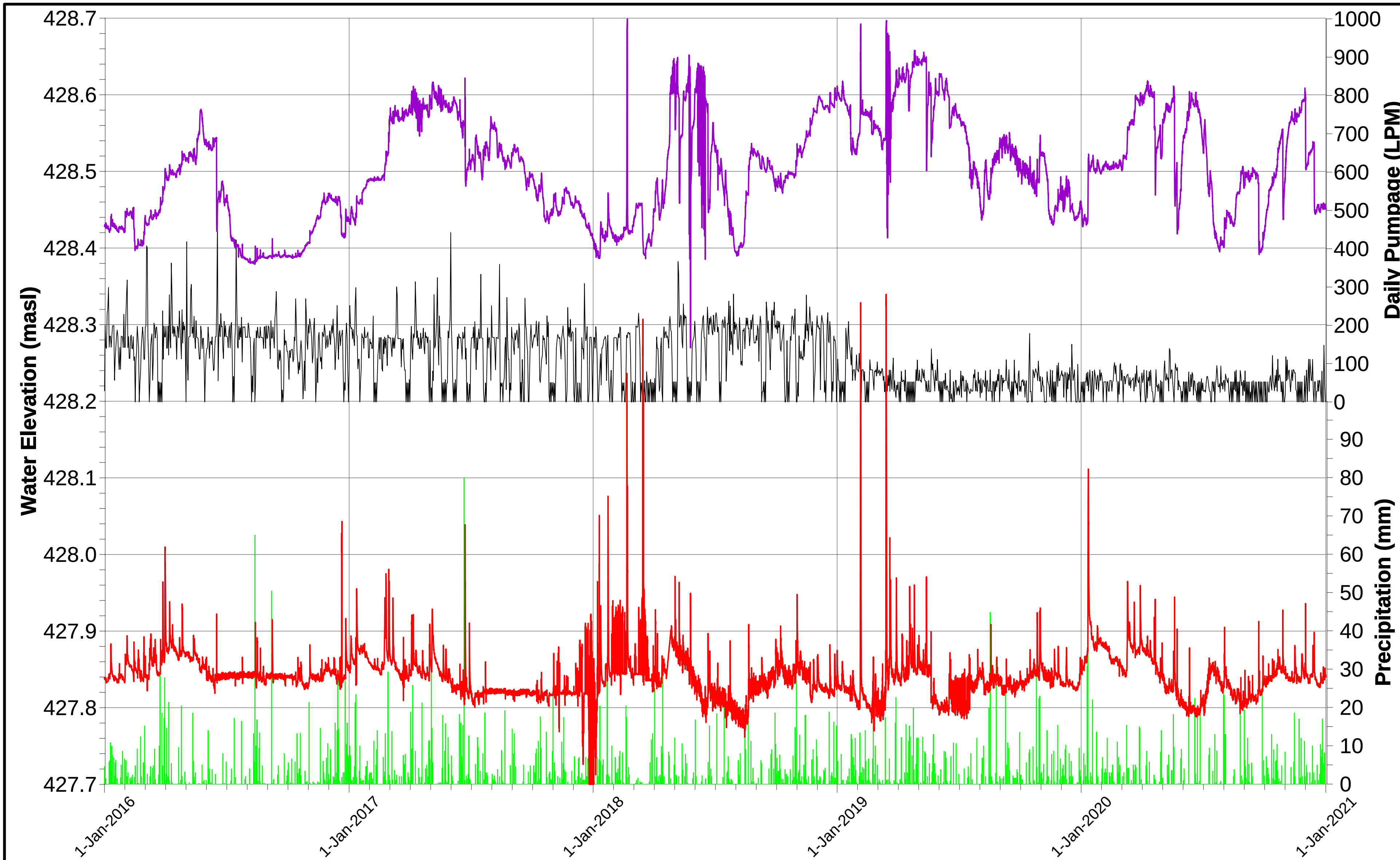
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

P13-07 NEST HYDROGRAPHS AND VERTICAL GRADIENTS (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E7b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

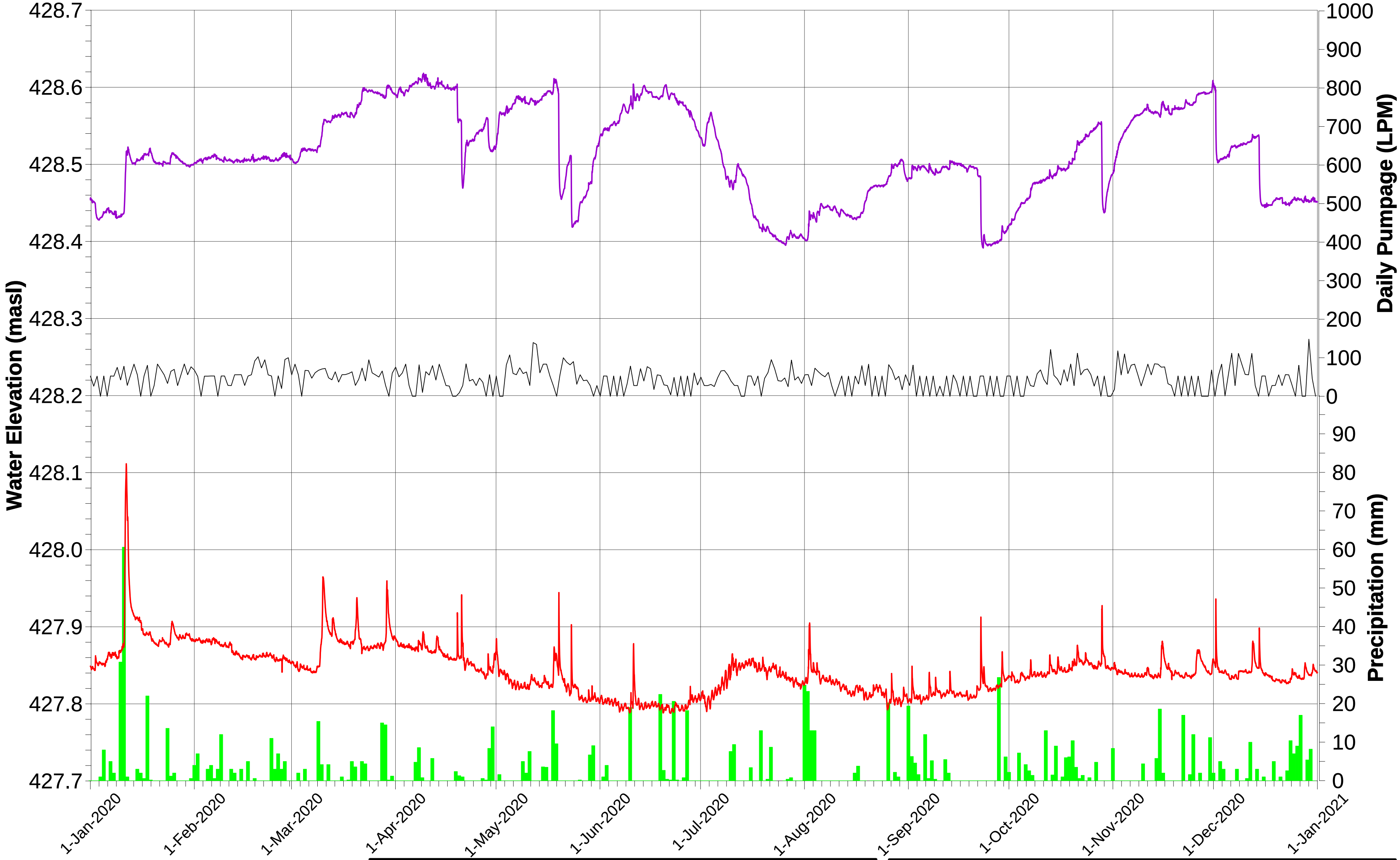
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN VICINITY OF ON-SITE POND 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E8a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

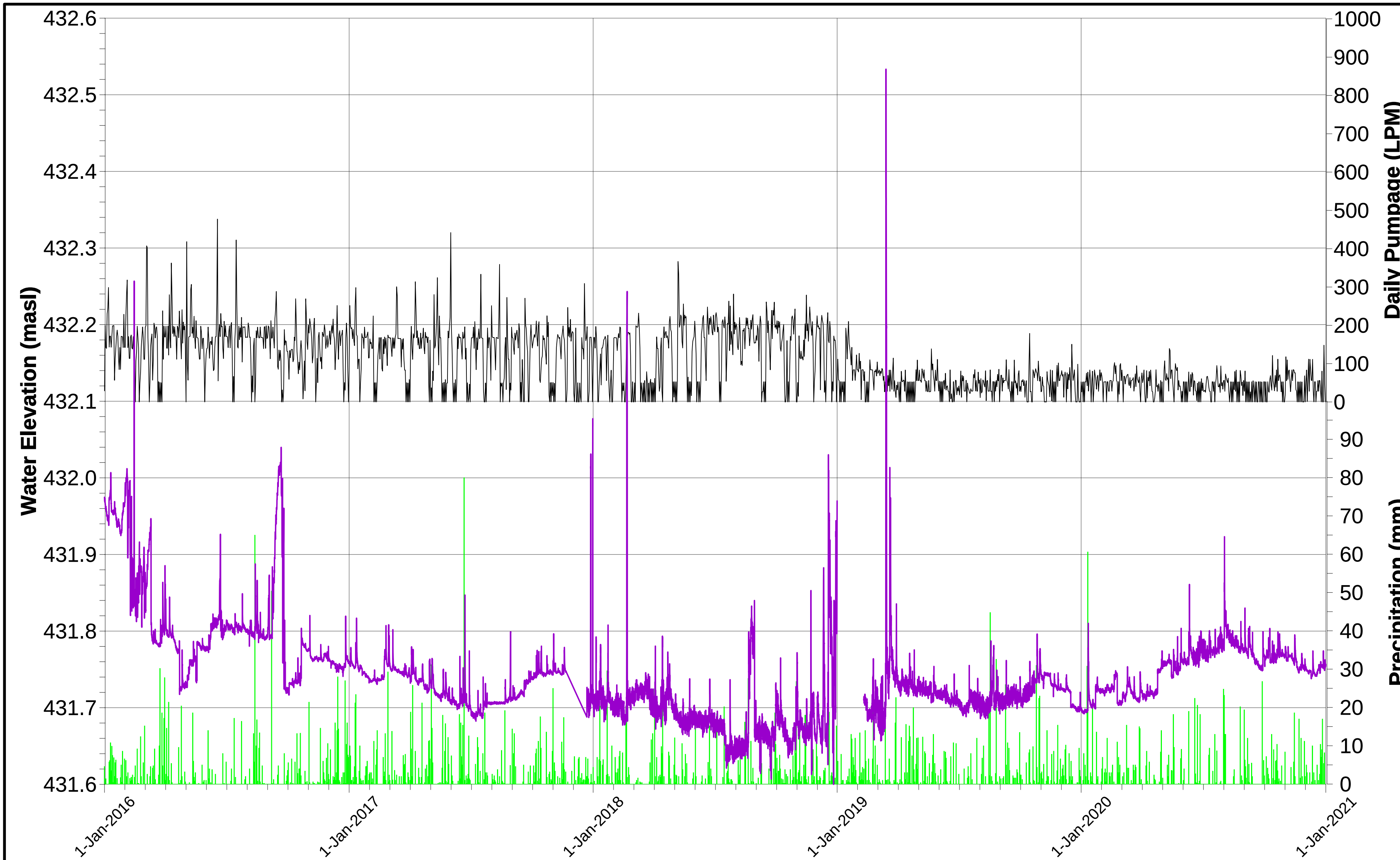
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN VICINITY OF ON-SITE POND (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E8b



TW1-88 Daily Pumpage
Precipitation
SW7-08 (Erin Branch of the Credit River)

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

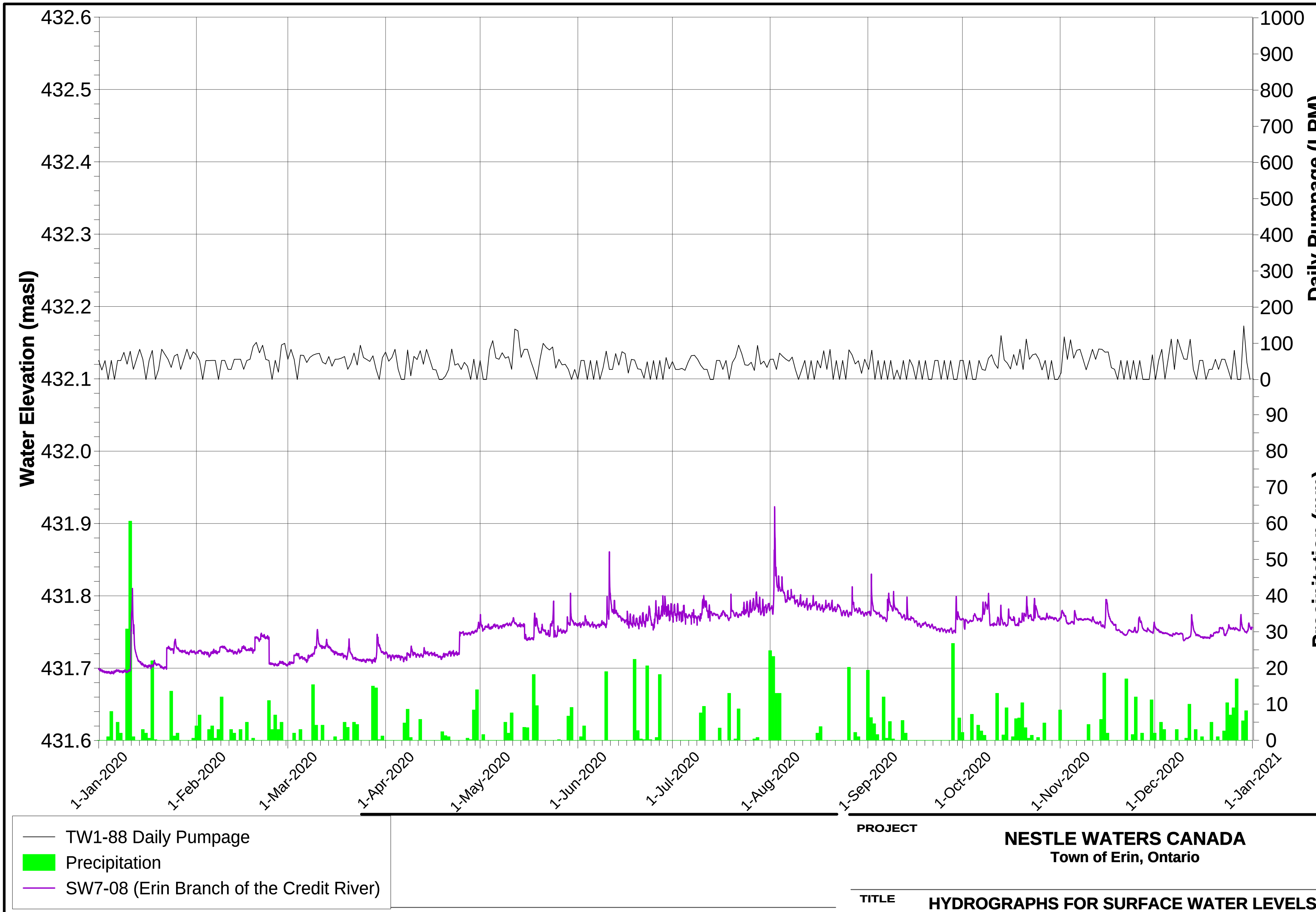
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN ERIN BRANCH OF CREDIT RIVER 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E9a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

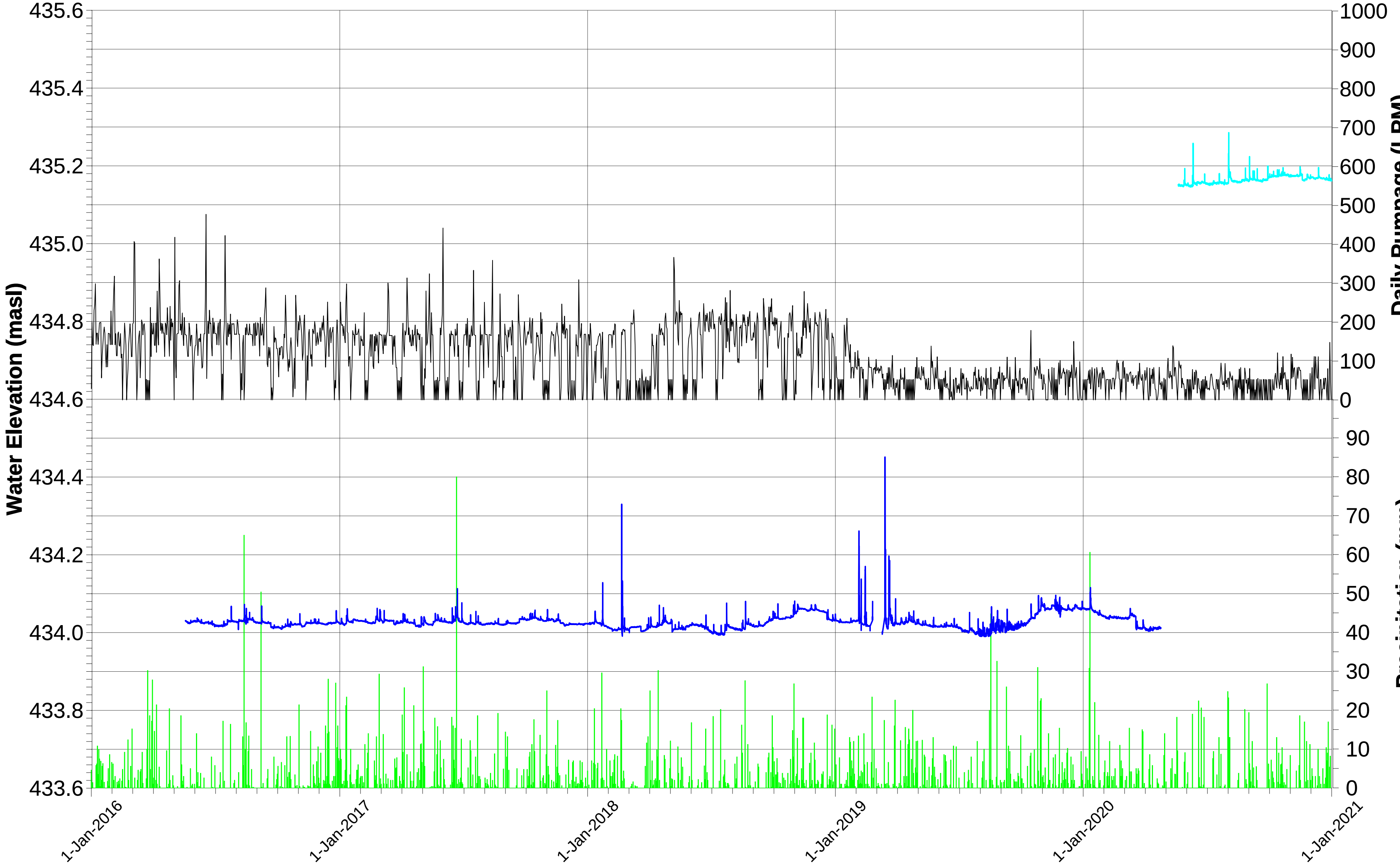
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN ERIN BRANCH OF CREDIT RIVER (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E9b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

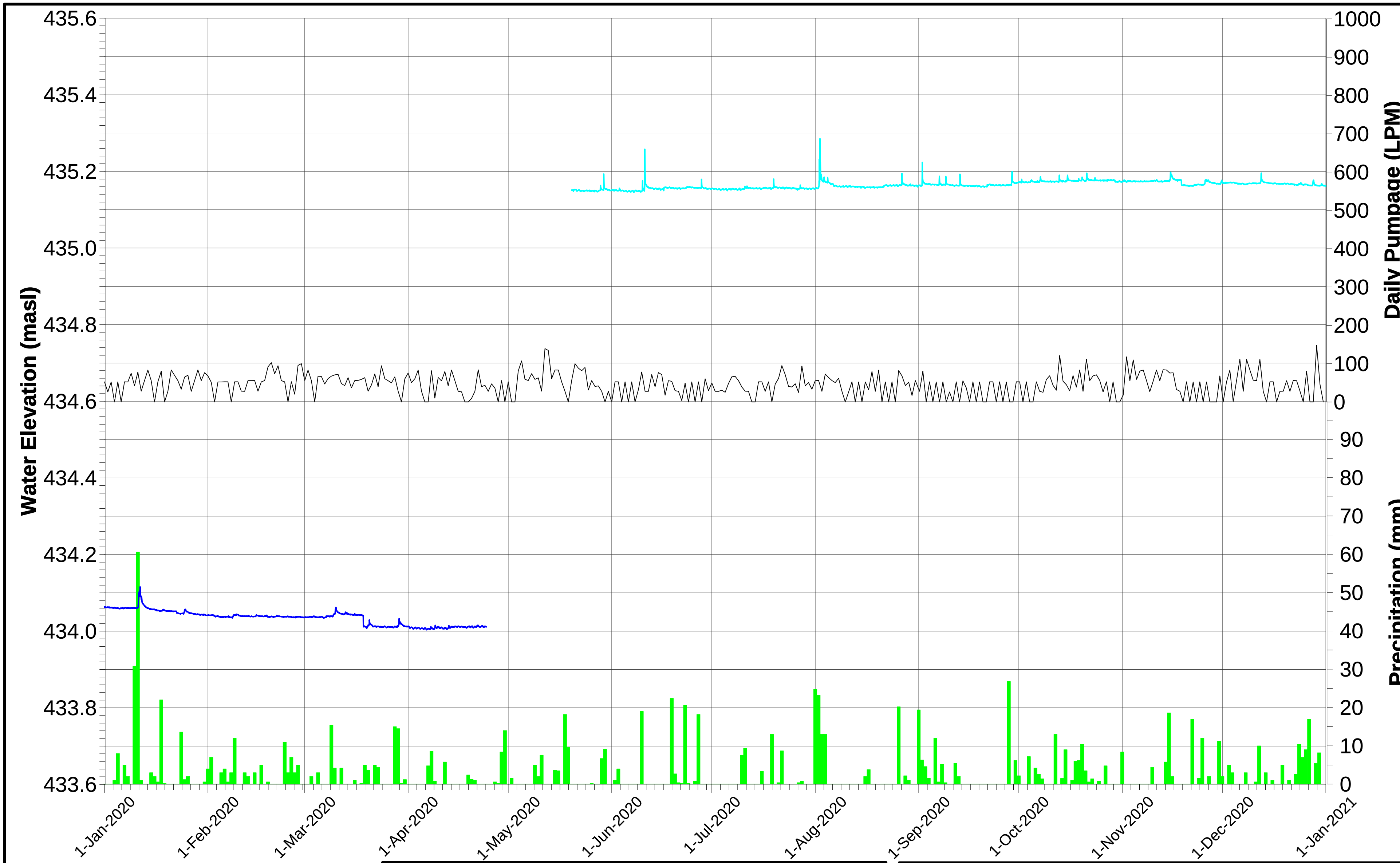
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN ERIN BRANCH OF CREDIT RIVER 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E10a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

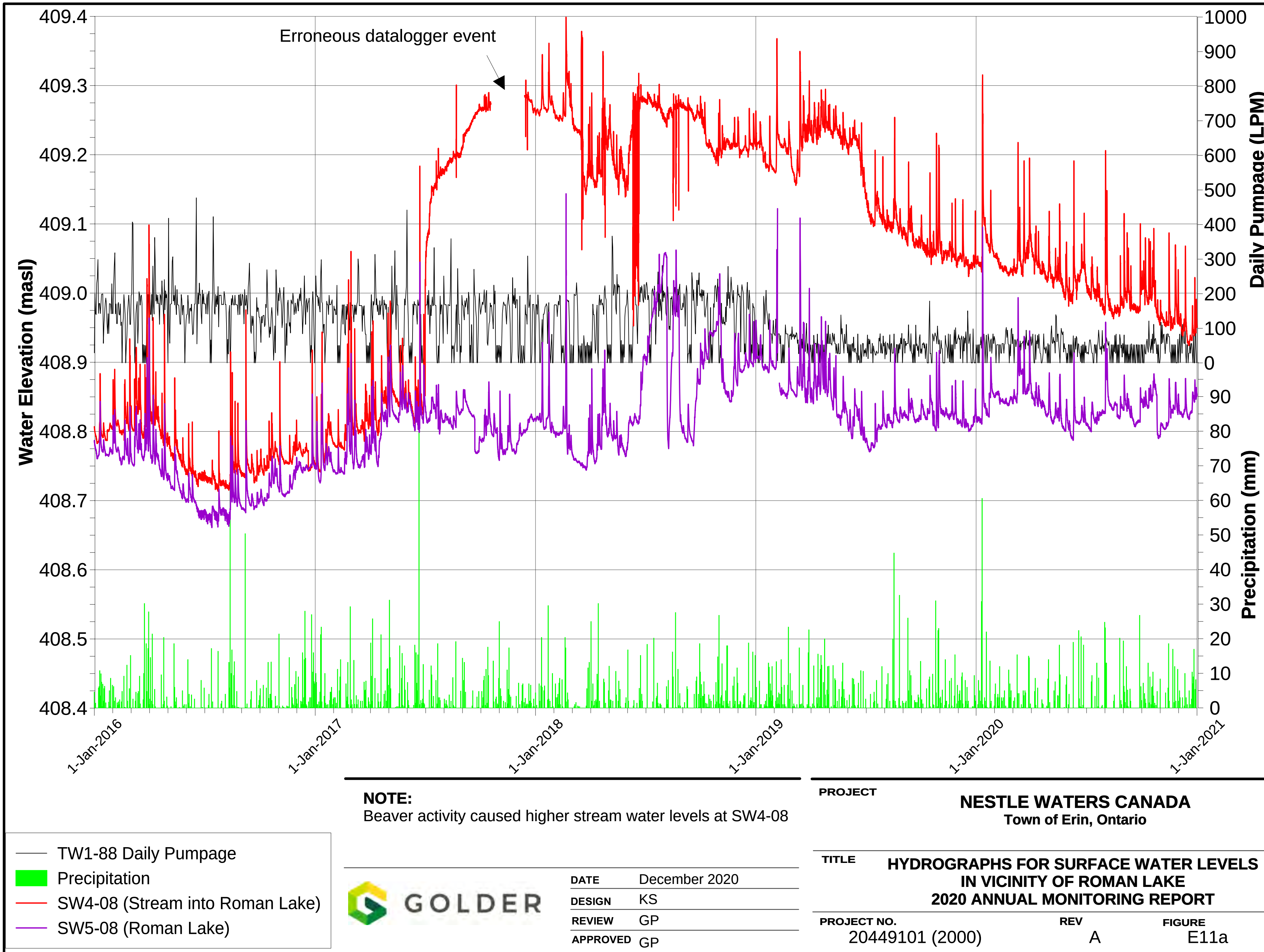
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN ERIN BRANCH OF CREDIT RIVER (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E10b



NOTE:
Beaver activity caused higher stream water levels at SW4-08

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

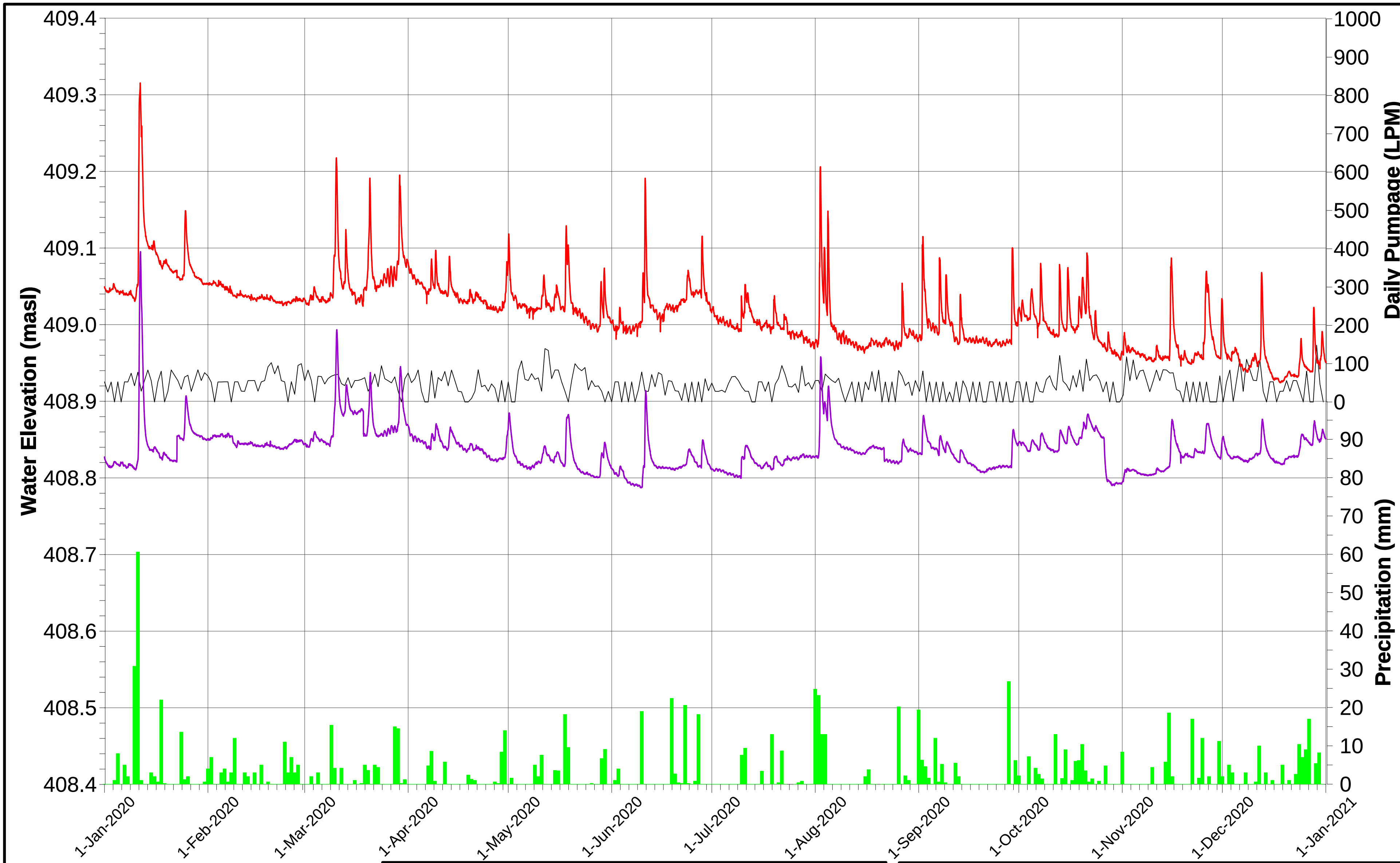
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN VICINITY OF ROMAN LAKE
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E11a



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPHS FOR SURFACE WATER LEVELS IN VICINITY OF ROMAN LAKE (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	E11b

TABLE E1

Manual Surface Water Elevations (Mini Piezometers)

2020 Annual Report

DATE	Water Level Elevation (masl)							
	P01A-07	P01B-07	P03A-05	P03B-05	P06A-07	P06B-07	P10A-05	P10B-05
22-Jan-20	428.00	427.99	428.54	428.52	428.48	428.50	FROZEN	FROZEN
19-Feb-20	427.96	427.97	428.51	428.50	428.47	428.50	428.25	428.21
18-Mar-20	427.99	427.99	428.59	428.58	428.54	428.56	428.25	428.22
24-Apr-20	427.98	427.98	428.56	428.55	428.50	428.53	428.26	428.22
20-May-20	428.00	427.98	428.47	428.46	428.44	428.44	428.25	428.23
16-Jun-20	427.96	427.95	428.59	428.58	428.55	428.58	428.23	428.18
23-Jul-20	427.95	427.95	428.41	428.44	428.37	428.39	428.06	427.96
21-Aug-20	427.93	427.94	428.46	428.46	428.42	428.46	428.04	427.94
21-Sep-20	427.97	427.97	428.48	428.38	428.45	428.48	428.09	428.10
20-Oct-20	428.01	427.99	428.52	428.51	428.48	428.50	428.17	428.22
18-Nov-20	427.98	427.98	428.58	428.56	428.54	428.56	428.22	428.21
21-Dec-20	427.96	427.96	428.46	428.45	428.43	428.44	428.23	428.23

TABLE E1

Manual Surface Water Elevations (Mini Piezometers)

2020 Annual Report

DATE	Water Level Elevation (masl)					
	P11A-05	P11B-05	P12A-07	P12B-07	P13A-07	P13B-07
22-Jan-20	427.95	427.90	FROZEN	409.06	431.57	431.76
19-Feb-20	427.92	427.88	409.18	409.03	431.51	431.76
18-Mar-20	427.95	427.88	409.27	409.04	431.60	431.76
24-Apr-20	427.92	427.87	409.26	409.03	431.54	431.77
20-May-20	427.93	427.87	409.25	409.01	431.61	431.79
16-Jun-20	427.87	427.83	409.22	409.00	431.48	431.79
23-Jul-20	427.91	427.85	409.22	408.99	431.47	431.80
21-Aug-20	427.89	427.84	409.18	408.97	431.43	431.78
21-Sep-20	427.90	427.85	409.21	408.97	431.45	431.76
20-Oct-20	427.94	427.88	409.26	409.04	431.64	431.81
18-Nov-20	427.92	427.86	409.22	408.96	431.60	431.80
21-Dec-20	427.91	427.84	FROZEN	408.94	431.56	431.79

TABLE E2

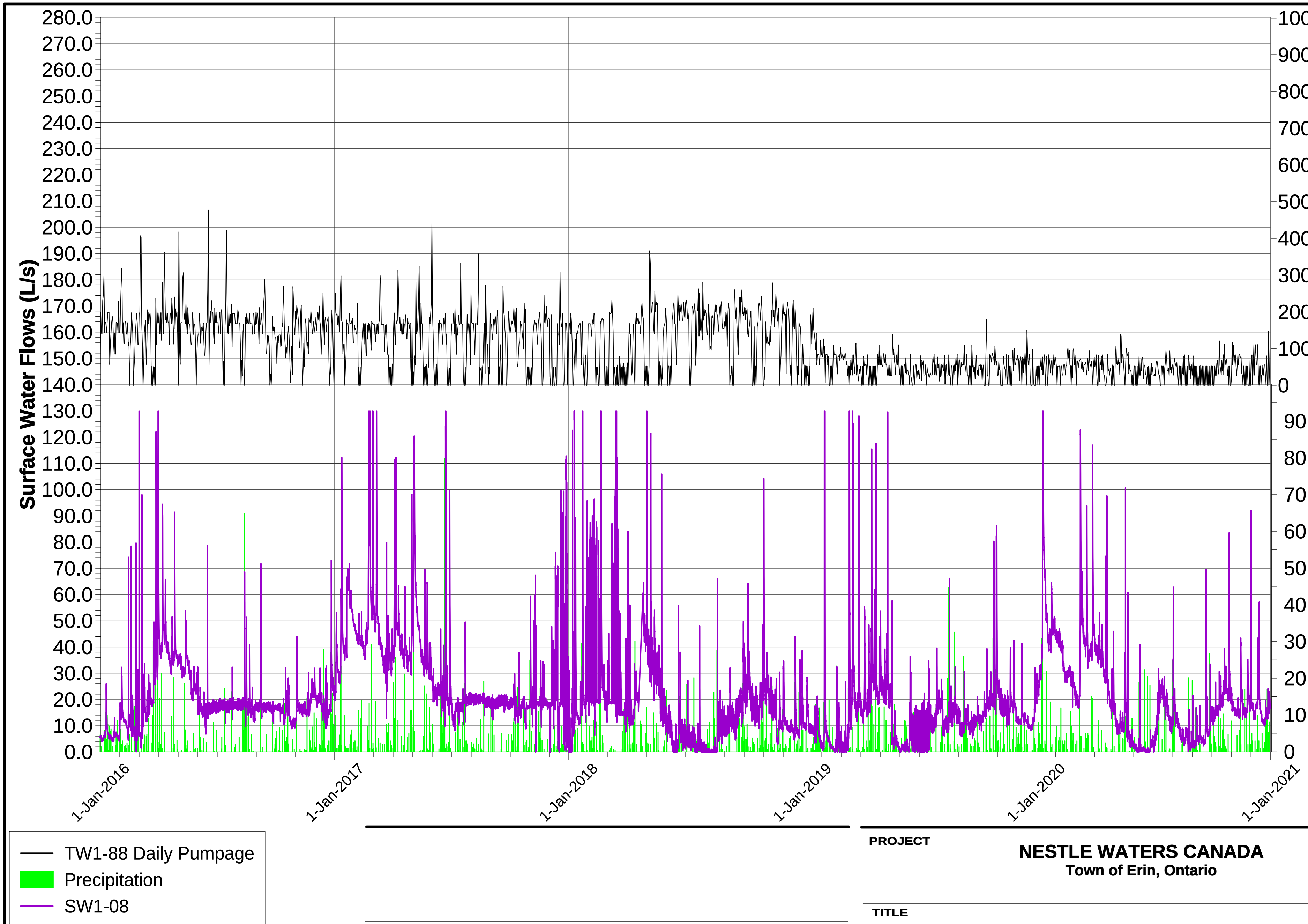
Manual Surface Water Elevations (Surface Water Stations)

2020 Annual Report

DATE	Water Level Elevation (masl)							
	SW1-08	SW3-00 (d/s)	SW3-08	SW4-08	SW5-08	SW7-08	SW7A-16	SW7B-20
22-Jan-20	427.87	427.85	428.50	409.07	FROZEN	431.72	434.05	-
19-Feb-20	427.86	427.84	428.50	409.03	408.84	431.72	434.03	-
18-Mar-20	427.88	427.85	428.56	409.04	408.86	431.72	434.04	-
24-Apr-20	427.84	427.85	428.53	409.02	408.82	431.73	434.01	-
20-May-20	427.83	427.90	428.44	409.01	408.82	431.75	REMOVED	435.15
16-Jun-20	427.80	427.84	428.59	409.01	408.81	431.76	REMOVED	435.15
23-Jul-20	427.84	427.86	428.40	409.00	408.82	431.77	REMOVED	435.16
21-Aug-20	427.81	427.84	428.47	408.97	408.82	431.78	REMOVED	435.17
21-Sep-20	427.81	427.85	428.49	408.98	408.80	431.76	REMOVED	435.16
20-Oct-20	427.85	427.93	428.50	409.04	408.86	431.76	REMOVED	435.18
18-Nov-20	427.83	427.84	428.56	408.95	408.83	431.76	REMOVED	435.17
21-Dec-20	427.82	427.84	428.45	408.93	FROZEN	FROZEN	REMOVED	435.17

APPENDIX F

Surface Water Flow Monitoring



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

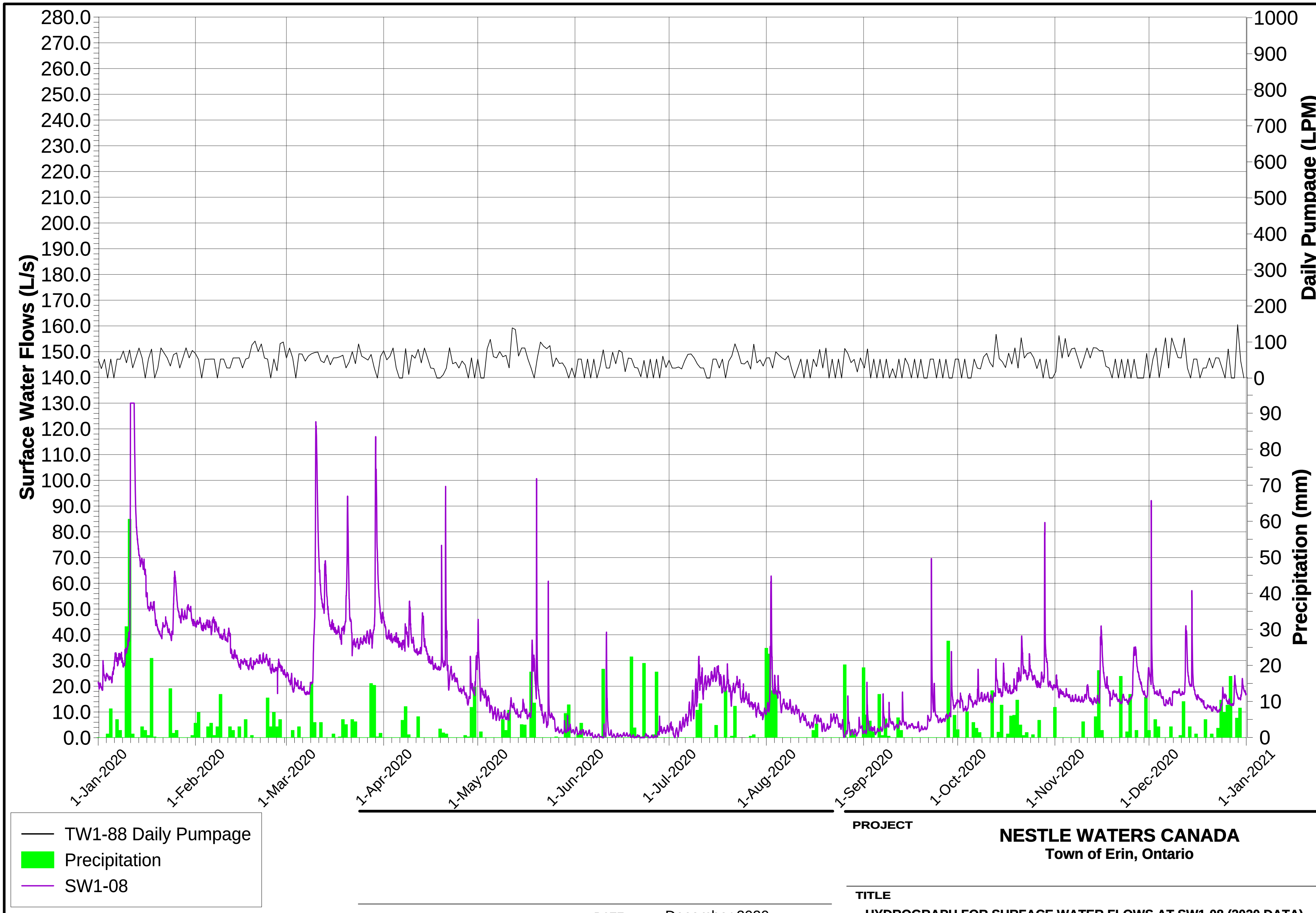
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR SURFACE WATER FLOW AT SW1-08
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	F1a

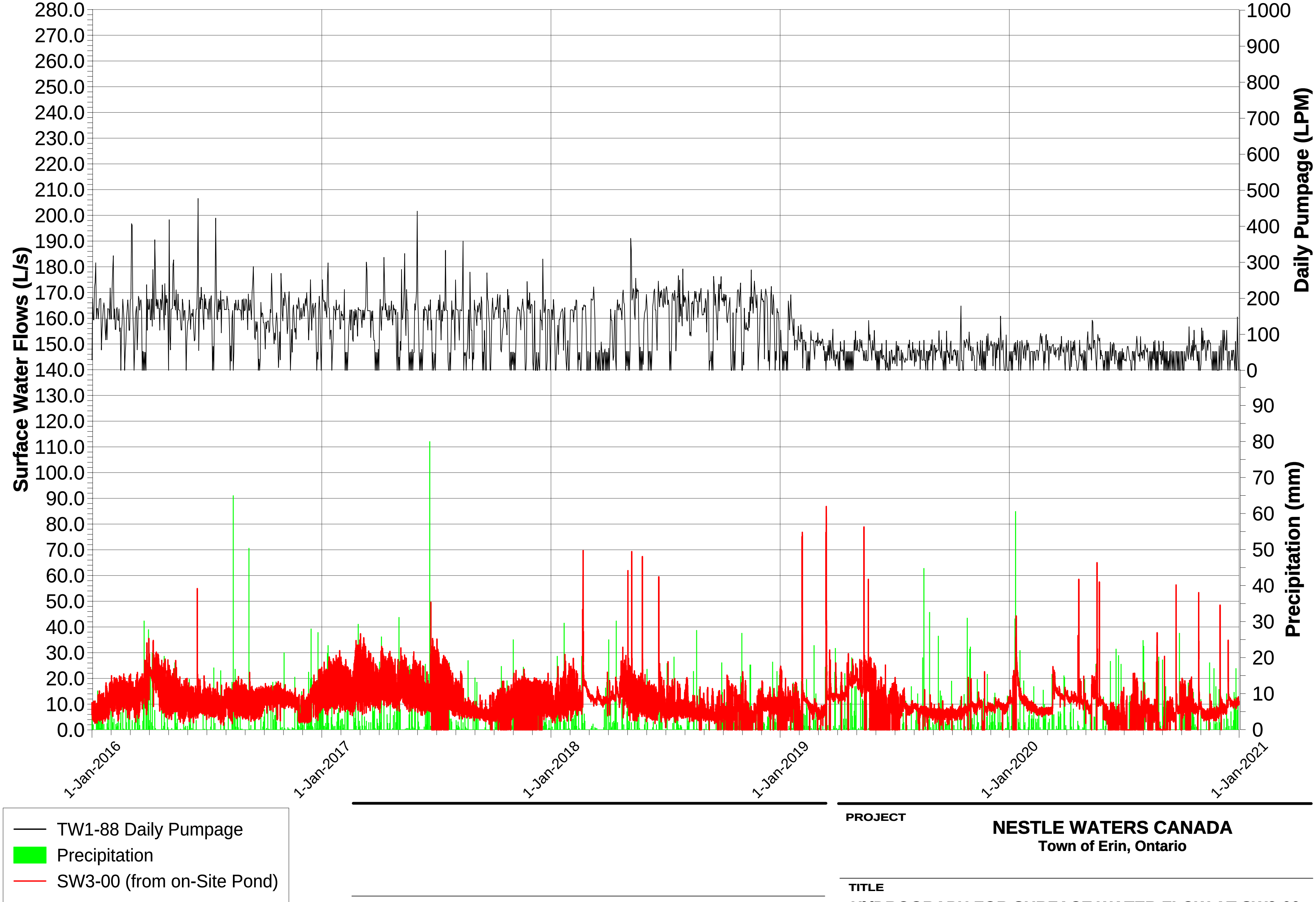


PROJECT	**NESTLE WATERS CANADA** **Town of Erin, Ontario**
TITLE	**HYDROGRAPH FOR SURFACE WATER FLOWS AT SW1-08 (2020 DATA)** **2020 ANNUAL MONITORING REPORT**

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	F1b



GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

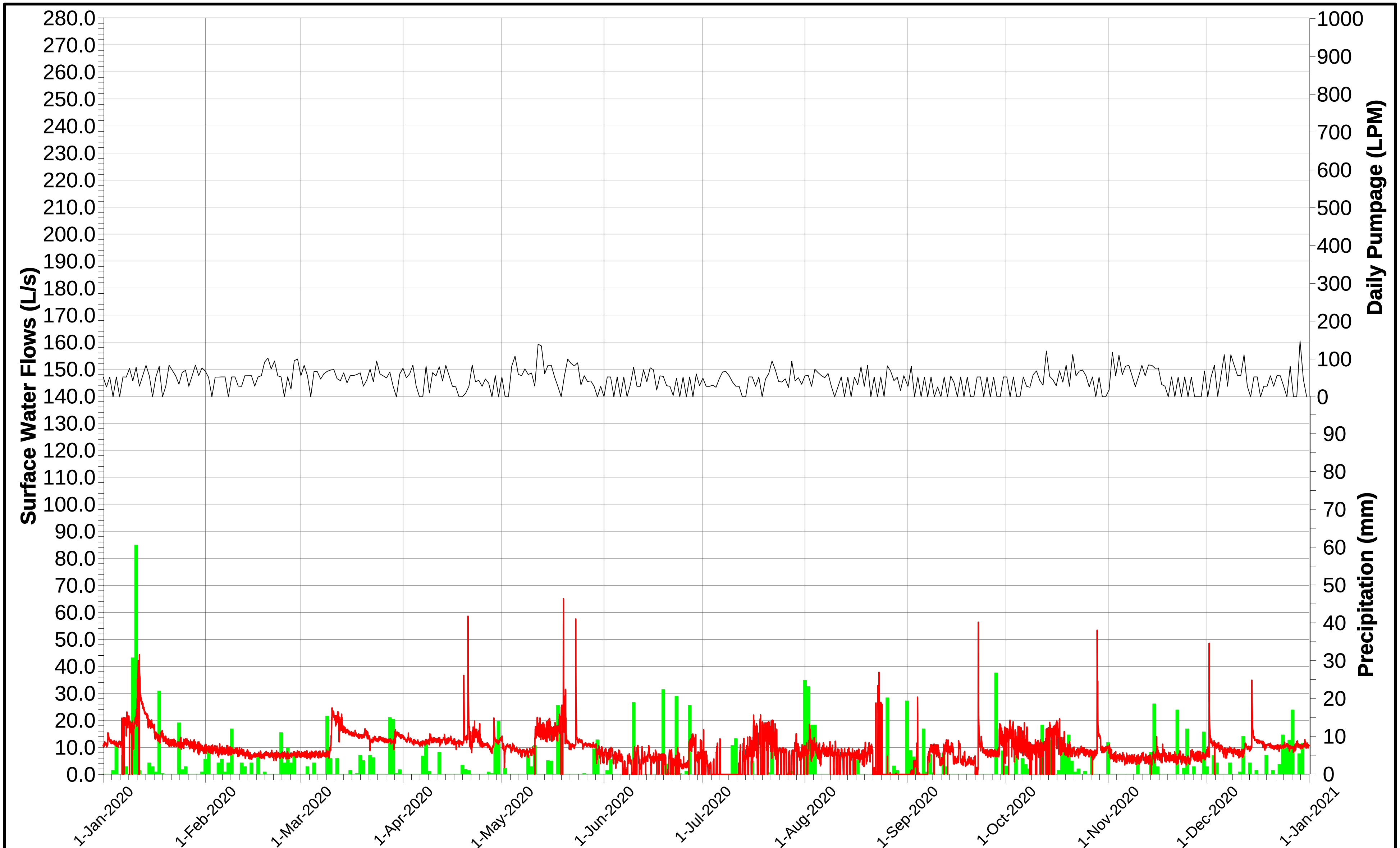
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR SURFACE WATER FLOW AT SW3-00
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	F2a



PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

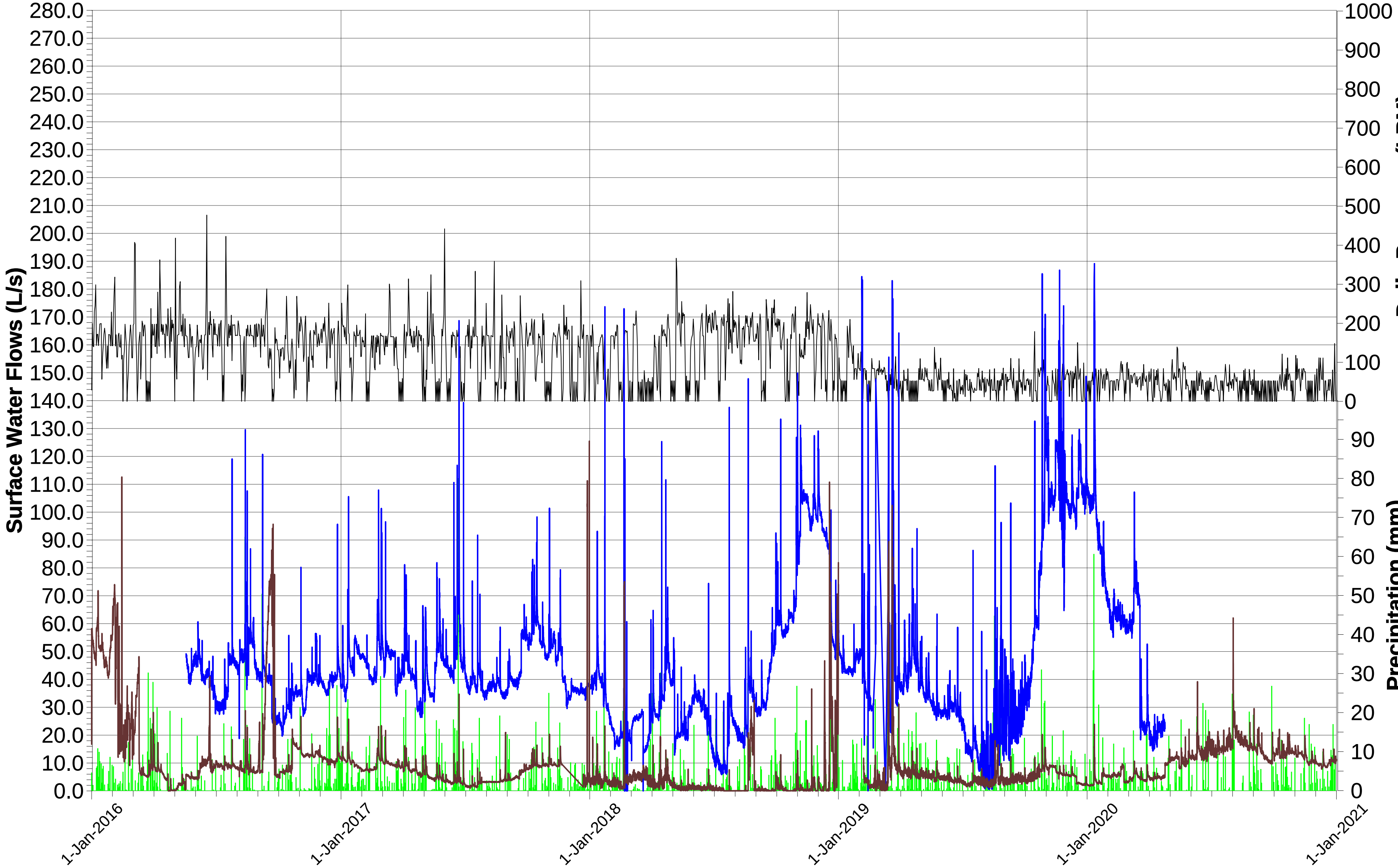
GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

TITLE

HYDROGRAPH FOR SURFACE WATER FLOWS AT SW3-00 (2020 DATA)
2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	F2b



Water level measurements recorded during winter months is influenced by frozen conditions. Data is reported with lower confidence.

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

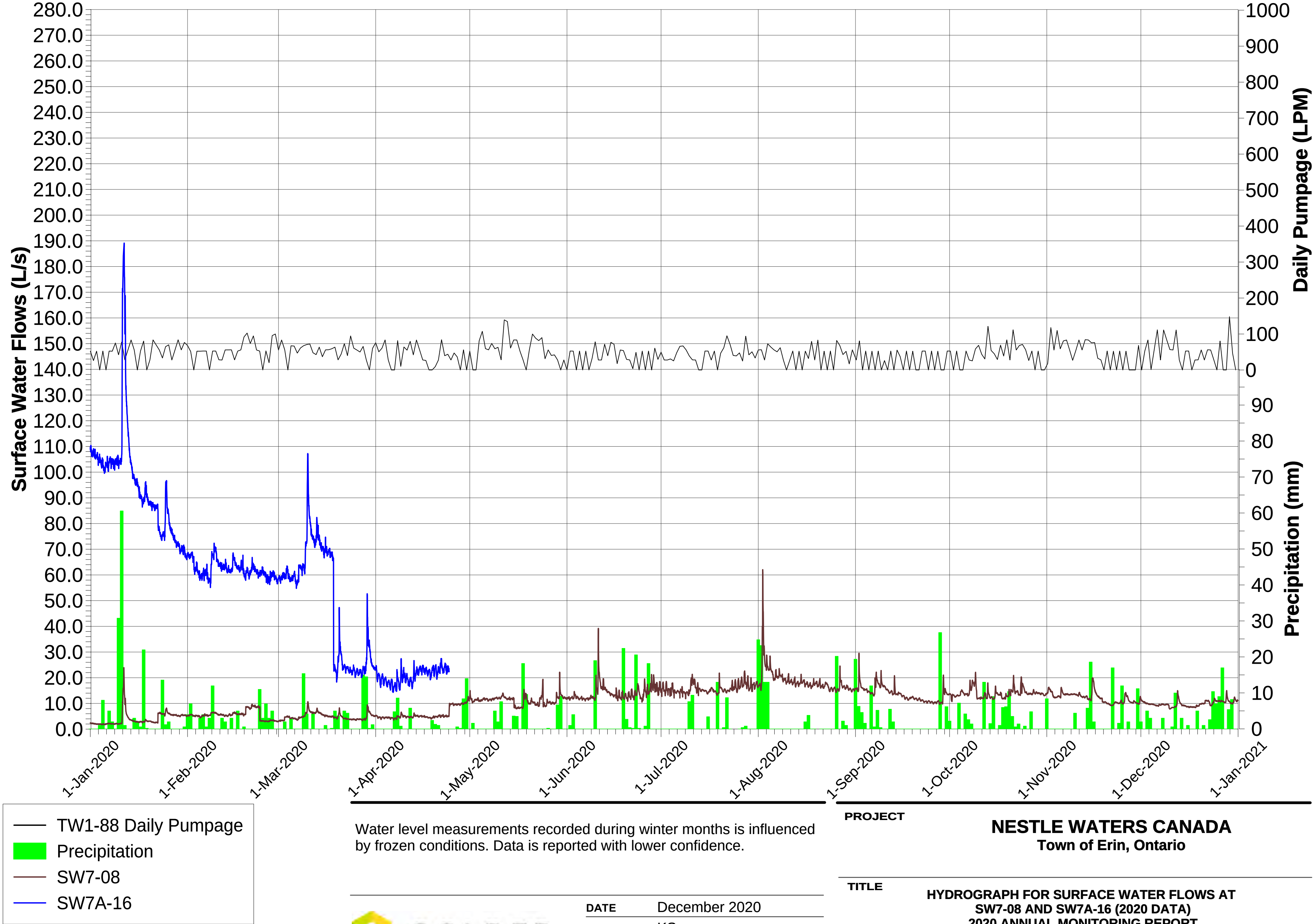
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR SURFACE WATER FLOW AT SW7-08 AND SW7A-16
2019 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
13-1152-0250 (2000)	A	F3a



Water level measurements recorded during winter months is influenced by frozen conditions. Data is reported with lower confidence.

GOLDER

DATE	December 2020
DESIGN	KS
REVIEW	GP
APPROVED	GP

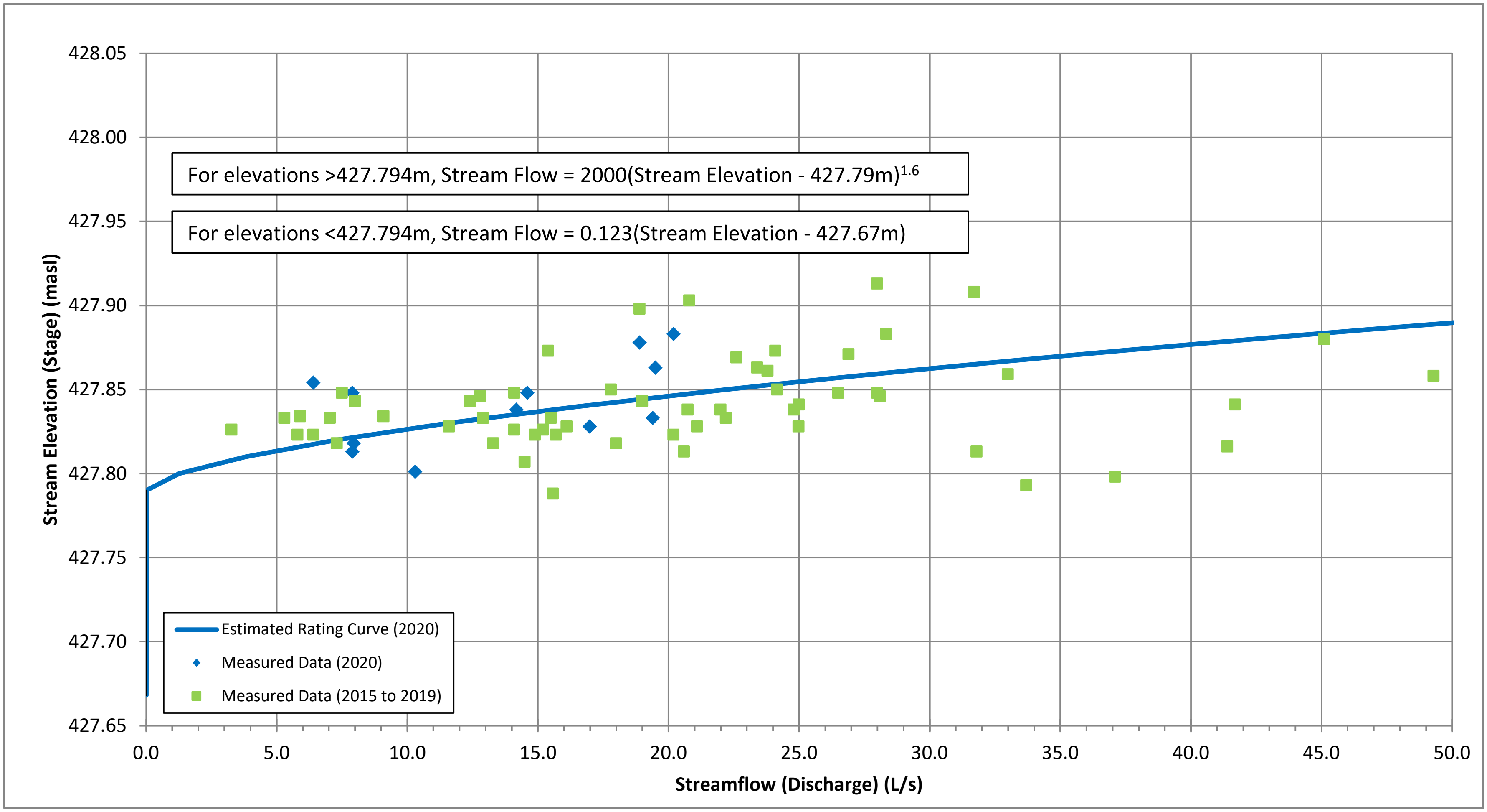
PROJECT

NESTLE WATERS CANADA
Town of Erin, Ontario

TITLE

HYDROGRAPH FOR SURFACE WATER FLOWS AT SW7-08 AND SW7A-16 (2020 DATA) 2020 ANNUAL MONITORING REPORT

PROJECT NO.	REV	FIGURE
20449101 (2000)	A	F3b

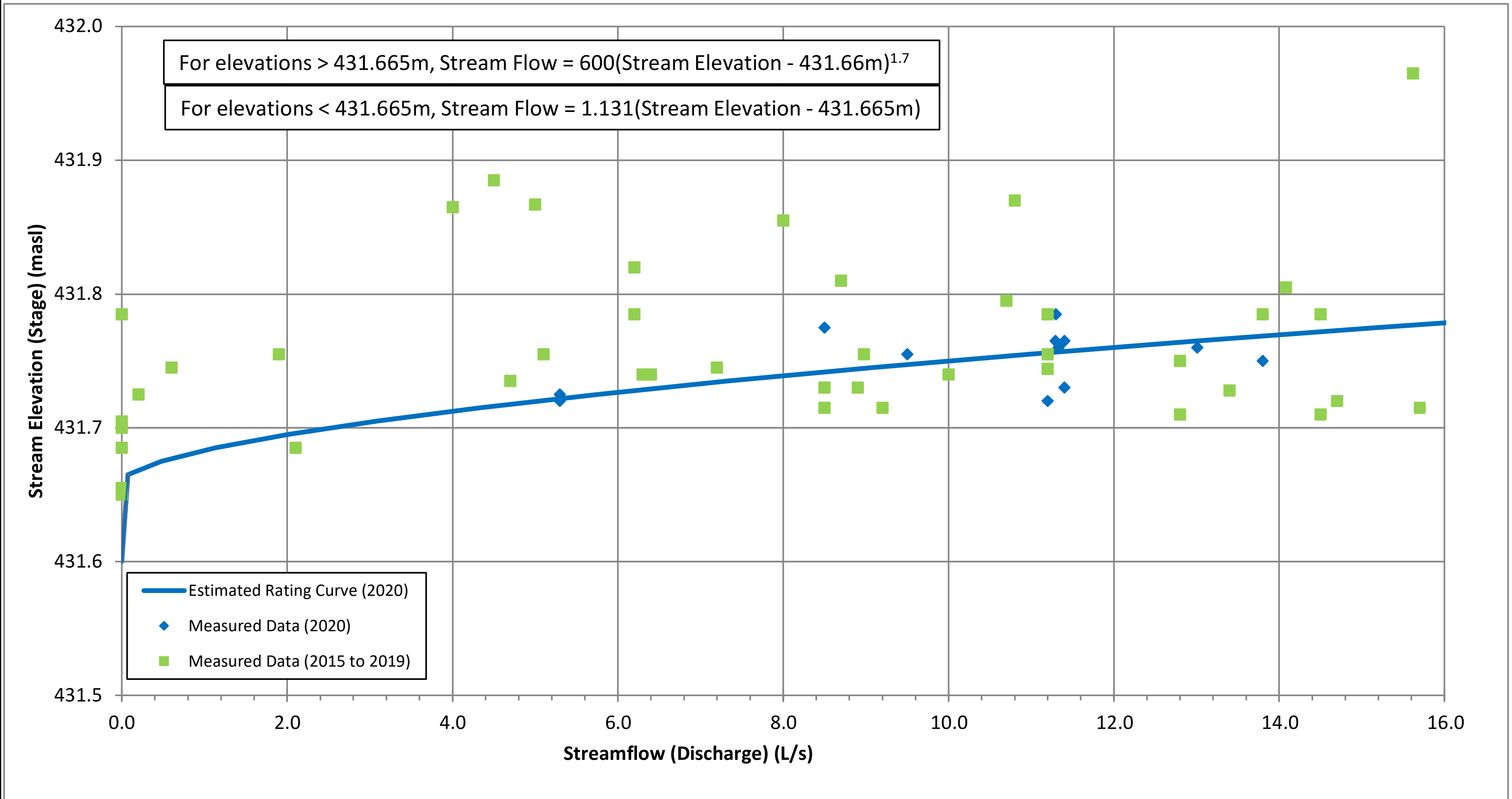


2020 Data Notes:
In 2020, the range of water levels recording during manual flow measurements= 427.80 to 427.88 masl. The full range of water levels recorded in 2020 = ~427.78 to ~428.11 masl.

Figure F4

STAGE-DISCHARGE MEASUREMENTS FOR SW1 (2020)
2020 ANNUAL MONITORING REPORT
NESTLE WATERS CANADA
Town of Erin, Ontario

GOLDER



2020 Data Notes:
In 2020, the range of water levels recorded during manual flow measurements= 431.72 to 431.78 masl. The full range of water levels recorded in 2020 = ~431.69 to ~431.92 masl.

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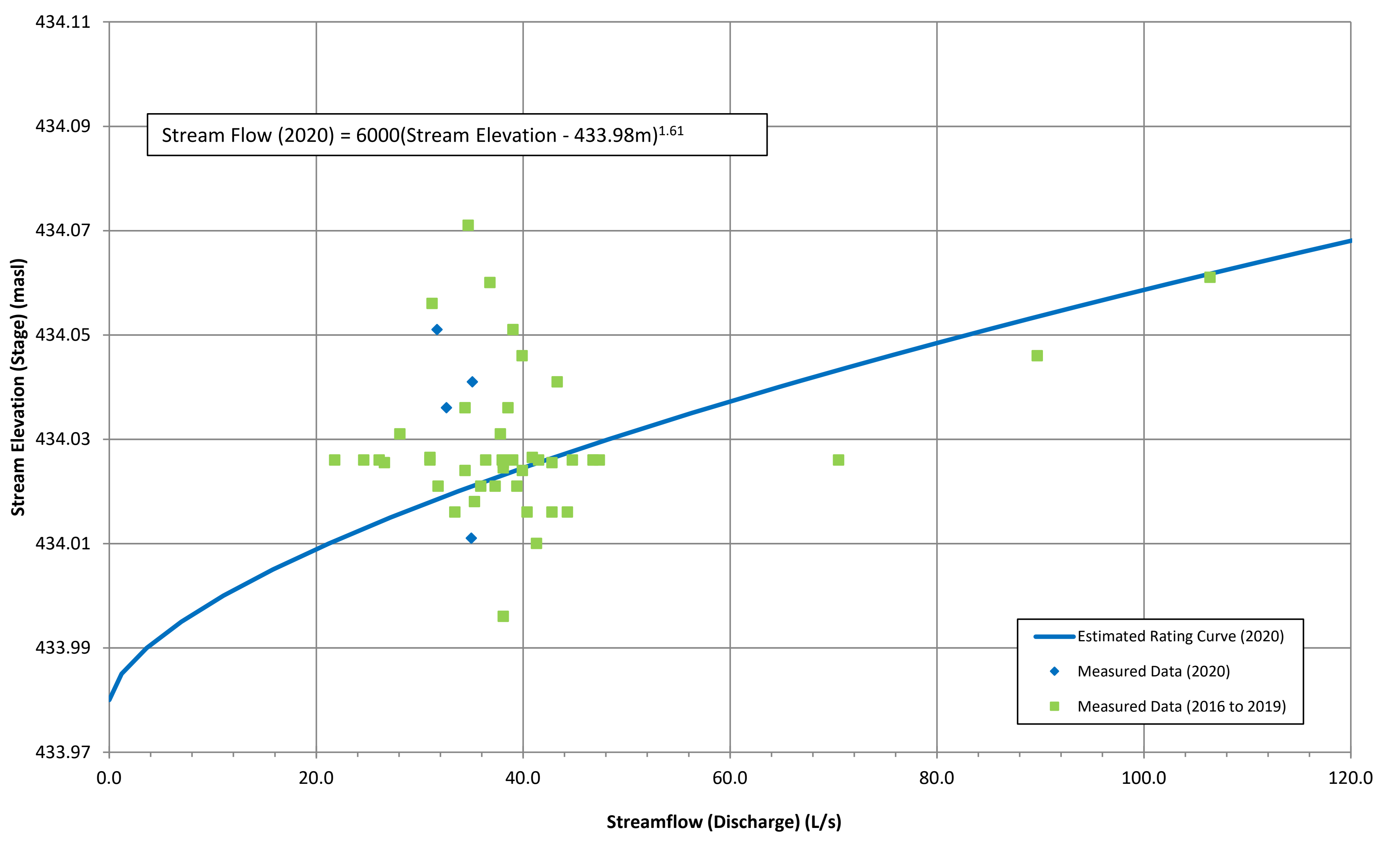
Figure F5

STAGE-DISCHARGE MEASUREMENTS FOR SW7 (2020)
2020 ANNUAL MONITORING REPORT
NESTLE WATERS CANADA
Town of Erin, Ontario



2020 Data Notes:
In 2020, the range of water levels recorded during manual flow measurements= 434.01 to 434.05 masl. The full range of water levels recorded in 2020 = ~434.00 to ~434.12 masl.

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Figure F6
STAGE-DISCHARGE MEASUREMENTS FOR SW7A (2020)
2020 ANNUAL MONITORING REPORT
NESTLE WATERS CANADA
Town of Erin, Ontario

TABLE F1
Surface Water Flow
2020 Annual Report

DATE	SW1-99 FLOW (L/sec)	SW3-00 FLOW (L/sec)	SW7-08 FLOW (L/sec)	SW7A-16 FLOW (L/sec)	SW7B-20 FLOW (L/sec)
2020-01-22	18.9	12.2	5.3	31.7	-
2020-02-19	19.5	4.0	5.3	32.6	-
2020-03-18	20.2	10.4	11.2	35.1	-
2020-04-24	14.6	8.5	11.4	35.0	-
2020-05-20	19.4	15.1	9.5	REMOVED	41.3
2020-06-16	10.3	2.7	11.4	REMOVED	25.9
2020-07-23	7.9	6.6	8.5	REMOVED	35.7
2020-08-21	7.9	2.3	11.3	REMOVED	34.0
2020-09-21	8.0	1.9	11.3	REMOVED	37.2
2020-10-20	6.4	6.2	11.3	REMOVED	31.5
2020-11-18	14.2	1.7	13.0	REMOVED	27.6
2020-12-21	17.0	8.7	13.8	REMOVED	29.7

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